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Roger Maylor

The Morphosyntax of the German
Inseparable Prefixes in a
Figure / Ground Framework

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the degree of Doctor of Philosophy in the University of Durham

Department of Linguistics and English Language
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ABSTRACT

This study attempts a comprehensive analysis of the German so-called inseparable prefixes *be-*, *ge-*, *er-*, *ver-*, *ent-*. The framework is Talmy's (1978) Figure/Ground distinction, in which a Figure is perceived as located or moving with respect to a frame of reference, the Ground. The pre-syntactic templates of X^0 categories [Figure V [[$\pm$ LOC] Ground]] and [Agent V Figure [[+LOC] Ground]] derive *Das Heu war auf dem Wagen* 'The hay was on the cart' and *Er lud Heu auf den Wagen* 'He loaded hay onto the cart'. The *be-* prefix and its inverse the *ent-* prefix are prepositional allomorphs which alternatively realize the feature [+LOC]. Foregrounding of [[+LOC] Ground]] causes the feature [+LOC] to be adjoined to the verb as the prefix *be-*: *Er belud den Wagen mit Heu* 'He be-loaded the cart with hay'. The Figure argument may also be incorporated by substitution into the verb forming a denominal *be-* or *ent-*verb (*bewaffnen* 'be-weapon, arm', *entwaffnen* 'ent-arm, disarm'. Adjunction of [+LOC] and substitution of the Figure are according to Van Riemsdijk's (1998) Head Adjacency Principle for syntactic head movement. A set of verb Classes is established according to whether the Figure and Ground arguments are VP-internal, subjects, or incorporated, thus rendering the traditional notions of θ -roles (Patient, Experiencer, Theme, etc.) superfluous.

I propose a crucial development of Talmy's Figure/Ground distinction, the 'hidden' Ground, whereby the Ground is the prior location or state of the Figure. In this case the prefixes are allomorphs of the 'change of state' P that I denote as ($\rightarrow$). On simplex verbs this feature means simply 'forth, onward', as in *geleiten* 'ge-lead, escort', *bestehen* 'be-stand, continue to exist', *verführen* 'ver-lead, tempt'. The Figure N^0 can substitute into a null V^0 : The template [[____ -en_V] N [$\rightarrow$ Film]] gives *Er machte Hamlet zu einem Film* 'He made Hamlet into a film'. The Ground is the prior state of *Hamlet* (not a film). The same template permits adjunction of ($\rightarrow$) and substitution of *Film* into the null verb slot: [[ver-_i Film_j -en_V] [t_i t_j]]. Thus, we get *Er verfilmte Hamlet* 'He filmed Hamlet'.

Deadjectival prefixed verbs are of two types. The prefix *er-* alternatively realizes ($\rightarrow$) with positive degree adjectives ('from not-A $\rightarrow$ A), *ver-* alternatively realizes the ($\rightarrow$) that is the feature [COMPARATIVE]. Thus, *erblassen* 'er-pale' (from not-pale to pale) means '(suddenly) become pale', whereas *verblassen* 'ver-pale' (from pale to more-pale) means '(gradually) fade, lose colour'. The feature ($\leftarrow$) on *ent-* is the inverse of ($\rightarrow$) and denotes 'return to prior state', as in *entfalten* 'ent-fold, unfold', *entwaffnen* 'ent-weapon, disarm'.

Connotations such as inchoative, pejorative, concealment that are associated with certain prefixes are accounted for by the underlying change of state template.

Key concepts: Figure/Ground, inseparable prefix, incorporation, abstract feature, alternative realization, Locative Alternation, Dative Alternation, diachronic, morphological cases, prepositions.

PREFACE

It was in a series of PHD seminars entitled *Subcategorization: the Unexplored Alternative*, given by Prof. J. Emonds in the University of Durham during the Michaelmas term of 1995, that the idea for this thesis first began to take shape. In June 1996 I presented the results of some preliminary research in a paper entitled *Two Types of Transitivity: the Morphosyntax of the German be- prefix* in the University of Durham Linguistics Colloquium Series. An article with the same title was subsequently published in the Newcastle and Durham Working Papers in Linguistics 1996. This article is the basis for Chapter 3 of this thesis. Most recently, I presented a paper entitled *The German be- prefix: a case of Incorporation* at the September meeting of the Linguistics Association of Great Britain, held at the University of Luton 10th-12th September, 1998. This paper developed some ideas that I first put forward in a paper presented at the First Durham Postgraduate Conference in Theoretical and Applied Linguistics in June 1998. These two papers constitute early versions of what has become Chapter 4.

I would here like to acknowledge with gratitude the help that I have received from colleagues and friends at various times and in various ways during the course of my studies and research: Seiki Ayano, Beate Göldner, Andrew Caink, Heidi Gritzan, Isabel Muxi, Maggie Tallerman. Although it might appear invidious to single out particular individuals, nevertheless I owe a special word of thanks to Ute Bohnacker, with whom I have shared the trials and tribulations of being a post-graduate student for the last five years, for her comments and ideas on my work. A special word of thanks is due to my supervisor, Prof. J. Emonds, whose assiduous reading of, and illuminating comments on the earlier drafts of this thesis have been an invaluable help in the development of the hypothesis. Finally, I record a debt to two people whose work first excited in me a love of the study of language: Frederick Bodmer, author of *The Loom of Language* that I came across one day in the school library, and Mr. Gerald Dudley, my French teacher in the Wolverhampton Municipal Grammar School, 1949-56.

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INTRODUCTION

The subject of the present study are the so-called inseparable prefixes (and the so-called inseparable verbs that bear these prefixes) in German. I use the term 'inseparable' in the title since this is the term that traditional grammars of German have given to these prefixes, and which readers who know German will instantly recognize. As I will shortly show, the term 'inseparable prefix' is a tautology, since a prefix, by its very nature as a bound morpheme, is necessarily inseparable from its host. The 'inseparable prefixes' have been so called in order to distinguish them from the 'separable prefixes'. I first explain the distinction between the two sets of morphemes.

0.1 The so-called inseparable and separable prefixes in German

Traditional grammars of German (Corbett 1948, Duden 1959, Eggeling 1961, Hammer 1971) distinguish between two types of prefix: separable prefixes (*trennbare Präfixe*) and inseparable prefixes (*untrennbare Präfixe*). [1a] gives the citation (infinitive) form of a separable verb, and [1b] gives the citation form of an inseparable verb.

- [1] a. *aufstehen* 'get up'
 b. *verstehen* 'understand'

The essential difference between the two types of prefix is that inseparable prefixes always remain attached to the verb stem, whereas separable prefixes may become detached from the verb stem. In main clauses the separable prefix is clause-final.

- [2] a. Separable
 Er steht immer früh auf. **Er aufsteht immer früh.*
 he stands always early up
 'He always gets up early.'

b. Inseparable

*Er versteht immer alles. *Er steht immer alles ver.*

he *ver*-stands always all

'He always understands everything.'

In embedded (subordinate) clauses, which in German require the finite verb to be clause-final, separable and inseparable prefixes look superficially to be behaving in the same way, in that in both cases prefix and verb stem are written as one word. There is, however, a difference in word stress, as shown in the next examples, so that a separable prefix always carries word stress, whereas an inseparable prefix never does.

[3] a. *daß er immer früh 'aufsteht*
that he always early upgets
'that he always gets up early'

b. *daß er immer alles ver'steht*
that he always everything *ver*-stands
'that he always understands everything.'

One further difference between separable and inseparable prefixes needs to be mentioned. The past participle of German verbs is, in the unmarked case, formed by prefixation of the morpheme *ge-* and suffixation of *-t* or *-en*. In the case of separable prefixes this *ge-* prefix attaches to the stem of the verb, and thus appears between the prefix and the verb stem as in [4a]. In contrast, the past participle of an inseparable verb is formed without the *ge-* morpheme.

- [4] a. *Er ist auf+ge+standen.*
 he is up+ge+stood
 'He has got up.'
- b. *Er hat {ver+standen/*ge+ver+standen/*ver+ge+standen}*
 he has ver-stood
 'He has understood.'¹

The generalization that we can make from the evidence that I have presented so far is that the so-called separable prefixes are not really prefixes at all, and that only the so-called inseparable prefixes are, in fact, true prefixes. Henceforth in this study I will use the term prefix only for what I have been so far calling the inseparable prefixes; the separable prefixes I shall refer to as particles, in line with (den Dikken 1991, 1995)².

¹ No significance should be attached to the fact that (a) has a BE auxiliary, while (b) has a HAVE auxiliary. The choice of auxiliary verb is quite independent of whether the verb has a separable or inseparable prefix.

² This is not to say that the prefixes, which are bound morphemes in Modern German, were always such. I shall be giving evidence that the prefixes are properly understood as originating as prepositions, i.e. as morphemes at the X⁰ level of heads. Furthermore, what we traditionally understand by the term 'preposition' derived from a more general form of 'adverbial'

That the prefix *ge-* originated as an independent word can be illustrated in Gothic. The Wackernagel interrogative clitic *-u* attaches to the right of the first word in an interrogative clause. In (i) the first word of the clause is *ga-* (equivalent to German *ge-*). Thus, the clitic comes between prefix and verb stem.

(i) *Ga-u-laubeis du sunau guths?*

(Ramsey and Ramsey:1889)

ge-QU-leave.2.SG. you son God.GEN.SG

'Do you believe in the Son of God?'

In the Modern German *glauben* 'believe', cognate with Gothic *galaubjan*, Old English *geluffan* (= be-lieve), the original *ge-* prefix has become fused with the verb stem and has lost its status as a prefix. A similar fate has befallen *be-* in *bleiben* 'remain' (Old High German *bi-liban*), and *ver-* in *fressen* 'eat' (animal agents).

The German prefixes that are the subject of this study are, then, the unstressed bound morphemes that are attached to the front of verbs. I shall discuss particles only when they can illuminate some aspect of the behaviour of the prefixes.

The German prefixes are given in [5]. These morphemes do not occur as independent words.

[5] *be-, ent-, er-, ge-, ver-, (emp-), (miß-), (zer-)*³

For the sake of comparison I give in [6] the commonest German particles, which form the so-called separable verbs.

[6] a. *ab, an, auf, aus, bei, ein, mit, vor, zu*

Er stieg vom Pferd ab.

he climbed from-the horse off

'He dismounted from the horse.'

Er kam in der Stadt an.

he came in the town at

'He arrived in the town.'

Kommen Sie mit!

come you with

'Come along (with us).'

³ I shall have little to say about the prefixes in parentheses. The prefix *emp-* is a phonologically induced allomorph of *ent-*. The prefixes *miß-* and *zer-* are limited in occurrence and have fairly specific meanings: *miß-* conveys the sense of 'wrong' as in *(ge-)brauchen* 'use', *mißbrauchen* 'misuse'; *zer-* conveys the sense 'of destruction', as in *brechen* 'break', *zerbrechen* 'break into pieces, smash to smithereens'.

- b. *fort, teil, weg*

Der Dieb lief sofort weg.

the thief ran immediately away

'The thief immediately ran away.'

Er nahm an vielen Wettkämpfen teil.

he took in many competitions part

'He took part in many competitions.'

These particles are words in their own right. The particles in [6a] are prepositions (*ein-* being the particle variant of the preposition *in*). The particles in [6b] are other categories: adverbial (*fort* 'forth', *weg* 'away', as in *fortgehen*, *weggehen* 'go away'), noun (*Teil* 'part', as in *teilnehmen* 'take part').

Finally, there are some words in German that occur both as prefixes and as particles.

- [7] a. *durch, hinter, über, um, unter, wider*
b. *voll, wieder,*

The words in [7a] are prepositions that also occur as prefixes and particles. The words in [7b] are adjectives (*voll* 'full') or adverbials (*wieder* 'again') that may occur as prefixes or particles. The examples in [8] illustrate how *um* 'round' can occur in the guise of preposition, particle, and prefix.

- [8] a. *um* as preposition

Er lief um den Baum.

'He ran round the tree.'

b. um as particle

Er adressierte den Brief um.

he addressed the letter round

'He re-addressed the letter.'

c. um as prefix

Er umgab das Haus mit einer Mauer.

he round-gave the house with a wall

'He built a wall round the house.'

The subject of this study, then, are the first five prefixes in [5], i.e. *be-*, *ent-*, *er-*, *ge-*, *uer-*. I discuss in Chapter 13 the prefixes in [7a], and show that their behaviour is predicted by the analysis that I propose for [5].

0.2 Why study the prefixes?

The reader may well be wondering why I choose to devote this study to five German prefixes. The answer must be something like this: some of the prefixes have exercised the minds of linguists since the middle of the last century, yet they remain to a great extent an enigma. Previous writers have, to be sure, pointed to a number of observable patterns or (partial) regularities. Thus, writers have observed and discussed the fact that *uer-* may convey a pejorative connotation (Hammer 1971, Lieber and Baayen 1993), or that *be-* seems to appear on transitive rather than intransitive verbs (Corbett 1948, Eggeling 1961), or that denominal and deadjectival verbs are frequently prefixed by *be-* or *uer-*. Some of these observations, along with others, are valuable insights, but as they stand, they are no more than rules of thumb. They also pose a problem.

The problem is this: Are we to assume that the patterns and regularities, such as they are, that we observe in the behaviour of the prefixes are unrelated to each other? Or are they related? If the answer to the first question is 'yes', and the

answer to the second question is 'no', then there may not be much more to say about the prefixes than has already been said. We might take the line that prefixed verbs mean what they do, and behave as they do, as a result of historical accident.

If, on the other hand, at least some of the patterns exhibited by the prefixed verbs are inter-related, and if we could show how they are inter-related, this would be a step forward.

As I show in Chapters 1 and 2, as well as in later chapters, many writers have discussed certain aspects of the prefixes, more or less in isolation. In the 19th Century the quest for the meaning of *ge-* was pursued as though it were the Holy Grail (see Chapter 2). Amongst the more recent literature Neeleman and Schipper (1992) discuss the *ver-* prefix in Dutch and ascribe to it the property of 'bringing with it a THEME argument'. Lieber and Baayen (1993) reject Neeleman and Schipper's proposal and claim that *ver-* is a causative morpheme⁴. Mulder (1992a) proposes that the *be-* prefix in Dutch is a realization of *vol* 'full', and on this basis argues for a Small Clause analysis of the arguments of a *be-verb*⁵. There is an inherent danger in attempting to analyse an aspect of a language in isolation: if we examine an object at too great a magnification, we may fail to recognize its most significant features.

I am not aware of any theoretical study of the prefixes (in any Germanic language) that attempts to account for them as an inter-related phenomenon. The present study is, then, intended to fill the gap.

0.3 The framework

As the title declares, this is a theoretical analysis of the prefixes in a Figure/Ground framework that I develop from the Figure/Ground distinction in (Talmy 1978). I consider the formation of prefixed verbs to be a case of head movement that takes place according to morphosyntactic rules in a pre-syntactic component of the grammar.

⁴ I discuss the debate between Lieber/Baayen and Neeleman/Schipper in Chapter 11, and conclude that neither proposal is tenable.

⁵ See Chapter 6.

Where I discuss aspects of syntax, the framework I espouse is a fairly orthodox principles-and-parameters model.

0.4 Organization

The essence of the hypothesis presented in this study is to be found in Chapters 3 - 5 and 8 - 11.

Readers who know German and who are therefore well acquainted with the problems posed by the prefixed verbs may wish to skip Chapter 1. Chapter 2 outlines previous attempts to establish a meaning for the prefix *ge-*. Chapter 6 argues against a Small Clause analysis for the arguments of *be*-verbs. Chapter 7 argues against a VP-shell (Larson 1988, and others) hypothesis and proposes a flexi-flat structure for VP-internal arguments, a development of (Czepluch 1997). Chapter 12 argues that the Locative Alternation and the Dative Alternation are related, but distinct phenomena. Chapter 13 illustrates the relationship of the prefixes to the prepositional system, in order to account for the 'gaps in the paradigm' (Wunderlich 1987). Chapter 14 argues that the loss of the prefixes in English is due to a parametric change involving morphemes at the level X^{-1} (Roberts 1993), whereby English lost a large part of its syllabic bound morphemes.

CHAPTER 1

UNDERSTANDING THE PREFIXES:

THE VIEW SO FAR

1.1 The Traditional View

A large number of traditional grammarians and lexicographers have attempted to give guidance, usually for the benefit of the non-specialist linguist, on the meaning and function of the German and Dutch prefixes. The traditional accounts are generally based on a comparison between the semantics of the prefixed verbs and their simplex counterparts, together with observations about transitivity and aspect. Many of the observations made about the prefixes are little more than rules of thumb or broad generalizations. I give here some typical examples of the traditional treatments of three prefixes, *be-*, *ver-*, *er-*. After reviewing these proposals in this chapter, I give my own classification of the *be-* prefixed verbs in Chapter 3.

1.1.1 The *be-* prefix

Corbett (1948:178) notes simply that '*be-* often makes a verb transitive'. According to Eggeling (1961:58) the two (commonest) functions of *be-* are: '(i) to give an intransitive verb transitive force, and (ii) to alter the force of a transitive verb in such a way that its direct object becomes an indirect object'. (Eggeling does not mean a dative indirect object, but a demoted object in a PP.) Thus, under (i), *jemandem*_{DAT} *drohen* 'threaten someone' and *jemanden*_{ACC} *bedrohen* 'be-threaten someone', and under (ii) *Häuser bauen* 'build houses' and *ein Grundstück mit Häusern bebauen* 'be-build land with houses'.

Hammer (1971:388) is more explicit, and notes that, with a few exceptions, verbs with *be-* are transitive. Note that this is not the same as stating that *be-* causes a verb to be transitive, a subtle distinction that other writers seem to have missed. According to Hammer there are three principal functions of *be-*:

- (i) It directs an action to a different object: *steigen* 'go up', *besteigen* 'climb' (a mountain),
- (ii) it forms verbs from nouns, generally denoting the idea 'furnish with', e.g. *der Reifen* 'tyre', *ein Auto bereifen* 'be-tyre a car'.
- (iii) it forms mainly factitive (= causative) verbs from adjectives; *befreien* 'be-free, set free'.

Duden (1959:382) claims that *be-* originally indicated direction (*Richtung*) and that from this sense of direction there developed the function of transitivity. In similar fashion to Eggeling, Duden notes that there are three principal functions of the prefix. More specifically, they differ according to the base to which *be-* is prefixed.

- (i) noun base: ornative meaning, e.g. *bekleiden* 'be-clothe, dress',
- (ii) adjective base: factitive meaning, e.g. *beengen* 'be-narrow, constrict'
- (iii) verb base: mainly perfective meaning, e.g. *beschmieren* 'be-smear, smear'

1.1.2 The *ver-* prefix

Grimm (1995:XII,54) states that *ver-* is a composite of Indo-European *far*, *fur*, *fra* and that these morphemes have the basic sense of 'forth, away, down' (*fort*, *hinweg*, *ab*). Feist (1939) maintains that the Indo-European base form for all the Gothic forms was *pr̥* and that it meant 'out' (*hervor*).

According to Grimm the *ver-* prefix in modern German has assumed a number of secondary meanings, but two distinct senses can be determined:

- (i) 'movement away, removal of something from the path originally taken' (*etn hinweggehen*, *hinwegschaffen vom bisherigen wege*) (Grimm 1995:XII,54).
- (ii) 'continued movement along a path towards an intended goal' (*ein fortgehen*, *fortschaffen auf dem eingeschlagenen wege bis zum vorgesteckten ziele*) (ibid.)

Kluge (1989) relates the German *ver-* prefix to Gothic *faur-* and *fra-*. He maintains that there is no exact German equivalent to Gothic *fair*. The German *ver-* has, then, two basic meanings:

(i) related to Gothic *faur*: has the sense 'beyond, to another place' (*über etwas hinaus, an eine andere Stelle*),

(ii) related to Gothic *fra*: has the sense 'change, consume, disappear' (*verarbeiten, verbrauchen, verschwinden*) and expresses the idea of 'opposite'.

Eggeling (1961:353) follows Grimm in taking the *ver-* prefix to represent the three Gothic prefix forms, viz. *fair*, *faur*, *fra*. He assigns a different function to each of the three Gothic prefixes and gives equivalents in modern German.

(i) *fair-* has an intensifying force: *vergrößern* 'ver-greater, enlarge', *verkürzen* 'ver-shorten, shorten' often suggesting 'continuation to the end', with resultant 'change of state' *verblühen* 'ver-bloom, fade',

(ii) *faur-* implies 'cover, concealment', hence 'prevention': *verhindern* 'ver-hinder', *verhüllen* 'ver-cover, cover up', as well as 'disappearance, invisibility', *versinken* 'ver-sink, sink',

(iii) *fra-* (most productive) has as its fundamental force 'away from': *verreisen* 'ver-journey, go away on a journey', *vertreiben* 'ver-drive, drive away'.

Eggeling further maintains that from these three basic meanings have arisen various other shades of meaning, e.g. 'error, loss, deterioration, consumption, spending, waste, loss of individuality, fusion. For 'loss of individuality, fusion' Eggeling gives the examples: *verhetraten* 'ver-marry, marry, give in marriage', *verloben* 'get engaged, marry'.

Hammer (1971:389) identifies two principal meanings of *ver-*:

(i) *ver-* forms verbs with the implicit or explicit sense of 'away': *verbrauchen* 'use up, consume',

(ii) it imparts a broadly negative or unfavourable sense: (destruction) *vernichten* 'ver-nothing, destroy', (spoiling) *der Ausflug war verregnet* 'the trip was spoilt by rain', (error) *verkennen* 'ver-know, not recognise'. Hammer points out that *ver-* can convey the idea 'opposite': *achten* 'honour' - *verachten* 'despise'.

Duden (1959:384) notes that *ver-* has the principal meaning 'past, away, out' (*vorbei, weg, heraus*). This motional sense leads to 'simple perfectivisation', particu-

larly the ideas of 'using up, spoiling, closing up, spending time' (*Verarbeiten, Verderben, Verschließen, Verbringen der Zeit*).

Duden (1995:3623) is still semantics-based but attempts a more analytic classification. I give two of their definitions of *ver-* when prefixed to denominal or deadjectival verbs:

- (i) *ver-* expresses the idea that a person or thing (in the course of time) is changed into what the noun or adjective denotes,
- (ii) it expresses the idea that something is made or turned (*umgesetzt*) into something, converted into a particular state.

1.1.3 The *er-* prefix

Eggeling (1961:133) notes that the original force of *er-* was 'from within', still dimly seen in modern German *erpressen* 'extort', *erschließen* 'disclose', *erschöpfen* 'exhaust'. This original sense led to notions like 'transition' or 'resultant state': *erblühen* 'bloom', *erkalten* 'grow cold', *erröten* 'blush'. This in turn led to 'obtain' or 'attain to': *erbitten* 'obtain by request', *erfragen* 'find out by inquiry'. Eggeling quotes *erheiraten* 'er-marry': *Er erheiratete eine bedeutende Mitgift* 'he married (acquired by marriage) a significant dowry'. Eggeling also notes that *er-* and *ver-* can be antonyms: *erblühen* 'bloom' / *verblühen* 'fade'.

Corbett (1948:178) notes that *er-* may have inchoative force: *er erblickte das Licht der Welt* 'he first beheld the light of this world' (Corbett's emphasis). Hammer (1971:389) notes four distinct functions of *er-*:

- (i) it denotes achievement and, as a distinctive and productive application of this, it denotes 'to acquire something by means of the action expressed by the simple verb',
- (ii) it denotes the beginning of an action,
- (iii) it forms verbs from adjectives (a) denoting getting into the state described by the adjective: *erröten* 'er-redden, blush', (b) factitive verbs: *erfrischen*, 'refresh',

(iv) it is prefixed to a number of verbs when they are used in a figurative or derived sense: *Er öffnete das Fenster* 'He opened the window', as opposed to *Er eröffnete die neue Bibliothek* 'He opened the new library'.

For Duden(1959:382) *er-* means 'out, up, finish, the start of an event, or the achievement of an aim' (*heraus, empor, zu Ende, das Einsetzen eines Geschehens oder die Erreichung eines Zweckes*).

1.1.4 Summary

In summary, what has emerged so far about the prefixes is that amongst the rules of thumb and tendencies noted by the various writers there seems to be agreement in general along the following lines:

- (i) The prefixes have meaning. The general feeling is that *ver-* has the meaning 'forth, away, down' (Grimm 1995), 'out' (Feist 1939), 'to another place' (Kluge 1989), 'away from' (Eggeling 1961), 'past, away, out' (Duden 1959). The *er-* prefix has the meaning 'from within' (Eggeling 1961), 'out, up, finish' (Duden 1959). I will later maintain that the basic meaning of all the prefixes under consideration is expressed by a single syntactic feature [+LOCATION].
- (ii) A *be-*prefixed verb generally requires a direct object.
- (iii) Nouns and adjectives can appear in the base of a prefixed verb. These are the ornative and factitive verbs of a number of writers.
- (iv) There may be semantic features such [+CAUSATIVE], [+INCHOATIVE] that are associated with the prefixes.
- (v) The prefix *ver-* sometimes gives a pejorative reading to the verb.

While this doesn't get us very far, we can build on some of these descriptive results to elaborate a more predictive hypothesis in later chapters of this study.

1.2 The prefixes in Generative Linguistics

1.2.1 Attempts at classification

In this section I outline the attempts that a number of generativists have made to bring some order to the prefixes by classifying them in groups. The problem with any attempt at classification is to establish a promising criterion, whereby a verb may be allotted to one group or another.

We might, for instance, be tempted to say that one group comprises *be*-verbs formed by prefixation on an intransitive simplex verb, and that another group comprises *be*-verbs formed from transitive simplex verbs, and that a third group comprises deadjectival *be*-verbs. Now, there are *be*-verbs that fit these three groups, but the classification tells us nothing. It poses questions rather than providing answers: How come the simplex verbs that are the base of the prefixed verb may be intransitive and transitive? What, if anything, is the connection between transitivity and the fact that there are denominal and deadjectival *be*-verbs?

A successful classification is one that has internal homogeneity, i.e. the 'right' criterion has been established. I think that it will be apparent that the generativists that I discuss in the next section have missed the right criterion.

1.2.1.1 De Haas and Trommelen (1993)

De Haas and Trommelen (1993), writing on the Dutch prefixes, take it that the effect of the *be*- prefix is to make unergative verbs into ergative verbs, and ergative verbs into transitive verbs (1993:65). They classify the *be*-verbs in six Groups. For each group I give a Dutch example from De Haas and Trommelen, and, for the sake of comparison, a German verb with the same meaning.

Group I: The function of the *be*- prefix is to direct the action expressed by the base verb to a specific object (*het richten van de handeling uitgedrukt door het correlerende werkwoord op een bepaalde zaak*).

<i>kijken</i> (- tr)	'peep'	German: <i>gucken</i>
<i>bekijken</i> (+ tr)	'be-peep, look at'	German: <i>begucken</i>

Group II comprises denominal *be*-verbs

<i>bebossen</i>	'be-forest, afforest'	German: <i>bewalden</i>
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Group III comprises deadjectival *be*-verbs.

<i>benatten</i>	'be-moist, moisten'	German: <i>benässen</i>
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Group IV comprises verbs of the type *be*-____ *igen*.

<i>beëdigen</i>	'be-oath', swear in'	German: <i>vereidigen</i>
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Group V comprises denominal *be*-verbs that have simplex counterparts.

<i>planten</i>	'plant'	German: <i>pflanzen</i>
<i>beplanten</i>	'be-plant, plant'	German: <i>bepflanzen</i>

Group VI comprises *be*-verbs that have no simplex counterpart

<i>bedriegen</i>	'deceive'	German: <i>betrügen</i>
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1.2.1.2 Abraham (1995)

Abraham (1995) classifies the German *be*-verbs into four groups on the basis of transitivity.

Group I: This group comprises intransitive *be*-verbs that derive from intransitive simplex verbs. Although at earlier periods this group was prolific, there are now only two extant verbs.

beharren 'insist, persist, persevere'

beruhen 'be based on'¹

¹ Despite Abraham's claim that there are only two verbs in this group, I would wish to include *bestehen* 'exist, continue to exist'. See 3.3.3.2.

Group II: This group comprises two subgroups:²

(i) A transitive *be*-verb derives from a transitive simplex verb, usually without change of meaning.

(ii) Deadjectival *be*-verbs.

Group III: A transitive *be*-verb derives from an intransitive simplex verb.

Group IV: A transitive *be*-verb derives from a transitive simplex verb, with a change of direct object.

Additionally Groups III and IV contain denominal *be*-verbs and de-adjectival *be*-verbs of the type *be-A-igen*.

1.2.2 Summary

The two attempts at a classification of the *be*-verbs that I have outlined above illustrate the inherent difficulties that beset anyone who attempts such a task. The main problem is how to establish the criteria by which a particular verb is allotted to a particular group. Thus De Haas and Trommelen (1993) assign the Dutch verb *bekijken* 'be-peep, look at' to their Group I on the grounds that the function of the prefix is to direct the action of the base verb to a specific object (De Haas and Trommelen 1993:65). It is not at all clear to me what they mean by this. Does it mean perhaps that *be-* enables an intransitive base verb to take a direct object? It seems that one might just as well assign *bekijken* to Group V (*be*-verbs that have a simplex counterpart) on the grounds that *bekijken* has a simplex counterpart in *kijken* 'look'.

To take another example, De Haas and Trommelen assign *beplanten* 'be-plant' and *planten* 'plant' to Group V without consideration of the possibility that these

² Abraham gives very few examples of the verbs that he allots to Groups II to IV. He observes merely that there are 47 examples of verbs in Group II (ii).

verbs derive from the noun *plant* 'plant' and should, therefore, be in the same group as the denominal verbs.

Abraham (1995) takes transitivity to be the criterion for classification and establishes four groups. Almost as a footnote he assigns denominal *be*-verbs and deadjectival verbs of the type *be-A-igen* to Groups III and IV. The problem is that, if transitivity of the simplex verb is the criterion for classification of the *be*-verbs, it is not possible to accommodate *be*-verbs that have no simplex counterpart, i.e. denominal and deadjectival verbs. It is more likely that the transitivity of simplex verbs, their *be*-counterparts, and *be*-verbs that have no simplex counterpart is a byproduct of the relationship between these verbs rather than the essence of the *be*-prefix.

1.3 Theory-based models

1.3.1 Günther (1974)

Günther (1974) considers that a *be*-verb is a unit and makes no attempt to isolate a meaning for the prefix. For him the prefix functions '*als Kennzeichner für gruppenspezifische Vergesellschaftung*' (1974:39) ('as a marker of group coherence'³). He attempts a classification of *be*-verbs, which I will not comment on here since it has been modified and improved upon by Eroms (1980) (See 2.3.2.1).

Günther's work is primarily a study of the parallels and, in some cases the competition (*Konkurrenz*), between *be*-verbs and particle verbs in German. His approach is purely semantic. I will give just a couple of examples.

In the section on particle verbs with the particle *ab* 'off, down' he notes that *hobeln* 'plane' can take the *be*-prefix or the particle *ab* 'off, down'.

³ It is not clear to me what Günther means by this term. The meaning of the word according to Collins German Dictionary (1991) is 'nationalization, taking into public ownership, handing over to the workers, socialization'. Duden (1989:1643) gives for the verb *vergesellschaften* 'zusammen mit etwas vorkommen' ('co-occur with something'). I translate *Vergesellschaftung* as 'coherence'.

- [1] a. *Der Tischler hobelt das Brett ab.*
 the carpenter planes the plank down
 'The carpenter planes (down) the plank.'
- b. *Der Tischler behobelt das Brett.*
 the carpenter *be*-planes the plank
 'The carpenter planes the plank.'

The semantic difference between the two sentences is explained by Günther as follows. The simple verb plus particle *ab* in [1a] has the meaning 'smoothe the surface by removing unwanted parts' (*Oberfläche glätten durch Entfernen störender Teile*) while the *be*-verb is 'semantically less intensive' (*semantisch blasser*) and means simply 'work on the surface' (*Oberfläche bearbeiten*) (Günther 1974:231).

He observes that *ab* is a grammatical alternative to *be*- with verbs such as *paddeln* 'paddle', *wandern* 'hike', but is ungrammatical with *reisen* 'travel'.

- [2] a. *Im Sommer will er die Rhone be-paddeln.*
 in the summer wants he the Rhone *be*-paddle
 'In the summer he's going to paddle down the Rhone.'
- b. *Im Sommer will er die Rhone ab+paddeln.*
 in the summer wants he the Rhone down+paddle
 'In the summer he's going to paddle down the Rhone.'
- c. *Er will ganz Italien be-reisen.*
 he wants whole Italy *be*-travel
 'He's going to travel all over Italy.'
- d. **Er will ganz Italien ab+reisen.*
 he wants whole Italy down+travel
 'He wants to travel all over Italy.'

Although Günther's work is based on the semantic differences or parallels between prefixed and particle verbs, it remains a useful compendium of data.

In the case of some verb pairs Günther is able to point to a significant distinction.

- [3] a. *Er lächelt das Kind an.*
 he smiles the child at
 'He smiles at the child.'
- b. *Er belächelt das Kind.*
 he besmiles the child
 'He smiles about the child.'

The difference between [3a] and [3b] is explained by Günther in the following terms.

- An+verb* *A lächelt in Richtung, direkt zu B --- A lächelt B an.*
 'A smiles in B's direction, straight at B --- A smiles B at.'
- Be-verb:* *A lächelt über B --- A belächelt B.*
 'A smiles about B --- A be-smiles B.'

He admits, however, that such an analysis does not hold for the verbs in [4], where there is complete synonymy between the *be-verb* and the particle verb.

- [4] a. *Er {lügt/schwindelt} die Mutter an.*
 he {lies/fibs} the mother at
 'He tells his mother {lies/fibs}.'
- b. *Er {belügt/beschwindelt} die Mutter.*
 he {be-lies/be-fibs} the mother
 'He tells his mother {lies/fibs}.'

1.3.2 Eroms' (1980) transformational model

Eroms' (1980) study of *be*-verbs has three principal elements. Firstly, he takes Günther's (1974) work as a basis and with some modifications to Günther's groupings classifies the *be*-verbs into six Groups. Secondly, Eroms formulates a hypothesis to account for what a number of writers have described as the holistic effect that *be*-verbs seem to have⁴. He also publishes the results of a grammaticality test that seeks to determine whether there really is a holistic effect in *be*-verbs. Thirdly, and perhaps most importantly, he proposes a transformational account of *be*-verbs and their simplex counterparts, in which a single deep structure gives rise to clauses containing both types of verb.

I will in this section briefly outline Eroms' classification, and discuss his transformational model in 1.4.2.

In contrast to the other attempts at classification, Eroms bases his classification on syntactic considerations. His Group Ia illustrates the familiar Locative Alternation, Group II comprises the ornative *be*-verbs that Eroms views as noun-incorporating. The remaining Groups, however, are less convincing, particularly since Eroms resorts to 'miscellaneous' (*verschiedene, heterogene Untergruppen*) for Group V, and 'lexicalised verbs' for Group VI. Furthermore, Eroms feels obliged to add *ad hoc* semantic features such as VOLITIVE, INVOLITIVE, EMOTIONAL.

⁴ The terms *holistic* and *partitive* are coined by Anderson (1971:389) to describe the property that the whole of something is affected by the action described by the sentence (holistic), or just a part is affected (partitive). Thus, in (i) *the wall* receives a partitive interpretation, whereas in (ii) *the wall* receives a holistic interpretation. The symbol ϵ denotes that the sentence is contradictory.

(i) *John smeared paint on the wall, but most of the wall didn't get any paint on it.*

(ii) ϵ *John smeared the wall with paint, but most of the wall didn't get any paint on it.*

I am not convinced that (ii) necessarily requires a holistic interpretation. We can imagine John, on his way to answer the phone in another room, inadvertently smearing the wall of the room he goes into with his paintbrush. Compare (ii) above with (iii), in which a holistic interpretation is ruled out by common sense.

(iii) *John dirtied the floor with his boots, but fortunately it was only by the door.*

It would seem that a holistic *versus* a partitive interpretation of a given sentence is more likely to depend on the semantics of the verb and its arguments rather than the syntax pure and simple. For this reason I will not participate in the holistic/partitive debate.

The *be*-verbs that belong in the various Groups are simply listed as such without discussion. If a *be*-verb does not have a simplex counterpart, Erms notes this as 'conversion not possible'.

1.3.2.1 Erms' classification (based on Günther (1974))

The six groups in Erms' classification are given below.

Group Ia: Locative Alternation

X V_{VOL} Z P_{LOC} Y

X *be*-V_{VOL} Y *with* Z

Der Gärtner pflanzt Rosen auf das Beet.

'The gardener plants roses on the bed.'

Der Gärtner bepflanzt das Beet mit Rosen.

the gardener *be*-plants the bed with roses

'The gardener plants the bed with roses.'

Group Ib: X V_{VOL} P_{LOC} Y

X *be*-V_{VOL} Y

Indianer siedeln in der Prärie.

'Indians settle in the prairie.'

Indianer besiedeln die Prärie.

Indians *be*-settle the prairie

'Indians settle (in) the prairie.'

Conversion not possible:

beatmen 'breathe'

bedienen 'serve'

befestigen 'fasten'

Group II ornative *be*-verbs, (volitive or involitive):

X *provide / furnish* Y *with* Z

X *be*-Z_V Y

Die Werft versteht das Schiff mit einem Kiel.

'The shipyard furnishes the ship with a keel.'

Die Werft bekielt das Schiff.

the shipyard *be*-keels the ship

'The shipyard puts a keel on the ship.'

Group III:

X V P Y

X *be*-V_{INVOL/DIR} Y_{LOCAL}

Das Mädchen liebäugelt mit dem Ring.

the girl eyes with the ring

'The girl is thinking of buying the ring.'

Das Mädchen beliebäugelt den Ring.

the girl *be*-eyes the ring

'The girl is thinking of buying the ring.'

Conversion not possible:

beaugapfeln 'eye'

beobachten 'observe'

beschatten 'cast in shadow'

Group IV:

X V_{EMOTIONAL} (P(-LOC) Y)

X *be*-V_{EMOTIONAL} Y

Otto mäkelt über das Essen.

'Otto carps about the food.'

Otto bemäkelt das Essen.

Otto *be*-faults the food

'Otto finds fault with the food.'

Conversion not possible:

<i>beanstanden</i>	'query'
<i>bedauern</i>	'regret'
<i>befürworten</i>	'approve'

Group V Miscellaneous *be*-verbs:

<i>kämpfen, bekämpfen</i>	'fight', 'fight against'
<i>lohnern, belohnen</i>	'reward', 'reward'

Conversion not possible

<i>denken, bedenken</i>	'think', 'consider'
<i>drücken, bedrücken</i>	'press', 'impress'

Group VI Lexicalised verbs:

<i>achten auf, beachten</i>	'take note of', 'respect'
<i>herrschen über, beherrschen</i>	'rule over', 'have command of'

1.3.3 Summary

It will by now, I think, be clear that the attempts by the various writers to classify the prefixed verbs in an illuminating way fall short of being satisfactory. They also provide no explanatory account of the behaviour of the prefixed verbs.

One of the problems seems to lie in the choice of criterion for the groups that a particular verb might be a member of. Günther's (1974) exhaustive study of the *be*-verbs is based on semantic criteria. The result is a dictionary of verb usage rather than an explanatory account of the *be*- prefix.

Eroms' (1980) classification (based on Günther 1974) is part syntactic- and part semantic-based. The criterion he adopts for assigning verbs to his Group I, for instance, is purely syntactic; Group I comprises verbs in the Locative Alternation. On the other hand, the only difference that I can see between his Groups III and IV is that the latter contains verbs with the semantic feature EMOTIONAL (if, indeed, such a 'feature' exists). Syntactically Group III verbs behave in the same way as Group IV

verbs, as can be seen in [5], where both sentences are of the form subject/verb/object.

- [5] a. *Das Mädchen beliebäugelt den Ring.* Group III
 the girl *be-eyes* the ring
 'The girl is thinking of buying the ring.'
- b. *Otto bemäkelt das Essen.* Group IV
 Otto *be-faults* the food
 'Otto finds fault with the food.'

One might also question Eroms' use of the feature EMOTIONAL for *bemäkelt* 'be-faults' as being the distinguishing feature between the two sentences. I would think that *beliebäugelt* 'be-eyes' has just as much claim to being EMOTIONAL as *bemäkelt*.

1.4 Theoretical treatments in Generative Linguistics

1.4.1 Becker's Case Grammar model

Becker (1971) sees the essential difference between the sentences in the Locative Alternation as a difference between two deep structure (DS) cases. He bases his analysis on Fillmore's (1968) Case Grammar. Fillmore developed his hypothesis as an alternative to Chomsky's (1965) view that subject and object relations are defined at DS. In the Case Grammar framework notions like subject and object are absent at DS. Each NP capable of functioning as a surface structure subject or object is dominated by a labeled node designating a particular case relationship. The cases are as follows (from Becker (1970:127)).

Agentive (A): the case of the typically animate perceived instigator of the action identified by the verb.

Instrumental (I): the case of the inanimate force or object causally involved in the action or state identified by the verb.

Dative (D): the case of the animate being affected by the state or action identified by the verb.

Factitive (F): the case of the object or being resulting from the action or state identified by the verb, or understood as a part of the meaning of the verb.

Locative (L): the case which identifies the location or spatial orientation of the state or action identified by the verb.

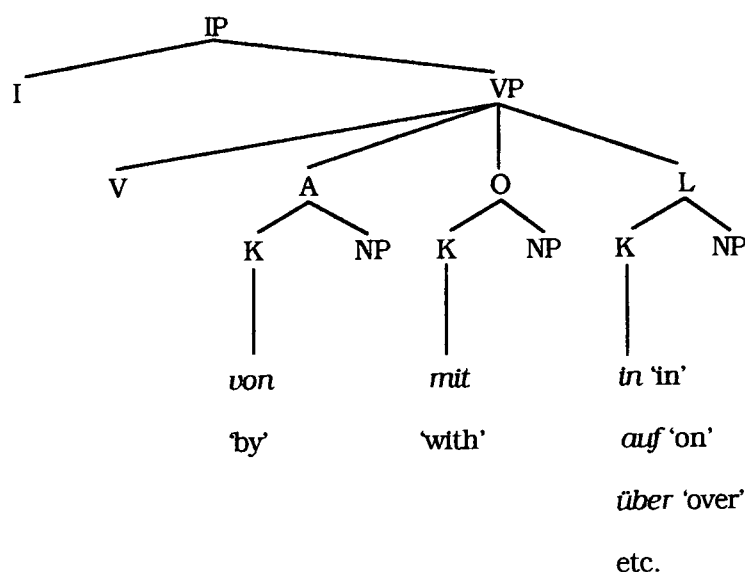
Objective (O): the semantically most neutral case, the case of anything representable by a noun whose role in the action or state identified by the verb is identified by the semantic interpretation of the verb itself.

For Becker *be-* is the morphological manifestation of a DS difference between F and O (but also L). The alternating sentences in [6] have the DS given in [7].

- [6] a. *Die Hausfrau zog neue Laken über das Bett.*
 the housewife pulled new sheets over the bed
 'The housewife put new sheets on the bed.'
- b. *Die Hausfrau bezog das Bett mit neuen Laken.*
 the housewife *be*-pulled the bed with new sheets
 'The housewife put new sheets on the bed.'

Becker (1971:135)

[7]



Becker (1971:135)

The nodes marked K denote a case element (Kasus), which normally in English and German is a preposition. Thus, in the DS representation in [7] the VP contains three case nodes, an Agentive case, an Objective case, and a Locative case. In order to generate well-formed sentences there must be transformations and preposition deletions.

To derive both sentences in [6], transformational rules convert the NP of A into the surface-structure subject by moving it out of the VP, and deleting its characteristic preposition. Secondly, to derive [6a] the NP of O is selected as direct object of the verb, and its preposition is deleted. The verb remains unaffected. To derive [6b] the NP of L is selected as direct object, and its preposition is deleted. In this case the verb is prefixed by *be-*.

Becker notes the semantic difference between the sentences in [8], where in [8a] the direct object is an affected object, whereas in [8b] the direct object is an effected object⁵. The claim in Case Grammar is that this difference is due to the two direct objects being generated under different nodes at DS. Thus, according to

⁵ The difference between *affected* and *effected* objects can be illustrated by the following examples.

- (i) *He ate a cake.* (The cake is *affected* by being eaten.)
He baked a cake. (The cake is *effected*, brought into being.)

Fillmore's hypothesis the direct object in [8a] would be O, in [8b] the direct object would be F.

- [8] a. *Er begoß die Rosen.*
 he *be*-poured the roses
 'He watered the roses.'
- b. *Er goß die Glocke.*
 he poured the bell
 'He cast the bell.'

Becker (1971:132)

However, Becker points out that *Er begoß die Rosen* in [8a] has a counterpart in [9a] where *Rosen* is not the direct object but the complement of a location preposition.

- [9] a. *Er goß Wasser auf die Rosen (mittels einer Gießkanne).*
 'He poured water on the roses (with a watering-can).'
- b. *Er begoß die Rosen mit Wasser (mittels einer Gießkanne).*
 he *be*-poured the roses with water (with a watering-can).
 'He watered the roses (with a watering-can).'

(ibid: 137)

Here the roses in [9a] are L (note that they are in a location PP). This implies that in [9b] the roses should also be L. Becker claims that the roses in [8a] and [9b] cannot be O, since O must be reserved for the water. The water cannot be I, since I is the watering-can. Compare [8a] with [9b]. How can the roses be O in one sentence and L in the other? Becker concludes that they are L in both. This looks bad for Fillmore's case theory, although it will turn out, I think, that Becker's conclusion is right.

A different problem is provided by the next pair of examples.

- [10] a. *Der Juwelier sah den Stein am Straßenrand.*
 the jeweller saw the stone at-the street-edge
 'The jeweller saw the stone in the gutter.'
- b. *Der Juwelier besah den Stein unter einer Lupe.*
 the jeweller *be-* saw the stone under a magnifying glass
 'The jeweller examined the stone under a magnifying glass.'

(ibid:140)

The semantic difference between *sehen* 'see' and *besehen* 'look at', as well as *fühlen* 'feel, be aware of' and *befühlen* 'feel, touch' is explained by Becker as being due to a Deep Structure case difference. For Becker claims that the subject of [10a] is a DS Dative, whereas the subject of [10b] is a DS Agentive.

What Becker has missed is that the direct object of the *be*-verb in [10b], in his own analysis, is a deep structure L, just as are the direct objects of the other *be*-verbs that Becker discusses. That the direct object of *beseh* in [10b] is a deep structure L can be seen by comparing [10b] with [11]. There is no semantic difference between these two sentences. In [11], instead of the *be*-verb *besehen* 'be-see, examine', we find the particle verb *an+sehen* 'look at'.

- [11] *Der Juwelier sah den Stein mit einer Lupe an.*
 the jeweller saw the stone with a magnifying glass PRT
 'The jeweller examined the stone with a magnifying glass.'

There is a similar difference between the simple verb *riechen* 'smell', on the one hand, and the prefixed verb *beriechen* 'smell, sniff at', and the simple verb plus preposition *riechen an* 'smell, sniff at'.

- [12] a. *Er roch das Curry-Gericht.*
 'He smelled the curry dish.' (= 'became of aware of')

- b. *Er beroch das Curry-Gericht.*
 he *be*-smelled the curry dish
 'He smelled the curry dish.' (= 'sniffed it')
- c. *Er roch an dem Curry-Gericht.*
 he smelled at the curry dish
 'He smelled the curry dish.' (= 'sniffed it')

Sentences [12b] and [12c] are synonymous. They also both contain a morpheme (the *be*- prefix and the preposition *an*) that is absent in [12a]. The synonymity between the sentences strongly suggests that the prefix and the preposition perform the same function. Since the preposition *an* is clearly locational and identifies *Curry-Gericht* as having L case, we would expect the same to apply to the direct object of the *be*-verb.

A final problem with Becker's Case Grammar analysis has to do with the *be*-prefix itself. Why does it appear when it does? Becker has no answer to this question. He claims that *be*- has no meaning and merely reflects a distinction already present in Deep Structure.

Since the case relations D and A embody precisely the same semantic difference that we have observed between the verbs *riechen*, *fühlen*, *sehen* and their prefixed counterparts, the *be*-prefix in case grammar would bear no meaning but merely reflect a distinction already present in deep structure. It could therefore be inserted by means of a transformational rule into those sentences in which these three verbs of perception occur with the case category A instead of the case category D.

Becker (1971:141)

Becker's failure to recognize the meaning of *be*- and account for its appearance is due, I think, to his zeal in pursuing Fillmore's Case Grammar model. Clearly, if the semantics of sentences containing *riechen* and *bertechen* can be explained by observing that the subjects of these two verbs are Dative and Agentive, respectively, then it

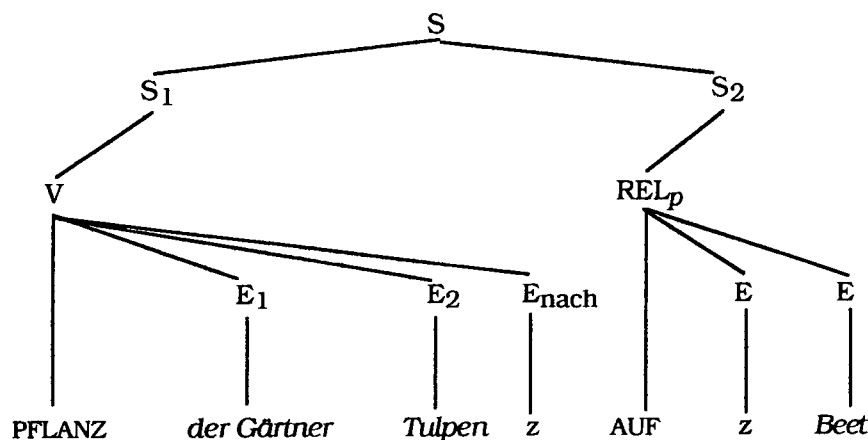
is not necessary to explain why *be-* is present in one but not the other. To all intents and purposes *be-* is superfluous in Becker's model.

1.4.2 Eroms' transformational model

Eroms (1980) develops his own theoretical analysis of the *be-*verbs. He takes the *be-* prefix to be a grammatical morpheme that can be accounted for syntactically. His idea is that at DS the alternating sentences in [13] have the same biclausal structure. The surface structures are derived by deletions and transformations from the common deep structure. In this theory the sentences in [13] have the DS given in [14].

- [13] a. *Der Gärtner bepflanzt das Beet mit Tulpen.*
 the gardener *be-*plants the bed with tulips
 'The gardener plants the bed with tulips.'
- b. *Der Gärtner pflanzt Tulpen auf das Beet.*
 The gardener plants tulips on (= in) the bed.'

[14]



Eroms (1980:55)

The nodal labels are given below:

- V: a verbal valency bearer (*verbaler Valenzträger*)
- REL_p: a prepositional relator that shows similar properties to V
- E: valency-determined complements (*valenzgeforderte Ergänzungen*)

E^1 subject.

E^2 accusative object

E_{nach} directional complement (*nach* = 'towards')

z : a locational proform

S^2 : this is read as: *z is on the bed*.

In order to derive [13] from [14] the transformation proceeds as follows:

(i) the z under S^1 is deleted.

(ii) the rightmost E in S^1 becomes the accusative object. In this case, after deletion of z , the rightmost E is E^2 . This transformation gives rise to the sentence:

[15] *Der Gärtner pflanzt Tulpen auf das Beet.*

'The gardener plants tulips on (= in) the bed.'

In order to derive the structure with the *be*-verb, the following transformations occur:

(i) the z and REL_p under S^2 are deleted.

(ii) E^2 appears in a 'with' (*mit*) phrase.

(iii) *be-* is prefixed to V .

After these transformations the result is:

[16] *Der Gärtner bepflanzt das Beet mit Tulpen.*

the gardener *be*-plants the bed with tulips

'The gardener plants the bed with tulips.'

There are three major problems with this account, none of which are addressed by Eroms. The first has to do with the biclausal DS. Eroms assumes, without argumentation, that there are two S nodes. Under the second S node (S^2) there is a prepositional relator that has similar properties to a verb. I think we are to understand that

both verb and relator share the property of having valency requirements. It is true that writers since Eroms have also postulated multi-clausal deep structures (Larson 1988), (Hale and Keyser 1993), but they have done so on rather more motivated grounds than does Eroms. I return to the question of a biclausal analysis in Chapter 7.

The second major problem with Eroms' account is that he has to stipulate that *be-* is prefixed to the verb in one transformational process, but that the verb is unaffected in the complementary process. Such stipulation is no advance on Becker's hypothesis, which likewise stipulates insertion of *be-*.

Thirdly, Eroms' proposal does not account for the surface word order in the *be*-construction. According to the procedure given above, the *be*- sentence comes out as in [17]. This is, however, a highly marked word order, if not unacceptable.

- [17] *?*Der Gärtner bepflanzte mit Rosen das Beet.*
 the gardener *be*-plants with roses the bed⁶

A further example will suffice to show how unmotivated and stipulatory Eroms' DS representations are. [18a] contains a simplex verb and a location PP. It has a counterpart in [18b], where a *be*-verb takes as its direct object the complement of the P in [18a]. Note that the only syntactic difference between the two sentences is that [18a] contains a preposition but no prefix, whereas [18b] contains a prefix but no preposition.

- [18] a. *Opa wohnt in der ersten Etage*
 'Grandad lives in (= on) the first floor.'

⁶ The PP NP word order of [17] is acceptable with focal stress on the NP, and in a list reading with contrastive stress.

- (i) *Er bepflanzte mit Rosen **das Beet**, und mit Tulpen **den Hang**.*
 he be-planted with roses the bed, and with tulips the slope
 'He planted roses in the bed and tulips on the slope.'

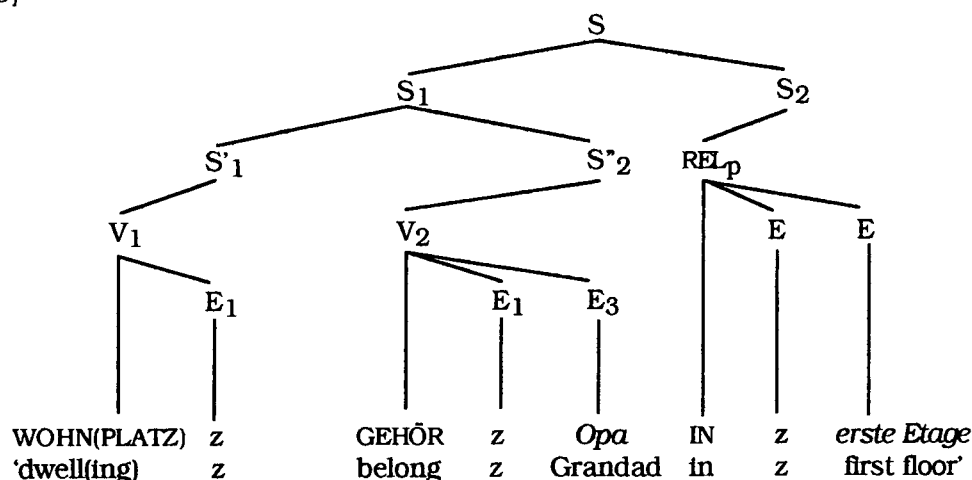
- b. *Opa bewohnt die erste Etage.*

Grandad *be-lives* the first floor

'Grandad occupies the first floor.'

Eroms' DS representation for the sentences in [18] is given in [19].

[19]

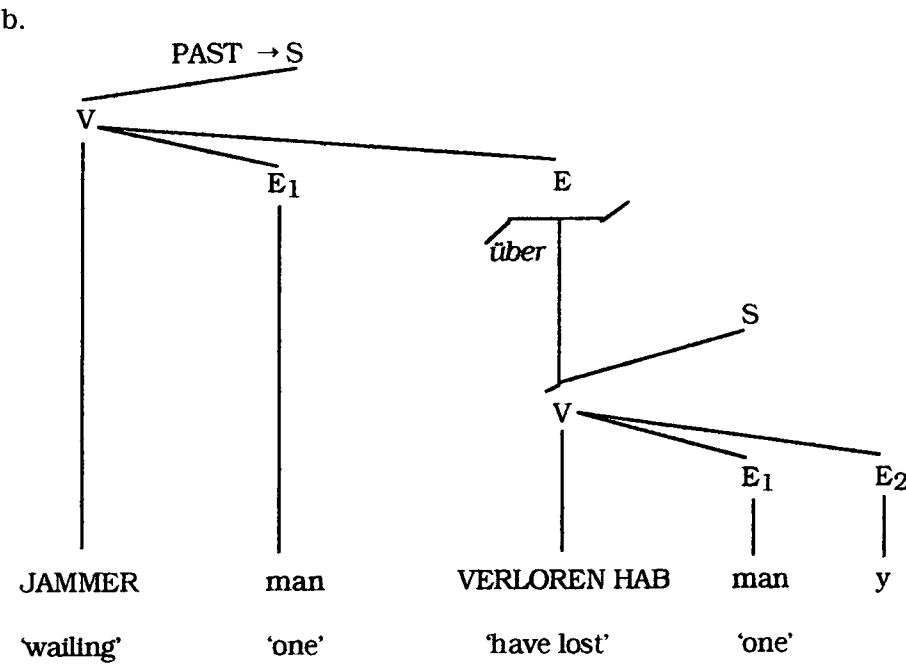


Eroms (1980:57)

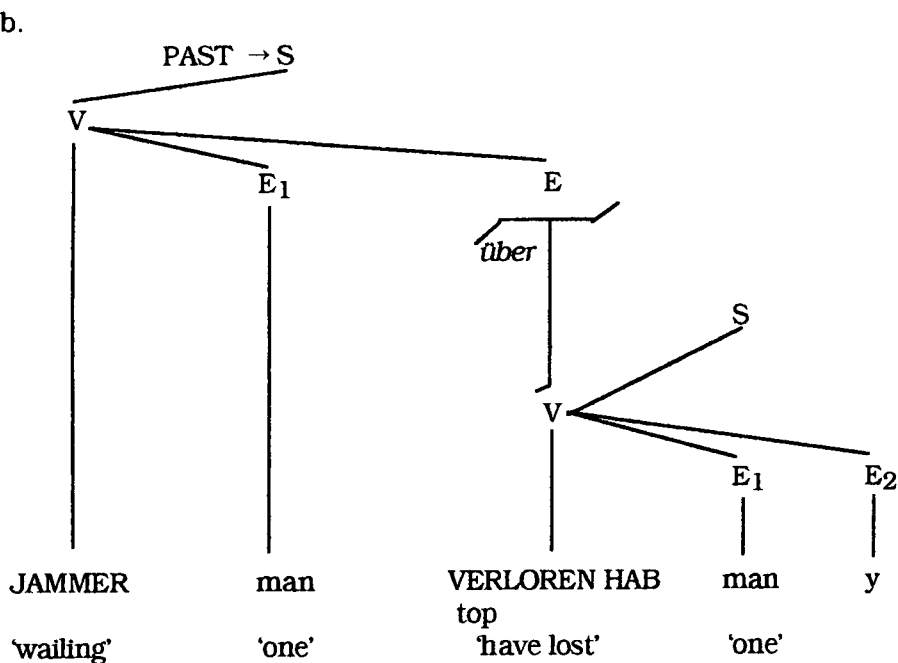
What the representation in [19] seems to be claiming is that the sentence *Opa wohnt in der ersten Etage* is to be decomposed into something like *There is a dwelling that belongs to Grandad that is on the first floor*. Note that there are three verb-like nodes (V_1 , V_2 , REL_p) that project to S nodes (S'_1 , S''_2 , S_2), and that two of these S nodes (S'_1 , S''_2) project further to S_1 . Eroms does not explain how there comes to be a noun, *WOHN(PLATZ)*, under the node V_1 (I take it that we are to presume that something must belong (*GEHÖR*) to Grandad.). It seems to be the case that in Eroms' model verbs can be decomposed into nouns.

The sentences in [20] and [21] contain examples of what Eroms calls *verbdependente nicht lokale Präpositionssphrasen* (1980:58) 'verb-dependent non-locative phrases'. In his analysis the noun *Verlust* 'loss' is decomposed, if that is the right word in this case, into the verb *VERLOREN HAB* 'have lost'. I give in [20b] and [21b] Eroms' trees, with a gloss.

- [20] a. *Man jammerte über den Verlust.*
one wailed about the loss
'There was wailing about the loss.'



- [21] a. *Man bejammerte den Verlust.*
one be-wailed the loss
'There was wailing about the loss.'



Eroms (1980:58)

Eroms gives no clue as to how we are to interpret these trees. We can see that the only difference between the trees in [20a] and [20b] lies in where the second S node joins the tree. In [20b], where VERLOREN HAB is topicalised (shown by 'top'), the second S node joins to E₁ and E₂. I take it that this means that the preposition *über* 'about' is bypassed in [20b], but there are simpler ways of conveying that idea. Eroms' trees pose more questions than they answer.

All that the transformations, decompositions and the plethora of S, V and E nodes that are typical of Eroms' analysis achieve is an obscuring, rather than an illumination, of a simple syntactic parallel. This parallel is the familiar one: that a *be*-verb corresponds syntactically to a simplex verb plus a preposition.

- | | | | | |
|------|----|---------------------|---|-----------------------|
| [22] | a. | <i>bepflanzen</i> X | = | <i>pflanzen in</i> X |
| | | 'be-plant X' | | 'plant in X' |
| | b. | <i>bewohnen</i> X | = | <i>wohnen in</i> X |
| | | 'be-live X' | | 'live in X' |
| | b. | <i>bejammern</i> X | = | <i>jammern über</i> X |
| | | 'be-wail X' | | 'wail about X' |

Eroms is well aware of these facts, as his lists of verbs attest, but he seems to have lost track of the essential idea. The observable facts in [22] can be accounted for without Rococo ostentation.

1.4.3 Lieber and Baayen's (1993) Lexical Conceptual Structures

Lieber and Baayen (L&B) in their paper on Dutch verbal prefixes (1993) adopt the framework of Lexical Conceptual Structures (LCS), a development of Jackendoff's (1983, 1990) lexical semantics, which proposes that the meanings of verbs can be decomposed into a number of semantic primitives (see also Rappaport and Levin 1988). The following LCSs for the verbs *run* and *attach* will illustrate the idea:

[23] From Jackendoff (1990)

```
a run [EventGO ([ Thing    ],[Path    ])]
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b attach (Event^{CAUSE} ([Thing],[Event^{INCH} [State^{BE} c,a
([Thing],[Place])])))]

Lieber and Baayen (1993:53)

In these two LCSs each open slot corresponds to an argument which is normally realized syntactically. Thematic roles have no independent status, but correspond to open arguments of particular semantic functions. Informally, the LCS for *attach* signifies that a thing causes another thing to become attached to a third thing. The subscripts *c*, *a* are used to indicate 'contact' and 'attachment'.

L&B claim that each of the prefixes *ver-*, *be-*, *ont-* makes a 'distinct and unitary contribution to the semantics of (the verb's) base' (1993:65), i.e. that each affix displays a single basic LCS in which several sorts of small variations can occur (ibid:54). When a prefix is attached to a verb, it adds its own LCS to the LCS of the verb. The resultant verb is an amalgam of the two LCSs.

1.4.3.1 The *be-* prefix in LCS terms

In [24] I give the LCS for the *be-* prefix. (The *d* subscript indicates 'totally affected'. This is to account for the presumed holistic interpretation of *be-*, cf. 2.3.2 above). In the LCS *d* can be read as 'completely AT'.)

[24] basic LCS for be-

[EventCAUSE ([Thing],[EventINCH [StateBE ([Property, Thing, Event],
[PlaceAT_d([Thing]))])])]

Lieber and Baayen (1993:60)

The LCS for *be*-verbs shows that *be*- is taken to be a causative prefix (a few exceptions apart) that 'involves a change of state, the coming of a Thing, Property, or

Event to be located at a literal or metaphorical Place' (1993:60). The change of state is encoded as [EventINCH], which is intended to represent the inchoative feature on *be*-verbs. To show how the LCSs work, I give some of Lieber and Baayen's Dutch examples with their informal interpretations.

- [25] a. *bekorten* 'shorten'
 'cause the property of shortness to be completely at something'
- b. *bebossen* 'afforest'
 'cause forest to be completely at something'
- c. *bebouwen* 'build something on'
 'cause the act of building something to be located completely at a place'

There is, I think, a basic flaw in Lieber and Baayen's analysis. Recall that in their model the *be*- prefix has an LCS, given in [24], and that when the prefix is attached to a verb, the LCS of the prefix is added to the LCS of the verb. The LCS of the resultant prefixed verb is, then, an amalgam of the LCSs of the prefix and base verb. The problem here is that the LCS that Lieber and Baayen give for *be*- looks more like an LCS for a *be*-verb than an LCS for the *be*- prefix alone. I do not see how Lieber and Baayen's basic LCS for *be*- is to be amalgamated with another LCS. The example that Lieber and Baayen give of a *be*-verb formed from a simplex verb, *bebouwen* 'build something on' from *bouwen* 'build', suggests that the LCS for *bouwen* (whatever the LCS might be) is inserted into one of the two [Thing] slots in the basic *be*- LCS.

A second problem concerns the denominal and deadjectival *be*-verbs that Lieber and Baayen use to illustrate their model. Are we to take it that adjectives and nouns also have a LCS that amalgamates with the basic LCS of the *be*- prefix? It is not at all clear how the mechanics of LCS amalgamation are expected to operate.

Lieber and Baayen note that there are some *be*-verbs that 'have somewhat idiomatic meanings'. One such verb (1993:76, fn.9) is *beschrijven* 'describe', from the simplex verb *schrijven* 'write'. Lieber and Baayen's classification of *beschrijven* as

'idiomatic' is presumably because *beschrijven* does not fit their LCS. An LCS parallel with that in [24] and [25], 'cause the act of writing something to be located completely at a place' patently does not fit the meaning of 'describe'. In fact, taking an example such as *het landschap beschrijven* 'describe the countryside', neither the act of writing, nor what is written can be 'at the countryside'.

What I think Lieber and Baayen have missed is that *beschrijven* is synonymous with *schrijven over* 'write about'. Such parallels between a *be*-verb and a simplex verb with a preposition abound in Dutch and German (see 2.3.2.1 above), and cannot be dismissed as idiomatic. Neeleman and Schipper (1992), in their account of Dutch *ver*-verbs, do note, albeit cursorily, the alternation between PP arguments and NP arguments (see 12.7.4).

I will postpone further discussion of Lieber and Baayen's (1993) LCS framework until Chapter 12, where I discuss their critique of Neeleman and Schipper's (1992) analysis of the Dutch *ver-* prefix.

1.4.3.2 The ver-prefix in LCS terms

L&B claim that all verbs in *uer-* are either literal or metaphorical motion verbs and that all of the various categories are instantiations of a single LCS, given in [26].

[26] Basic LCS for ver-

[Event CAUSE ((Thing), [EventGO ((Thing), [Path FROM ((Thing, Place, Event)) TO ((Thing, Property, Place))))])]

This LCS claims that *ver-* characteristically forms verbs of motion (indicated by the semantic primitive GO) involving both a source (the argument of FROM) and a goal (the argument of TO). Optionally *ver-* adds a causative function (the semantic primitive CAUSE). Optional arguments are underlined.

In [27] I give some examples in a simplified LCS format. (The diamond in [27d], representing 'waste, ruin, wrong place', is Jackendoff's way of indicating the sometimes pejorative or negative connotations of *ver-*.)

- [27] a. *verhuizen* 'move (house)'
 CAUSE/GO/FROM *huis* TO *huis*
- b. *verpakken* 'wrap up (in a package)'
 CAUSE/GO/FROM/TO *pak*
- c. *verharen* 'shed hair'
 GO *haar* FROM/TO
- d. *verwormen* 'be eaten by worms'
 CAUSE *worm* GO/FROM/TO ♦

These examples show clearly what L&B are trying to achieve. The four verbs derive from nouns. For each verb the base noun appears in a different slot in the basic LCS: in [27a] and [27b] the noun is in the PP slot(s), in [27c] it is in the subject slot of the verb GO, and in [27d] it is in the subject slot of CAUSE.

We might, however, point out that what L&B have achieved is essentially a set of lexical entries for prefixed verbs. There is nothing in their LCSs that has explanatory force. Thus, for instance, the *ver-* prefix has in its LCS an optional [+CAUSATIVE] feature. We might ask what *ver-* is doing on a verb when the causative reading is not realized, as in the verb *verharen* 'shed hair' in [27c]. Another reason why the LCS framework lacks explanatory force is that it is, by itself, unable to account for certain aspects of the prefixed verbs without resorting to stipulation. Here I am referring to the insertion of ♦ in [27d] to indicate a pejorative reading, and to the insertion of the subscripts *a* (attachment), *c* (contact) in [23], and *d* (totally affected) in [24].

Another important problem is presented by verbs such as German *werfen* 'throw' and *senken* 'sink (trans.), lower'. These verbs can also be decomposed into

something like 'Cause something to go to a place' and we would expect them to have an LCS that is in all respects the same as the LCS for the *ver*-verbs, i.e. something along the lines of the following.

- [28] a. *werfen* 'throw'
 senken 'sink, lower'
 CAUSE/GO/FROM /TO ([Thing, Property, Place])

If, then, *werfen* and *senken* can have the LCS of a *ver*-verb, what happens when these two verbs are prefixed by *ver*-? I show the result in [28b].

- b. *verwerfen* 'reject'
 versenken 'sink, lower'
 ?CAUSE/CAUSE/GO/FROM /TO ([Thing, Property, Place])

Is it possible that the *ver*- prefix can add a second CAUSE feature to a verb that already has one? I can throw a ball at a wall (cause the ball to be at the wall), and I can cause someone else to throw a ball at a wall, but does this mean 'cause cause the ball to be at the wall'? Even if it does, this is not the meaning of *verwerfen*. *Verwerfen* means 'reject', and I cannot see how this verb can contain two causative morphemes.⁷

One further aspect of Lieber and Baayen's analysis of prefixed verbs merits discussion. Their analysis depends on lexical decomposition, i.e. decomposing a verb into elementary units, such as CAUSE, BE AT, GO. Lexical decomposition, albeit in a somewhat different framework, is also central to Emonds' (1980) transformational model (see 1.4.2) and Larson's (1988) analysis of Dative Shift verbs (see Chapter 7). Lexical decomposition, as such, is not new; it goes back to classes given by Ross and

⁷ In the Figure/Ground schema that I am proposing the prefix *ver*- is an allomorph of a directional feature, in this case meaning 'down'. Thus, from *werfen* 'throw' we get *verwerfen* 'throw down, reject'. I discuss the *ver*- prefix in Chapters 10 and 11.

Lakoff in the mid 1960s. Their deep structure for *Floyd broke the glass* is given, in simplified form, in [29], from a tree in Newmeyer (1986:84).

[29] /I declare you/it [+PAST]/it happen/Floyd do it/Floyd cause it/it come about/it be/the glass broken/

A significant problem with lexical decomposition is knowing when to stop decomposing. The /I declare you/ is presumably necessary because the sentence is a declarative, but why, then, is there nothing in [29] along the lines of /there is an animate being called Floyd/; there is, after all, an entailment that there be an animate being called Floyd. Furthermore, one might wonder why *broken* survives decomposition. Is it not too tempting to decompose it into something like 'not whole'.

What lexical decomposition fails to provide is any predictive account of how the subject/verb/object sentence *Floyd broke the glass* derives from the supposed deep structure given in [29]. How does *Floyd* become the surface subject, and not something else, for instance *the glass*? How does the verb come to be *broke*?

1.4.4 A Minimalist Analysis

Josefsson (1997) attempts to account for the Locative Alternation in Swedish by adopting the principles of the Minimalist Program of Chomsky (1993)⁸. I will deal in some detail with Josefsson's account since it is a very recent attempt to understand prefixation in a framework that has had much influence on generativists. Swedish has a verbal prefix *be-* that operates in the same way as the German *be-* prefix. I give some of her examples (1997:130).

[30] a. *Min kusin sköt två skott på haren.*
 my cousin shot two shots on hare-the
 'My cousin fired two shots at the hare.'⁹

⁸ I am grateful to Gunlög Josefsson for supplying me with a copy of her thesis.

⁹ Josefsson does not always give a translation. In all the examples cited in this section the Swedish example and the gloss are by Josefsson, the translation is mine.

- b. **Min kusin be+sköt två skott på haren.*
 my cousin *be*-shot two shots on hare-the
 'My cousin *be*-shot two shots at the hare.'
- c. *Min kusin be+sköt haren (med två skott).*
 my cousin *be*-shot hare-the (with two shots)
 'My cousin shot the hare with two shots.'

Josefsson specifically rules out an analysis of *be*-prefixation in terms of movement and incorporation. Following the Minimalist Program, she assumes that all movement must be triggered by checking requirements. Therefore, instead of deriving [30b] from [30a] by Move α , Josefsson proposes a derivation according to the principle of Merge. *Be*- and the simplex verb are merged. The *be*- prefix binds (Josefsson's term) a θ -role that is incorporated in the resulting prefixed verb. Josefsson assumes that the θ -role that *be*- binds is identical to the role assigned by the preposition *med* in [30c]. She refers to this θ -role as a Comitative role. Additionally, because the direct object of a *be*-verb is generally an 'affected' object, Josefsson assumes that a *be*-prefixed verb assigns a Telic θ -role that is controlled (Josefsson's term) by the prefix, and which makes the prefixed verb obligatorily transitive. However, because *be*- is devoid of ontological category (being neither a Thing, nor a Property, nor an Event) it cannot assign any θ -roles, whether directly or indirectly. She accounts for the ungrammaticality of [30b] by saying that a *be*-prefixed verb may not have a 'simultaneous cognate object'.

The most important difference between Josefsson's account and the one that I am proposing has to do with the identity of the prefix *be*-. Josefsson associates the *be*- prefix with the preposition *med* 'with'¹⁰. For her *be*- is

¹⁰ Pesetsky (1995) also relates *be*- to the preposition *with*. See Chapter 13.

'a binder of a θ -role of the kind usually associated with prepositions. In the prototypical cases prepositions assign locational θ -roles, but in the case of *be-* I assume that the θ -role in question is identical to the role assigned by the preposition *med*.'

Josefsson (1997:130)

This seems to mean that two morphemes in a sentence (*be-* and *med*) are able to assign the very same θ -role. This is highly problematic in general theoretical terms, but remains an *ad hoc* stipulation in Josefsson's proposal. Furthermore, it is not clear what θ -role *med* assigns. The problem here is that Josefsson, having noted that 'in the prototypical case prepositions assign locational θ -roles' then fails to realise that *be-* also relates to a locational feature.

In my analysis *be-* is an incorporated allomorph of a location preposition. In Josefsson's examples, therefore, I claim that in [30c] *be-* substitutes for the preposition *på* that we find in [30a]. I account for the ungrammaticality of [30b], not by reference to simultaneous cognates (*sköt* and *skott*), but by claiming that, since *be-* is the allomorph of *på*, they cannot co-occur in a clause.

Note that it is not possible to improve [30b] by substituting a non-cognate direct object. The following examples illustrate the idea in Swedish and German. The sentences are ungrammatical regardless of whether the direct object is cognate with the verb stem or not. Thus, in [31] the verb *besköt* 'be-shot' is ungrammatical with the direct objects *skott* 'shots' (cognate) and *kanoner* 'canons' (non-cognate). Similarly in the German example [32] *beschossen* 'be-shot' is ungrammatical whether the direct object is a cognate (*Schüsse* 'shots', *Geschütze*, 'guns') or non-cognate (*Kanonen* 'canons').

- [31] **Soldaterna besköt {skott/kanoner} på hamnen.*
 soldiers-the be-shot shots/canons at harbour-the

(Ute Bohnacker, p.c.)

[32] **Die Soldaten be+schossen {Schüsse/Geschütze/Kanonen} auf den Hafen.*

the soldiers *be*-shot {shots/guns/canons} at the harbour

Intended meaning: 'The soldiers fired shots/canons at the harbour.'

In my analysis [32] is ungrammatical because *be-* co-occurs with its allomorph *auf*. A corollary of this co-occurrence restriction is the requirement that the direct object of *beschossen* should be the Ground (*Hafen*), not the Figure (*Kanonen*).

Josefsson's account runs into further difficulties when it comes to a verb such as *begråta* (*be*-weep) 'weep over, mourn'.

[33] a. *Han gråter över vännens död.*

he weeps over friend-the-POSS death

'He weeps at the death of his friend.'

b. *Han begråter vännens död.*

he *be*-weeps friend-the-POSS death

'He bewails the death of his friend.'

(Ute Bohnacker, p.c.)

Josefsson acknowledges that *begråta* is problematic for her hypothesis, because of the telic θ -role that she associates with the prefix. Her explanation involves the use of the term 'Event measurer' in the sense of Tenny (1987) and Arad (1996). The idea is that the direct objects of telic verbs 'measure out' the event described by the verb. Thus, in *He ate the apple* the eating of the apple proceeds until the apple is eaten. In other words the apple is an 'Event measurer' in that it 'serves as a scale upon which the event may be seen as proceeding' (Arad 1996:219).

Josefsson attempts to accommodate *begråta* among the telic verbs with Event measurer complements. She assumes that:

... *begråta* has a meaning similar to *sörja* 'mourn'. The mourning is over once one has got over the sorrow. The object of *begråta* is an Event measurer, given the idea that the executor of the action of crying needs to 'get over' the object in a metaphoric

sense. The object of the mourning thus 'serves as a scale upon which the event may be seen as proceeding'.

Josefsson (1997:132)

This sort of argumentation is not very convincing, but serves well to illustrate the difficulties that seem to be inherent in non-syntactic analyses. Note that Josefsson's reasoning is an attempt to account for the *be*-prefixation of the simplex verb *gráta* 'weep', and seems to imply that a verb that takes an 'Event measurer' direct object will be a *be*-verb. This cannot, however, be the case, as can be seen in an example with the verb *eat*, which prototypically takes an 'Event measurer' direct object: *He (*be-)ate the apple*.

Even more of a problem for Josefsson's proposal is presented by a verb such as *be-tvívla* 'be-doubt', which is cognate with German *bezweifeln*. Because Josefsson's analysis requires a *be*-verb to take an 'Event measurer' direct object she is forced into trying to find one:

To *be-tvívla nágöt* 'be-doubt something' means to assume that something is incorrect or insufficient. Doubt is a concept necessarily operating on a background of assertion or potential assertion. *Slightly extending the notion of Event measurer* (my emphasis) as having undergone a change of state, to indicate being in a state different from that of the background, we may also incorporate the *be-tvívla* type in the proposed description.

Josefsson (1997:133)

I do not see how, in an example such as *He doubts my sincerity*, the direct object can be an 'Event measurer' (extended or otherwise). The direct object here cannot, surely, serve as a scale to measure out the process of doubting.

The problem with an analysis of *be*-verbs that falls back on semantic interpretations is that there are potentially as many semantic interpretations as there are *be*-verbs.

The verbs *begráta/bewetnen* and *betvívla/bezweifeln* pose no problem in my analysis, which does not depend on telicity, Event measuring or the assignment of θ -

roles. Josefsson doesn't give examples of the Swedish verbs in sentences, but I imagine that the Swedish and the German share the same construction. I give here the equivalent German sentences.

[34] a. *Er weint über den Tod seines Freundes.*

'He weeps over the death of his friend.'

b. *Er beweint den Tod seines Freundes.*

'He bewails the death of his friend.'

[35] a. *Er zweifelt an meinem guten Willen.*

he doubts at my good will

'He doubts my good will.'

b. *Er bezweifelt meinen guten Willen.*

'He *be*-doubts my good will.'

In these examples the [a] and [b] alternations show clearly that the prepositions *über* and *an* are in complementary distribution with the prefix *be-*. We can therefore simply say that the *be-* prefix is the allomorph of the head of the PP in the VP of the simplex verb. There is no necessity to appeal to the semantics of the verbs in question.

A more serious problem for Josefsson's account of *begråta* in my view, and one that she does not address, has to do with the comitative θ -role that binds the prefix. Recall that in her view *be-* is associated with the preposition *med* 'with'. Why, then, is there no *med* PP (or *mit* in German) in [33], whereas there is a *med* in [30]?

A further difficulty with Josefsson's analysis shows up when she tries to accommodate the *be*-verbs that are not derived from a simplex verb. An example is *be+folka* 'populate', which in my view is an example of noun-incorporation into a null verb. She claims that her analysis 'has the virtue of incorporating examples like these *without further costs*' (my emphasis). I confess that in the absence of clarifica-

tion I am unable to see how this can be. If the formation of *be*-verbs is no more than the operation of merging two morphemes taken from the lexicon, what is there to prevent the merging of *any* prefix with *any* morpheme, or even the merging of any two morphemes? Nor can I see how comitative and telic θ -roles can explain the derivation.¹¹

1.5 Conclusions

The three frameworks that I have outlined in 2.4, Case Grammar (Becker 1971), Eroms' (1980) transformational model, and Lexical Conceptual Structures (Lieber and Baayen 1993), fall short of success in providing explanations for, or insights into the prefixed verbs. A significant reason, I think, is that any model that attempts to explain the behaviour of these verbs by analysing only the semantics of the sentences in which the verbs occur is doomed to failure. I also think that lexical decomposition, whether of verbs into 'light' verbs, or verbs into nouns, or nouns into verbs ends up being a fruitless activity, because there are no methodological boundaries.

¹¹ Josefsson claims that there are some Swedish *be*-verbs formed by prefixation of *be-* to a lexical element that has no independent existence in Swedish. Examples given by Josefsson are *be-kymra* 'worry' and *be-sudla* 'soil'. Thus there is no verb or noun of the form *kymra* or *kymmer*. Josefsson calls these elements 'formatives, but not meaning-bearing units' (1997:134). She means by this that only the combination of prefix and stem can have meaning. Again I think that her treatment of such verbs needs clarification.

In my view *bekymra* would be an example of noun-incorporation, albeit that the noun may not be extant in modern Swedish; compare German *Kummer* 'worry'. I would consider *besudla* to be a prefixed simplex verb; compare German *sudeln* 'scrawl, daub'.

In fact, Dahlgren (1916) gives the nouns *bekymmer*, *kymmer*, *kymring* as well as the verbs *kymra*, *bekymra*.

CHAPTER 2

THE *GE*-PREFIX IN GERMAN:

A MUCH STUDIED MORPHEME

This chapter treats the *ge*- prefix on German verbs. As a phenomenon of the German lexicon and grammar this prefix has received scant treatment in modern generative literature, yet it is far from being unproblematical. The prefix occurred in most of the old Germanic dialects and attracted the attention of large numbers of writers in the last century and the first quarter of this century (Wackernagel 1875, Grimm 1878, Weick 1911, Bloomfield 1929, Samuels 1949). Their concern was 'the meaning' of the *ge*-prefix.

2.1 The Distribution of *ge*- in Modern German

The prefix *ge*- is found in Modern German on words from three lexical categories: N, A, and V. I give first some examples of nouns and adjectives which are compounded with *ge*- and treat verbs in more detail later.

2.1.1 *Ge-* on Nouns

The only fully productive noun-forming process which involves *ge*- is of the general type [N*ge*-[vX]-e], where X is a verb stem. Thus we have *Getöse* 'din', *Getue*, 'fuss', *Gequäke* 'whining'. These nouns usually have durative and pejorative meaning. A large number of denominal collective nouns also have this form (not always with the final *e*): *Berg*, *Gebirge* 'mountain, range of mountains', *Feder*, *Gefieder* 'feather, plumage', *Wasse*, *Gewässer* 'water, stretch of water'. These two types of *ge*-noun are always of neuter gender. Typically the vowel of the simplex is modified in the collective.

There are many *ge*-prefixed nouns which do not conform to these two types (i.e. they have no durative pejorative meaning, their stem vowel does not undergo

modification, they do not automatically take neuter gender): *der Gehalt* 'contents', *das Gehalt* 'salary', *der Gebrauch* 'use', *die Gefahr* 'danger'.

2.1.2 Ge- on Adjectives

Ge- is not productive as a means of forming adjectives. Examples of surviving *ge*-adjectives:

- (a) denominal: *Trost/getrost* 'consolation/confident', *Heim/geheim* 'home/secret'
- (b) deverbal: *messen/gemäß* 'measure/in accordance with', *wissen/gewiß* 'know, certain'
- (c) deadjectival: *recht/gerecht* 'right/just', *streng/gestreng* 'strict/stern'

2.1.3 Ge- on Verbs

The verbal *ge*-prefix occurs in two contexts in Modern German: as an unstressed, preverb on verbs such as *gewinnen* 'to win', *gehören* 'to belong', and as the marker of the past participle as in *kommen/er ist gekommen* 'to come/he has come', *schlagen/er hat geschlagen* 'to hit/he has hit'. The first use, as a verbal prefix, is unproductive and moribund; the second use of *ge*- as a marker of the past participle is fully productive.

2.1.3.1 Ge- as the Marker of the Past Participle

The past participle of all stem-stressed verbs in German is marked by prefixation of *ge*-: *machen, ge-macht*; *sinken, ge-sunken*. The past participle takes no *ge*- if the verb has an initial unstressed vowel, *ver-stehen, ver-standen*/**ge-ver-standen*; *telefonieren, tele'foniert*/**ge-tele'foniert*.

It should be said for the record that German has some denominal adjectives of the form [_A*ge*-[_NX]-t], i.e. they have the appearance of being past participles (they are prefixed by *ge*-). However, there is no corresponding infinitive; these are, in fact, adjectives derived from nouns. They have passive force. Some examples are: *ge-stiefel-*

t 'booted, wearing boots'; *ge-harnisch-t* 'armoured, wearing armour'; *gut ge-laun-t* 'in a good mood'.

2.1.3.2 *Ge-* as a Preverb

Given the widespread distribution of the *ge*-prefix and its once prolific productivity (see Lindemann 1970) it is tempting to want to establish its meaning and the way it functioned. The most promising approach would seem to lie in an analysis of the *ge*-prefixed verbs, rather than the adjectives or nouns. In the rest of this part I concentrate on the verbs formed by means of the *ge*-preverb.

The *ge*-preverb is not a productive morpheme. The number of *ge*-verbs that have survived into Modern German is relatively small in comparison with the number of verbs prefixed by productive *be-*, *ver-*, and *ent-*. Those that have survived can be divided into three groups, (a) *ge*-verb/simplex pairs which are lexically related, (b) *ge*-verb/simplex pairs which are not lexically related, and (c) *ge*-verbs which do not have a simplex counterpart.

There are 41 *ge*-prefixed verbs in Collins German Dictionary (1991). Of these 41 verbs 21 do not have an extant simplex counterpart: *gebären*/**bären*, *gewöhnen*/**wöhnen*. In those 20 cases where the simplex verb exists there is a clear correlation in meaning between the prefixed and simplex verbs for 10 *ge*-verb/simplex pairs, and no clear correlation in meaning for the 10 remaining pairs. This means that less than a quarter of the extant *ge*-verbs have a semantically related simplex. TABLE I gives the verb pairs which are lexically related; TABLE II gives the verb pairs where no plausible semantic relationship can be discerned. I discuss, with examples, each table in turn.

Intuition suggests that there is a more or less clear lexical relationship between the prefixed and the simplex verbs in TABLE I, thus, for instance, 'obeying one's parents' (*gehorchen*) implies 'listening to one's parents' (*horchen*). Eggeling (1961:156) accounts for the verb pair thus: *gehorchen* 'to hear a person out' and act

in accordance with his wishes, i.e. 'to obey'¹. He derives *gedenken* from *denken* in similar manner: *gedenken* (either 'to think out completely' and then take action, i.e. 'to make up one's mind, intend', or, 'to think completely of' and impress on one's mind, i.e. 'to remember' (1961:156). We can 'explain' the relationship of *gedulden* to *dulden* as follows: being patient' (*dulden*) implies some sort of 'tolerance' (*dulden*); 'escort' (*geletten*) contains the notions 'lead, guide, be in charge of' (*letten*).

<i>gebrauchen</i>	use	<i>brauchen</i>	require, use
<i>gedenken</i>	remember	<i>denken an</i>	think of
<i>gehören</i>	obey	<i>hören</i>	listen
<i>sich gedulden</i>	be patient	<i>dulden</i>	tolerate
<i>gelangen</i>	attain	<i>langen (dialect)</i>	reach
<i>geletten</i>	escort	<i>letten</i>	lead, guide
<i>gemahnen</i>	remind of	<i>mahnen</i>	remind, admonish
<i>gereichen</i>	redound	<i>reichen</i>	reach, pass
<i>sich getrauen</i>	dare	<i>trauen</i>	trust, dare
<i>geziemen</i>	befit	<i>ziemen</i>	be proper

TABLE I

The following examples show how we can relate the verbs *gereichen/reichen*, which at first sight seem somewhat remote:

- [1] a. *Er reichte der jungen Dame die Hand.*

'He offered the young lady his hand.'

¹ Compare Russian *slušať'sja* 'obey', *slušať* 'listen':

- | | | |
|-----|------------------------------------|------------------------------------|
| (i) | <i>Deti slušaťsja roditel'jam</i> | <i>Deti slušaťut roditel'ei</i> |
| | children listen-REFLACC parentsDAT | children listen parentsACC |
| | 'Children obey their parents' | 'Children listen to their parents' |

- b. *Unser Garten reicht bis ans Ufer.*
 ‘Our garden stretches as far as the river.’
- c. *Dieser Kuchen reicht nicht für vier Personen.*
 ‘This cake won’t do (be enough) for four people.’
- d. *Deine Lügen gerethen dir zum Schaden*
 your lies redound to-you to damage
 ‘Your lies will damage your reputation.’

In the [a] example *reichen* has the concrete meaning of ‘stretching out the hand’. It contains the idea of motion ‘over a distance’. This meaning can be seen in the [b,c] examples, albeit in a more abstract manner; the idea of ‘stretching as far as the river’, a spatial concept, and ‘stretching to suffice for four people’. We can see, I think, the same idea in [d], where the ‘lies will be sufficient to damage the person’s reputation’. What seem to be the crucial notions in these examples are PATH and GOAL. I return to this idea in a later section.

TABLE II lists the verb pairs which do not seem to have a semantic relationship:

<i>gebieten</i>	command, demand	<i>bieten</i>	offer
<i>gebrechen</i>	lack	<i>brechen</i>	break
<i>gefallen</i>	please	<i>fallen</i>	fall
<i>gehören</i>	belong	<i>hören</i>	hear
<i>sich gehören</i>	be fitting	<i>hören</i>	hear
<i>geraten</i>	get into	<i>raten</i>	guess, advise
<i>geruhen</i>	deign	<i>ruhen</i>	rest
<i>gestehen</i>	admit, confess	<i>stehen</i>	stand
<i>gewähren</i>	grant	<i>währen</i>	last
<i>gewahren</i>	become aware of	<i>wahren</i>	keep, protect

TABLE II

It is clear that the meanings of the *ge*-verbs in TABLE II are far removed from the meanings of their respective simplexes. Synchronically we must consider them semantically unrelated to their simplexes. Some examples of the verbs in use will show how lexically (and syntactically) different they are:

- [2] a. *Er gewahrte eine seltsame Gestalt.*
 'He became aware of a strange figure.'
- b. *Man muß seinen Ruf wahren.*
 'One must safeguard one's reputation.'
- c. *Er gesteht dem Beichtvater seine Sünden.*
 'He confesses his sins to the priest.'
- d. *Er steht am Fenster und horcht.*
 'He is standing at the window listening.'
- e. *Der neue Film gefällt meinem Freund.*
 the new film is-pleasing to my friend
 'My friend likes the new film.'
- f. *Das Baby fällt, wenn es versucht, aufzustehen.*
 'The baby falls when it tries to stand up.'

In trying to determine the function or meaning of *ge*- as a preverb what might we be looking for? A number of possibilities suggest themselves:

- (a) *ge*- might have, or might have had, a syntactic function and require, for instance, that the verb subcategorise for a particular sort of argument (in a similar way that *be*-verbs require a Ground complement),
- (b) the compound verb could be a transitive version of an intransitive simplex, or require an oblique case complement or a PP complement,
- (c) the *ge*-preverb could affect the semantics of the verb (change an activity verb into an accomplishment verb), or it might make an imperfective verb perfective.

In the next section I examine the syntax of *ge*-verbs and in the following section the possibility that it has an aspectual function.

2.2 The Syntax of *ge*-verbs

It is not clear from TABLE I what a syntactic relationship between the verb pairs might be. Take, for instance, the verb pair *gehören/hören*. The prefixed verb (=‘obey’) takes a dative NP complement, whereas the simplex verb (=‘listen’) takes a PP complement:

- [3] a. *Er gehorcht seinen Eltern*_{DAT}.
 ‘He obeys his parents.’
 b. *Er horcht auf seine Eltern*_{ACC}.
 ‘He listens to his parents.’

On the other hand, in the case of the verb pair *gedenken/denken*, the prefixed verb takes a genitive NP complement, whereas the simplex takes a PP complement:

- [4] a. *Er gedachte seines Vaters*_{GEN}.
 ‘He remembered his father.’
 b. *Er dachte an seinen Vater*_{ACC}.
 ‘He thought about his father.’

The prefixed verb has a different subcategorization frame when it means ‘remember with a grudge’. Here the verb has two NP complements: a dative for the animate goal, and accusative for the theme:

- [5] a. *Er wird mir*_{DAT} *die Beleidigung*_{ACC} *gedenken*.
 he will to-me the insult remember
 ‘He’ll get even with me for the insult.’

The examples in [3], [4] and [5] suggest that verbs such as *gehören*, *gedenken*, which require an oblique case complement, behave in a similar fashion to the *be*-

verbs (Maylor 1996). In these examples the *ge*-prefix may carry a +LOCATIVE feature and be able to absorb or incorporate a preposition.

In fact the *ge*-verbs exhibit a bewildering variety of syntactic templates: impersonal verbs with an accusative object, impersonal verbs with a dative object, verbs with a single accusative object, verbs with a single dative object, verbs with two objects, verbs requiring a PP complement, verbs conjugated with *sein*.

I give below the 41 *ge*-verbs listed in the dictionary (Collins 1991), arranged according to their subcategorization frames, and then give some illustrative examples. (Verbs which the dictionary lists as 'archaic', 'dated', 'elevated', 'formal' are marked thus: †);

[6] V, +___NP_{ACC}:

gebrauchen, gefährden, geleiten, genehmigen, genießen, gestalten, †gewahren, †gewärtigen, gewinnen

'use, endanger, escort, approve, enjoy, arrange, become aware of, be prepared for, win'

a. *Ein Mechaniker gebraucht einen Schraubenzieher.*

'A mechanic uses a screwdriver.'

b. *Rauchen gefährdet Ihre Gesundheit.*

'Smoking damages your health.'

[7] V, +___NP_{ACC}, NP_{DAT}:

gebären, †gebieten, gestatten, gestehen, gewähren, g(e)önnen

'give birth, command, allow, admit, grant, grant'

a. *Die Frau gebär ihrem Mann ein Kind.*

'The woman bore her husband a child.'

b. *Der junge Mann gestand der Polizei den Diebstahl.*

'The young man admitted the theft to the police.'

[8] V, +__NP_{ACC}, PP

†*gemahnen an, gewöhnen an*, (remind of, accustom)

- a. *Die Mutter gewöhnte das Kind an Sauberkeit.*
 'The mother accustomed the child to cleanliness.'
- b. *Das gemahnt mich an meinen Vater.*
 'That reminds me of my father.'

[9] V, +__NP_{DAT} or V, + __ PP

gehören, g(e)leichen, gehören, geschehen, †gelingen, g(e)lauben

'obey, resemble, belong, happen, redound, believe'

- a. *Kinder müssen ihren Eltern gehorchen.*
 'Children must obey their parents.'
- b. *Dieses Buch gehört {mir_{DAT}/in den Schrank_{ACC}}.*
 'This book belongs {to me/in the cupboard}.'
- c. *Ich glaube {meinem Freund_{DAT}/an den Frieden_{ACC}}.*
 'I believe {my friend/in peace}.'

[10] V, + __ NP_{GEN}

†*gedenken* 'remember, commemorate'

- a. *Wir gedenken unserer Toten_{GEN}.*
 'We remember our dead.'

[11] V, + (es)__ NP_{DAT}

†*gebrecen, †geziemen, gelingen, gefallen*

'be lacking, be fitting, succeed, be pleasing'

- a. *Es †gebricht ihm an Mut*
 it lacks him in courage
 'He lacks courage.'

b. *Sein Benehmen †geziemt ihm nicht.*

his conduct}befits him not

'His conduct is unbecoming.'

c. *Sein Plan gelang ihm.*

his plan succeeded him

'He succeeded in his plan.'

d. *Der Film gefiel ihm.*

the film pleased him

'He enjoyed the film.'

[12] V, + ____ REFL

sich †gebärden, sich gedulden, sich gesellen, sich getrauen, sich gehören, sich †gebühren

'behave, be patient, join (others), dare, be fitting, be due'

a. *Ich getraue mich nicht dorthin.*

I dare self not to-there

'I dare not go there.'

[13] V, + (es)____ NP_{ACC}

gelüsten, gereuen

'desire, regret'

a. *Es gelüstet ihn nach Schokolade.*

it desires him to chocolate

'He craves chocolate.'

b. *Seine Antwort gereut ihn.*

his answer regrets him

'He regrets his answer.'

[14] V, + ___ IP

†*geruhen* (deign)

Er geruhte es zu tun.

'He deigned to do it.'

Two additional observations regarding the syntax of these *ge*-verbs are in order:

(a) While the majority of the verbs listed above form their perfect tenses by means of the auxiliary *haben*, the following seven verbs require the auxiliary *sein*:

[15] *gedeihen, gelangen, genesen, geraten, gelingen, gerinnen, geschehen*

'thrive, reach, recuperate, get into, succeed, coagulate, happen'

a. *Das Geld ist in die falschen Hände gelangt.*

the money is into the wrong hands reached

'The money got into the wrong hands.'

b. *Etwas Komisches ist geschehen.*

'Something funny has happened.'

(b) Some of the verbs listed above may also take IP or CP complements:

[16] a. *Es gelang dem Kind, [IP das Rennen zu gewinnen].*

it succeeded to-the child the race to win

'The child succeeded in winning the race.'

b. *Ich muß gestehen, [CP daß ich gelogen habe].*

'I must admit that I lied.'

It is clear that these verbs exhibit a considerable variety of syntactic templates. The following observations seem in order:

(a) 16 *ge*-verbs take an accusative NP complement; 6 of these may also take an optional dative complement of the person.

(b) 7 verbs require the auxiliary *sein* and, therefore cannot take an accusative NP complement.

(c) 3 verbs take a PP complement (*an* + ACC).

(d) 11 verbs take a dative complement.

(e) 8 verbs may have an expletive *es* subject.

There is nothing in these figures which points to an overall pattern; I imagine we might find the same range of syntactic frames in a random group of German verbs.

Let us compare the verbs in TABLE I, i.e. the prefixed / simplex verb pairs which are lexically related. If *ge-* has a syntactic function it is amongst these verbs that we should find it.

It turns out that on balance the *ge-*prefix does not have a significant effect on the subcategorization frame of the simplex. If the simplex takes an accusative complement, so does the prefixed verb; if the simplex takes a PP complement, so does the prefixed verb. I give some examples:

[17] a. *Der Mechaniker gebraucht einen Schraubenzieher*ACC.

'The mechanic uses a screwdriver.'

*Der Mechaniker braucht einen Schraubenzieher*ACC.

'The mechanic needs a screwdriver.'

b. *Der Zerstörer geleitete die Frachter*ACC.

'The destroyer escorted the freighters.'

*Der Vorsitzende leitete die Diskussion*ACC.

'The chairman lead the discussion.'

c. *Wir gedenken unserer Toten*GEN.

'We remember our dead.'

Wir denken an unsere Pflicht.

'We think of our duty.'

d. *Ich (ge)traue mich nicht auf die Straße.*

'I dare not venture onto the road.'

- e. *Mit großer Mühe gelangten wir zum Ziel.*
 'With great difficulty wir got to our destination.'
Er langte nach dem Messer.
 'He reached for the knife.'

Examples [a] and [b] show that both prefixed and simplex verbs can have an accusative complement. In [c] a bare genitive alternates with a PP; compare this with the use of the *be*-verb: *Bedenke die Folgen*_{ACC} 'Consider the consequences'. When the simplex verb *denken* takes the *be*-prefix it requires an accusative complement. Example [d] shows that in the case of some verb pairs the prefix is virtually optional. The examples in [e] show that both prefixed and simplex verbs can take PP complements.

We conclude from this evidence that the function of *ge-* is not to change the subcategorization frame of the simplex verb.

If the function of *ge-* is not syntactic, could it be that it is semantic? The next section explores this possibility.

2.3 *Ge-* as a Marker of Aspect

Verb Classes

It is plausible to suppose that *ge-* might affect the semantics of the simplex verb. The preverbs *er-* and *uer-* can have such an effect; *er-* + V NP can have the meaning 'acquire NP by V-ing':

- [18] a. *er bettelte um Geld* '
 he begged for money'
 b. *er erbettelte Geld*
 'he got money by begging'

The preverb *er-* can also change a simplex activity verb into an accomplishment verb: *würgen* 'choke', *erwürgen* 'strangle, kill by choking'. (By *activity* and *accomplishment* verbs, I am referring to the classification of Dowty (1979), which is based on Vendler (1967))

In the 41 *ge-*verbs all the Aktionsarten of *state*, *achievement*, *activity*, *accomplishment*, are more or less proportionately represented; state verbs (*gehören* 'belong', *gleichen* 'resemble'), achievement verbs (*gewahren* 'become aware of', *genesen* 'recuperate'), activity verbs (*geleiten* 'escort', *gebrauchen* 'use'), accomplishment verbs (*gewinnen* 'win', *gefährden* 'endanger').

When we compare the lexically related verb pairs in TABLE I we find that the prefixed verb is always in the same Aktionsart class as the simplex. This can be verified by comparing the verbs in [6] above.

If *ge-* has an effect on the semantics of a simplex verb but does not change its verb class, we might suppose that the prefix has an effect on the lexical content of the simplex. Of the 41 extant *ge-*verbs in German only 10 are lexically related to a simplex. This is too small a number to make adequate judgments about. It will be more profitable to look elsewhere, at the old languages, where *ge-* was productive and prolific.

2.3.1 *Ge- in the Old Germanic Languages*

Much of this section relies heavily on Lindemann (1970). Lindemann examined more than 35 academic papers from the 19th century and the first quarter of the present century on *ge-* in the old Germanic languages. He gives the most commonly held theories regarding the meaning of *ge-*. He then tests these theories by comparing glosses of Latin texts in OE and other Germanic dialects. The number of verbs, both simplex and prefixed, that he examined was about 45,000. He comes to the conclusion that all the prevailing theories are wrong. Since some of the ideas that Lindemann came across are still current, I summarize them here.

Various views on the meaning of Old English *ge-*

(1) The prefix *ge-* is meaningless

Given the facts that *ge-* has completely died out in English, that the meaning of *ge-* in the modern languages (German and Dutch) is very unclear, and that in Old English (OE) the situation was far from clear, it is not surprising that some writers have simply opted for an easy way out and have decided that *ge-* is without meaning.

Lindemann (1970) gives a comprehensive account of the positions taken by the writers of the last century and the early years of this century. He points out that for Samuels (1949:66), and Hollmann (1936:102) *ge-* is 'meaningless' and that for Krapp and Kennedy (1929:xc1) it 'adds little or nothing'. If this is indeed the case how come then that prefixed verbs developed from simplex verbs at all? From the Old English simplex *gan* 'to go', for instance, derive the prefixed verbs *gegan* 'to go away', 'to happen', 'to walk', while *gegan* with an accusative NP complement meant 'to conquer'. Similarly, while OE *standan* meant 'to stand', *gestandan* could mean 'to stop', 'to stand up', 'to remain standing' (examples from Lindemann (1970:3)). It is clear from these examples that we are justified in looking for a meaning or function for the *ge-* prefix, and that we cannot dismiss it as meaningless or claim that it adds little or nothing to the simplex.

(2) *Ge-* stresses or intensifies the action of the verb

This is a more than suspect theory, given the fact that writers have never defined what they mean by it. For Wackernagel (1878) *ge-* qualifies the simplex by being 'unübersetzbar leise verstärkend' ('untranslatable and somewhat intensifying').

(3) *Ge-* converts an intransitive verb into a resultative transitive verb

Lindemann points out that Old English *gegan* 'to go' and *gestittan* 'to sit' are sometimes followed by an accusative, but not necessarily so. While there are prefixed verbs with an accusative NP, they constitute only a small proportion of the corpus. Furthermore, it is not always the case that an accusative NP is the direct object of the verb; in many cases it should be regarded as an adverbial with a meaning such as 'as far as X'.

(4) Ge- indicates completion

This view of the function of *ge-* is one that has had a long history. The argument, as Lindemann shows, proceeds roughly like this: *ge-* is the equivalent of Latin *cum* 'with'; therefore *ge-* must have originally meant 'with', 'together'; this supposedly implies a sense of completeness, which caused *ge-* to be associated with the idea of completed action. Another version goes: from 'with' we get 'fully', 'entirely' and therefore the prefix conveys the idea 'entirely, to the end'.

In modern times Duden (1959:385) claims that *ge-*, like the Latin prefix *con-*, conveys the idea of *Vereinigung* 'union', 'bringing together', which can still be seen in a verb such as *gerinnen* 'clot', 'coagulate', (= **zusammenrinnen* 'to run together'). (Duden uses the same reasoning to explain the function of the noun-forming template [*Nge*-[*VX*]-*e*] which I mentioned in 2.1; thus, from *Berg* 'mountain' we get *Gebirge* 'range of mountains', since the latter is a 'collection, a coming together, a union' of the former.)

The fact that *ge-* is productively, with minor constraints, used as the marker of the past participle in German has tempted many writers to equate *ge-* with a perfectivising function. Wackernagel claimed that *ge-* compensated the old Germanic languages for their lack of Latinate compound tenses; *ge-* on the preterite gave the sense of the Latin perfect and pluperfect, while *ge-* on the present tense provided the equivalents of the Latin perfect, future, and future perfects. This is an ingenious idea but, as Lindemann shows, does not stand up to scrutiny in the texts. Lindemann's analysis of the Old English texts shows that only 16% of *ge*-preterites translate Latin perfects (Lindemann 1970:6).

This does not stop Duden from reiterating the idea of *eine perfektivierende Wirkung* 'a perfectivising effect', similarly Eggeling (1961:156) claims that the original force of *ge-* was 'perfective, indicating the point at which an action or state was completed, or a new state or condition entered upon'. He points out that by the Middle High German period the original force of the prefix 'was no longer vividly felt,

except perhaps in its use with verbs implying an attitude (cf. *sitzen* 'to be sitting', and *ge-sitzen* 'to sit down'). It is not at all clear what he means here by 'attitude'.

(5) Ge- expresses perfective aspect

It is but a short step from the idea that *ge-* expresses completion and is associated with perfect tenses to the idea that it is a marker of perfective aspect. Bloomfield's (1929:29) view was that 'where OE expresses aspect, it reserves the punctual verb (verb with prefix) for unit action and classes repeated, habitual, and generalized acts with the durative (uncompounded verb; more explicitly *beon* with present participle), **exactly as does Slavic**' [my emphasis].

There are two things wrong with Bloomfield's position. Firstly, the texts do not show a differentiation between prefixed and simplex verbs along the lines that Bloomfield proposes; secondly, he equates the Old Germanic verbal system with the Slavic verbal system, yet these are clearly (at least to Slavists) two quite different systems, and Germanic prefixed and simplex verb pairs do not behave like aspectual verb pairs in the Slavic languages.

The idea that prefixes (and postverbal particles) in the Germanic dialects are the equivalent of perfectivizing prefixes in Slavic languages still has its proponents. Thus den Dikken (1995:236, fn 10) asserts that Slavic languages 'possess a range of prefixes which, like independent particles [i.e. as the particle in *eat up*, RM] and the French prefixes [i.e. the *a-* in *apporter* and *amener*, RM]... have an effect on the event structure of the VP'. He gives the examples:

- | | | | | | | | |
|------|----|---------------|---------|-----|-----------------|-------------------------|-----------|
| [19] | a. | <i>pisat'</i> | 'write' | --- | <i>napisat'</i> | 'write up' ² | (Russian) |
| | b. | <i>jesc</i> | 'eat' | --- | <i>zjesc</i> | 'eat up' | (Polish) |

² Den Dikken's Russian example has past tense forms (*pisal/napisal*); I have corrected them in the main text to infinitive forms.

His intention is to show firstly, that the Russian verbal prefix *na-* and the Polish verbal prefix *z-* are the equivalents of the English verbal particle *up*, and secondly, that the Slavic prefixes and the English particle in some way affect the 'event structure of the VP'. On the same page he says that the 'aspectual effect brought about by *a*-prefixation [on French verbs, RM] is typical of particles (cf. *eat* vs. *eat up*). He is, therefore, implying that a particle such as English *up*, and the French prefix *a-* change the aspect of the verb, just as the prefixes *na-* and *z-* change a simplex imperfective into a perfective verb in Russian and Polish.

In view of the persistence with which writers are wont to ascribe aspectual features of Slavic grammar to Germanic verbs, it will be as well at this point to clarify just what verbal aspect is in the Slavic languages. Even if this does not elucidate much about the Germanic verbal system, we might avoid some of the tempting pitfalls that have beset others before us.

2.3.2 Verbal Aspect in the Slavic Languages

Since I am never very sure what people mean when they use the word 'aspect' with reference to, say, English, I will in this section use the form 'ASPECT' when I am referring to the Slavic system of verbal ASPECT.

Verbs in, say Russian, are of two types, imperfectives and perfectives. If I wish to translate the English verb *eat*, or the French *manger*, or the German *essen* into Russian, I have to choose between using the imperfective verb *est'* or the perfective verb *s'est'*. I cannot choose a verb which is ambiguous with respect to ASPECT, i.e. is either imperfective or perfective, nor can I choose a verb which has no ASPECT, i.e. is neither imperfective nor perfective. In effect, this means that for any English verb there are two Russian verbs, an imperfective verb and a perfective verb.

Both imperfective and perfective verbs have a full range of verb forms: infinitive, past tense, non-past tense, imperative, gerunds and participles. ASPECT, then, is not related to tense, but is independent of tense.

which, being imperfective, is used when the speaker wishes to state (a) that the act of writing took, will take, is taking place without reference to the beginning, or the end of the writing process, or its completion, or (b) that it is an habitual or a repeated event. From the imperfective *pisat'* is formed, by means of the prefix *na-* the perfective verb *napisat'* 'to write', which, being perfective, means that the writing was or will be completed. By changing the prefix *na-* into *pere-*, *do-*, *o-*, *s-* other, lexically different perfective verbs are derived. From these verbs, by means of an infix, the corresponding imperfective verbs are formed. This process is shown by means of the arrows in the following schema:

[23]	<u>Imperfective verb</u>		<u>Perfective verb</u>	<u>English</u>
	<i>pisat'</i>	→	<i>na-pisat'</i>	'to write'
			↓	
	<i>do-pisyvat'</i>	←	<i>do-pisat'</i>	'to finish'
	↓		↓	
	<i>pere-pis-yv-at'</i>		<i>pere-pisat'</i>	'to copy'
	↓		↓	
	<i>o-pis-yv-at'</i>		<i>o-pisat'</i>	'to describe'

There are two points to note here. Firstly, a prefix does not automatically perfectivize. Secondly, a prefix may have lexical meaning independent of aspect: *pere-* is the equivalent of 'trans-' in 'transcribe', *o-* derives from the preposition meaning 'about' (*opisyvat'* = 'write about, describe').

We can now see what the essential difference is between Germanic and Slavic verbs. Consider the following:

- [24] a. Ivan wrote a letter.
 b. Ivan *pisal pis'mo*.

All that we can say about the morpheme *wrote* in [a] is firstly, that it has lexical content, i.e. the sentence says something about *writing* rather than about some other

act or activity such as *reading* or *eating*, and secondly, that the verb is in the simple past tense form. The verb *pisal* in [b] likewise has lexical content and is in the past tense, but it additionally conveys ASPECT (in this case imperfective).

- [25] a. *wrote* - lexical content: the act or activity of *writing*
 - morphological form: simple past tense
- b. *pisal* - lexical content: the act or activity of *writing*
 - morphological form: past tense, masculine singular
 - ASPECT: imperfective

This leads naturally to the question how, then, is aspect encoded in English? I propose that aspect is mediated in an English sentence by (a) the lexical content of the verb, (b) the tense form (English has compound tense forms), (c) adverbials, (d) discourse factors, or these elements in combination. Let me illustrate by means of the following:

- [26] a. *I can't eat (all) this pizza. Part of it is not cooked.*
 b. *I can't eat (all) this pizza. It's far too big.*

Both examples contain the verb *eat* in the infinitive form, yet there is clearly a difference in meaning. *Eat* in [a] refers to an activity the speaker cannot contemplate indulging in. *Eat* in [b] is to be read as 'eat and finish'. Note that the lexical content of the English verb *eat* allows the verb to occur in contexts where the verb denotes an activity or a completed event (as well as iterative, durative and inchoative contexts). In the [a] and [b] examples disambiguation of the possible aspectual interpretations of the sentences is dependent on the second sentence in the discourse. Compare now the sentences in [c-f]:

- c. *Stop talking and eat your dinner.*
- d. *Eat your dinner and then we can go out.*
- e. *Have you eaten your dinner?*
- f. *Have you eaten?/Did you eat already?*

Eat in [c] is clearly ambiguous. It may mean 'engage in eating rather than talking' or it may mean 'finish your dinner'. The latter interpretation is the only one possible for [d] since it is demanded by the following clause. The interpretation of sentence [e] as referring to a completed event (i.e. the dinner has been completely eaten) is provided by the fact that *eat* is in the perfect tense and it also has a direct object. Remove the direct object, as in [f] and the result is a question not about whether the eating has been completed but whether the addressee has indulged in the activity of eating. The American English version conveys this by means of the adverb *already*.

What about the verb *eat up*? I have tried to show that it cannot be related by ASPECT to *eat* and it cannot, therefore, be a perfective form of *eat*. If it were a perfective, encoding the notion of completion, how do we explain the following:

- g. *Stop talking and eat your dinner up.*
I am eating it up.
- h. *I can't eat (*up) all this pizza. It's too big.*

In [g] the reply *I am eating it up*, in the continuous present tense, clearly has a durative interpretation, which is not what one expects from a 'perfective' verb. In [h] the sentence clearly refers to the completion of the event, so we would expect a perfective verb to be in order here. Surprisingly, perhaps, *eat up* is not possible, at least for me.

In view of what I have shown we are forced to the conclusion that *eat* and *eat up* are not related by ASPECT, but are lexically different verbs. In precisely the same way, we regard the verbs *come* and *arrive* to be different verbs even though they have

some lexical overlap. It is not surprising, then, that certain contexts will allow either verb to occur, while other contexts allow one but not the other.

Returning now to the *ge-* verbs, Weick (1911) held the view that *ge-* was a perfectivising morpheme, and when he examined the Old English glosses of Latin texts he was forced to conclude that a substantial proportion of the OE verbs were in the wrong aspect: 'Das Simplex sollte stehen.' (Should be the simplex); 'Das Simplex ist einige Male belegt, aber sonderbarerweise immer an unrechter Stelle' (1911:49) (The simplex is attested, but oddly enough always in the wrong place).

We can safely conclude that there is no evidence that *ge-* is, or ever was, an aspectual marker in any of the Germanic languages. The last word can be given to Lindemann (1970:21), citing the Russian scholar Limar (1963:166):

There can only be one conclusion drawn from (the) data: Old English verbs, alone, taken out of context and not connected to any particular adverbs, can not be recognized as particular aspectual forms..... Neither can the verbal prefixes be in any way considered aspectual determiners.

To summarize what we have said so far about the meaning of verbal *ge-*: we cannot simply say that it was meaningless, it doesn't help much to say something like 'it adds emphasis or intensity', there is no evidence that its function was to create a transitive verb from an intransitive simplex, its function was not to 'perfectivize', and, finally, it had no aspectual function.

What did it mean, then?

2.4 *Ge-* as a Marker of PATH

2.4.1 On Verbs

I mentioned in 1.2 that a number of writers equated *ge-* in the old languages with the Latin prefixes *com-*, *con-*, and the preposition *cum*. This led them to suppose the *ge-* prefix meant something like 'together'. On the basis of his analysis of the old texts Lindemann concluded that (i) *ge-* never had the meaning 'together', and (ii) Latin *com-/con-* verbs were not necessarily translated by a *ge-* verb, (iii) *ge-* verbs and simplex

verbs could translate Latin verbs with other prefixes, notably *ad-*, which means 'to', 'toward', and (iv) it is wrong to equate the *ge-* prefix with the meaning *with* since the latter is a preposition.

Lindemann holds that both prefixes and prepositions developed from spatial adverbs. When an adverb became associated with a following noun and became a preposition it retained the concrete meaning of the original adverb; an adverb could also be associated with a verb. In this case adverb and verb became a lexical unit and the adverb, now a prefix, lost its original concrete meaning and served only to express an abstract relation. He explains what he means by relation as follows:

Expressing relations is admittedly the only concern of preverbs; and inasmuch as relations are abstractions of logic, only the terminology of logic can explain them. According to such terminology all relations have a *sense*, a direction in which a relation goes. If between two terms the relation goes both ways, is reversible, or reciprocal, that is, if *y* is related to *x* in the same way that *x* is related to *y*, then the sense is *symmetrical* ($| \leftrightarrow |$); if not, the sense is *asymmetrical*. If on the other hand the direction goes one way and can be *prolonged*, it is *transitive* (and imperfective) ($| \rightarrow$); if not it is *intransitive* (and *perfective*) ($| \rightarrow |$). These senses may be illustrated by the following prepositions: the relation expressed by *together* or *with* is symmetrical - transitive; by *on*, as in 'He staggered on' or *toward* is asymmetrical - transitive (and imperfective); by *to*, indicating arrival at a goal, as in 'He came to my house', is asymmetrical - intransitive (and perfective).

Lindemann (1970:36)³

The point is that all the Germanic prefixes in the old languages were asymmetrical, therefore both transitive and intransitive, both perfective and imperfective. This means that they could not have the symmetrical meaning conveyed by the preposition *cum* 'with'.

³ Lindemann here cites:

Stebbing, L.S. (1953) *A Modern Introduction to Logic*, London (pp.38, 111-15)

Brøndal, V. (1940) *Théorie des Prépositions*, Copenhagen (p.34)

Lindemann comes to the conclusion that the abstract or underlying meaning of *ge-* is to be formulated as follows:

[27] The meaning of *ge-*: the action expressed by any verb to which it is prefixed is directed toward some thing or in a direction forward and outward.

(Lindemann 1970:37)

It is noteworthy that the only writer who came anywhere near to this was Grimm. Grimm avoided saying anything about *ge-* meaning *with*, but formulated its meaning thus: 'Gegensatz ist *ab-*' (Its opposite is *off*.) To put this in our terms we can say:

[28] The *ge-*preverb signifies +PATH, (+GOAL).

We can now see how many of the previous writers were so puzzled. They recognised, frequently on the basis of relatively little data, that the prefixed verb sometimes had a perfective reading but could also describe action in progress, and that the prefixed verb sometimes had a direct object but not necessarily so. These apparent difficulties arose from their conviction that *ge-* could only have one function. It does, in fact, have one function, but it is a function that has a variety of effects. Furthermore there is not one single Modern English morpheme that can translate the abstract meaning of *ge-*; a whole range of morphemes is available depending on the lexical content of the verb: *at, on, to, toward, away, out, forth, up, down* etc.

2.4.1.1 The Latin counterpart of *ge-*

There still remains a significant problem. Recall that many writers have built their theories of the meaning of *ge-* on the idea that it equates with Latin *con-*, a reflex of the preposition *cum* (which undoubtedly means 'with') and have assumed a meaning for *con-* and *ge-* as 'with, together', and from this deriving the meaning 'fully, completely'. Latin verbs such as *convocare* 'convoke', 'call together' (from the simplex *vocare* 'to call') and *conuenire* 'assemble', 'come together' (from the simplex *uenire* 'to

come') do plausibly convey the idea of getting together with others. Recall, too, that Duden (1959) ascribes the ability of *ge-* to form collective nouns in German (*Berg/Gebirge* 'mountain'/'range of mountains' to the fact that *ge-* signifies *Vereinigung* 'union', 'coming together'. The problem is to accommodate such data in the theory that *ge-* = +PATH, (+GOAL).

Firstly, note that a verb such as *conuenire* 'assemble', 'come together' implies motion; the preposition *cum* 'with' describes a (symmetrical) state, which Lindemann represents as ($\leftrightarrow$). This means that *con-* can have nothing to do with *with, together*. In order to accommodate *con-* and its reflexes in other languages, I propose to extend Lindemann's diagrammatic representations of asymmetric PATH, (GOAL) ($|\rightarrow$) and ($|\rightarrow|$) to include three more, [18c, d, e]: The verbs in the righthand column are to be taken as merely illustrative of the type of verbs which typify the abstract diagrammatic representation in the lefthand column. +PATH, μ indicates that PATH is multi-directional.

[29]	a.	$\rightarrow $	+PATH, -GOAL	struggle on
	b.	$\rightarrow $	+PATH, +GOAL	spray the wall,
	c.	$\rightarrow \leftarrow$	+PATH, μ , +GOAL	assemble, come round, meet up
	d.	$\leftarrow $	+PATH, +SOURCE	escape, expel
	e.	$\leftarrow \rightarrow$	+PATH, μ , +SOURCE	disperse, disintegrate, fall down

The three additional abstract representations [c, d, e] are to be understood thus: [c] indicates motion from different directions towards a single goal; [d] indicates motion in one direction from a single source; [e] indicates motion in more than one direction from a single source. Clearly [d,e] are directional opposites of [a, b,c]. The Latin *con-* verbs are generally of the [c] type, i.e. +PATH, μ , +GOAL. I would also think it reasonable to suppose that [c], which contains the verbal notion of 'assembly', is the abstract feature which underlies the German collective nouns. Thus *ein Gebirge* is an assembly of individual mountains gathered in one place. While there is here no sense

of PATH there is a strong sense of 'place around which similar elements are located'. If this sounds doubtful, consider the antithesis of [c], which is [e]; disintegration is motion from a central assembly of similar elements.

We are now in a position to consider which verbal prefixes are the surface reflexes of the abstract PATH, (GOAL) feature. I give in [30] what I consider to be those surface reflexes for Latin, German, and Russian:

[30]		<u>Latin</u>	<u>German</u>	<u>Russian</u>
a.	→	<i>ad-, con-</i>	<i>ge-, be-, er-</i>	<i>v-, na-, do-, s-</i> etc.
b.	→	<i>ad-, con-</i>	<i>ge-, be-, er-</i>	<i>v-, na-, do-, s-</i> etc.
c.	→ ←	<i>con-</i>	<i>ge-</i>	<i>s-</i>
d.	←	<i>ab-</i>	<i>ent-</i>	<i>ot-, u-</i>
e.	←	<i>ex-,</i>	<i>ent-</i>	<i>vy-, iz-</i>
f.	← →	<i>ex-, dis-</i>	<i>ent-, zer-</i>	<i>raz-</i>

Note

- (i) +PATH, -GOAL [a] and +PATH, +GOAL [b] may be represented by the same prefixes for all three languages.
- (ii) One prefix for each language from [a, b] also conveys the idea of convergence to a goal [c]. Thus the prefixes *con-*, *ge-* and *s-* are surface realizations of three distinct abstract features, and are, then, three ways ambiguous.
- (iii) In all three languages a set of prefixes distinct from those in [a, b, c] represent the abstract antithesis of [a, b, c].
- (iv) [a, b, c] correspond to Grimm's 'Gegensatz zu *ab-*'. We can formulate the meaning of *con-* and *ge-* thus: +PATH, (μ), ±GOAL.

2.4.1.2 Latin *cum* as a prefix of [+PATH]

In order to see if this theory works let us look a little more closely at some Latin words prefixed by *con-* and see if we can dispense with the idea that *con-* translates

with. I give below some examples of English words which derive from Latin and for which the eminent philologist Skeat provides an etymological account. Skeat was one of those who held that *con* was a reflex of *cum* and therefore had to mean *with*. From *with* he derived *together* and the idea implied by 'fully', 'completely', 'very much'.

I give here some of Skeat's etymologies of Latinate English words. Note how he sometimes takes *con-* to mean 'with', yet at other times is obliged to resort to 'fully' or 'very much'. For each of Skeat's 'explanations' I give an English verb + particle rendering which I think comes closer to the meaning of the Latinate word. I use the symbol ↗ to emphasize the fact that the particle is +PATH. The examples are grouped [a], [b] and [c] according to the value of the PATH (GOAL) feature.

a. → | +PATH, -GOAL

'continue': Skeat: 'to persist in, extend, prolong'
 -L *continuare*, connect, unite, make continuous
 -L *continuuus* holding together, continuous
 -L *continere* hold together, contain
 -L *con-* for *cum* together, and *tenere* hold
 RM: 'continue' = 'go on↗', 'go along↗'

b. → | +PATH, +GOAL

'convince': Skeat: 'to convict, refute, persuade by argument'
 -L *conuincere*
 -L *con-*, for *cum*, with, thoroughly; and *uincere*, to conquer
 [i. 'convince' = 'conquer thoroughly'
 RM: 'win over↗'

'conduce': Skeat: 'to lead or tend to, help towards'
 -L *conducere*, to lead to, draw together towards
 -L *con-*, for *cum*, together, and *ducere*, to lead
 [ii. 'conduce' = 'lead toward'
 RM: or 'lead on↗'

'confiscate' Skeat: 'to adjudge to be forfeit'

-L *confiscatus*, pp. of *confiscare*, to lay by in a coffer or chest, transfer to the prince's privy purse

-L *con-*, for *cum*, together, and *fiscus*, a basket, bag, purse, the imperial treasury

[iii. 'confiscate' = 'lay by (in a basket), put away (in a basket)']

RM: Yes, 'lay by', 'put away' but no sense of *with* or *together*

'conflict' Skeat: 'a fight, battle'

-L *conflictus*, a striking together, a battle

-L *conflictare*, frequentative of *confligere*, to strike together, afflict, vex

-L *con-*, for *cum*, together, and *fligere*, strike

[iv. 'conflict' = 'a striking together']

RM: 'a striking out', 'a strike at the enemy', 'a dust up'

'congratulate' Skeat: 'to wish all joy to'

-L *congratulatus*, pp. of *congratulari*, to wish much joy

-L *con-* from *cum*, with, very much, and *gratulari*, to wish joy

RM: I confess to being unable to find an appropriate verb + particle, but the sense is clearly PATH, which is conveyed by the preposition *to* in 'wish joy to'.

'convoke' Skeat: 'to call together'

-L *conuocare*

-L *con-* for *cum*, together, and *uocare* call

RM: 'call up'

c. → | ← +PATH, μ , +GOAL

'condense': Skeat: 'to make dense, compress'

F *condenser* -L *condensare*

-L *con-*, for *cum*, together, and *densare*, to thicken

[v. 'condense' = 'thicken together' ?

RM: 'thicken up↗', 'thicken out↗'

'congeal' Skeat: 'to solidify by cold'

-L *congelare*, cause to freeze together

-L *con-* for *cum*, together, and *gelare*, freeze

[31] 'freeze together'

RM: 'freeze up↗'

'confect': Skeat: 'to make up, especially to make up into confections or
sweetmeats

-L *confectus*, pp. of *conficere*, to make up, put together

-L *con-*, for *cum*, together, and *facere*, to make

[i. 'confect' = 'make up', 'put together'

RM: 'make up↗', not 'put together'

2.4.1.3 German *ge-* and English [+PATH] particles

Returning now to the German *ge-*verbs, which we have decided originally bore the feature + PATH, we note that they can, at least in some cases, be paraphrased by a PATH particle or preposition. I give some examples, and as with the Latinate English verbs, I indicate the PATH (GOAL) group to which I allocate them. The second column gives the (most usual) translation of the German verb; the third column gives my paraphrase.

[32] → | +PATH, -GOAL

<i>gedeihen</i>	thrive	get on
<i>geleiten</i>	escort	lead on

[33] → | +PATH, +GOAL

<i>gebären</i>	give birth	bear forth
<i>gedenken</i>	remember	think on
<i>gehörchen</i>	obey	hearken unto
<i>genesen</i>	recuperate	come round
<i>genießen</i>	enjoy	take to
<i>geraten</i>	turn out	turn out
<i>gereichen</i>	redound	turn out
<i>gelingen</i>	succeed	turn out well
<i>gestalten</i>	arrange	fix up

[34] → | ← +PATH, μ , +GOAL

<i>gerinnen</i>	coagulate	thicken up
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2.4.2 *Ge-* on Nouns and Adjectives

Now that we have seen that *ge-* on verbs was an indicator of PATH, I turn briefly to the nouns and adjectives in Modern German which have the *ge-* prefix. I think it is possible to accommodate these in the schema I have adopted for the verbs.

2.4.2.1 *Ge-* on Nouns

Recall that there are two classes of nouns in Modern German of the type [_N*ge*-[_VX]-*(e)*]. In those cases where X is a verb stem, the derived noun generally has durative meaning: from *tosen* 'thunder', 'rage' is derived *Getöse* 'din', 'racket'; from *quaken* 'croak' is derived *Gequake* 'croaking', also *Gequäke* 'whining' (of a child). Perhaps we

can compare the effect of the *ge-* in the German nouns with the construction in English with nouns like *goings on*, *carrying on*, where the preposition seems to indicate a continuing state. In those cases where X is a noun, the derived noun is a collective noun; thus from *Berg* 'mountain' is derived *Gebirge* 'range of mountains'.

I suggest that these two types of nominalization are possible because of the PATH feature on *ge-*, and that they correspond respectively to [a] and [c] of the verb schema:

- [35] a. $\rightarrow |$ +PATH, -GOAL = durative
 c. $\rightarrow | \leftarrow$ +PATH- μ , +GOAL = collective

2.4.2.2 *Ge- on Adjectives*

I suggest that adjectives of the form [*Age*-[*NX*]-*t*], such as *ge-harnisch-t* 'armoured', 'wearing armour'; *ge-stiefel-t* 'wearing boots' belong with [b] of the verb schema:

- [36] b. $\rightarrow |$ +PATH, +GOAL

These adjectives are essentially defective *be-*prefixed verbs. In Chapters 3 and 4 I show that there is a class of *be-*verbs which incorporate a noun argument. The general sense of these verbs is "transfer the incorporated noun to the direct object", hence the feature +PATH, +GOAL. The past participle of the verb *beflaggen* 'decorate with flags' gives rise to an attributive adjective *beflaggt-* 'decorated with flags'.

- [37] a. *Sie beflaggten das Schiff.*
 'They be-flagged the ship.'
 b. *ein beflaggtes Schiff*
 a beflagged ship
 'a ship decorated with flags'

The same sense of transfer is observable in the *ge-* adjectives, despite the fact that there is no corresponding verb:

[38] a. **Sie ge-harnisch-ten den Ritter.*

They armoured the knight.'

b. *ein ge-harnischt-er Ritter*

a ge-armour-ed knight

'a knight in armour'

2.5 The Etymology of Ge-

At this point some thoughts about the derivation of the prefixes which we have been considering will be pertinent. It is known that Latin *con-* is not cognate with Germanic *ge-* (at least not clearly so), although these two prefixes have a similar distribution in the two languages and are often to be equated with each other. The prefix *ge-* derives from the Proto-Germanic **gho-*. It is not clear what the etymological relationship is between **gho-* and Latin *con-*. Latin *con-* is a reflex of IE **kō*, **kom*, however, and is cognate with Old Slavonic (OS) **s-* and **s"n* and *z* 'to' in Armenian (the latter two languages are *satem* languages). OS *s-* and *s"n-* derive from a deictic morpheme, originally a demonstrative. OS **s-* came to be associated with demonstratives, interrogatives (i.e. *wh*-words) and deictic adverbials; **s"n* became a preposition and verbal prefix (Xaburgaev 1971).

According to the principles of the first soundshift Latin *con-* and OS *s-* and *s"n-* are cognate with the deictic morpheme *h-* on adverbials, and demonstratives in Germanic languages. This morpheme can be seen in such words as German *hin-* 'thither', *hier* 'here', *her* 'hence', *heint* 'tonight', *heute* 'today', *heuer* 'this year'. Russian has similar survivals of its *s-* morpheme: *sjudā* 'hither', *sejčas* 'now' (this hour), *segodnja* 'today' (of-this day). The modern Russian preposition *s-* has two unrelated meanings which are differentiated by the case the preposition governs: *s-* + genitive has the meaning 'off', whereas *s-* + instrumental has the meaning 'with, accompanied by'. This etymological relationship suggests that we can establish certain correspondences between the Latin prefix *con-*, the preposition *cum* and the related prefix and preposition in Russian. In TABLE III below I show the correspondences between

prefix, postverbal particle and preposition in Latin, German and Russian. I include the German forms *ge-* and the preposition *gegen* 'against', but, since they are not direct cognates of the other elements in the table, I place them in brackets.

IE *ko, *kom									
< Latin *k...			< German h...			< Russian s...			
prefix	prtcle	P	prefix	prtcle	P	prefix	prtcle	P	
+PATH	con-		(ge-)	hin	(gegen)	s-			s + G
-PATH		cum							s + I.

TABLE III

Note that Latin and Russian typically do not have postverbal particles. Postverbal particles are an archetype of the Germanic languages. Note, too, that only Latin *cum* and Russian *s* + instrumental (both with the meaning 'with, accompanied by') are -PATH; all the other entries are + PATH (+GOAL).

2.6 Preverb and postverb as different systems

When we compare the verbal systems of Old English and Modern English it is striking that OE had an overwhelmingly preverb system, i.e. when it needed to derive a verb with a PATH feature from its stock of verbs, it did so by means of a PATH prefix. Modern English, on the other hand, derives new verbs from its Germanic stock by means of particles, and not by prefixation. (I discount prefixes such as *re-*, *mis-*, *over-*, which have lexical content and no PATH feature.) English has replaced the old preverb system and has developed the particle system. We assume that English preverbs lost their force at some stage and became redundant. Thus, English has lost the *be-* prefix, which allowed the Locative Alternation, but has nevertheless retained Locative Alternation. The simplex verb may be ±PATH.

The disintegration of the preverb system can be seen in Old Norse. The *ge-* preverb was lost before written literature appeared, and survived only as a relic (Lindemann 1970:30). The reason for the disappearance of *ge-* was that it had to compete with eleven other preverbs, and lost. Finally only one of these preverbs survived, namely *of-*. Kuhn (1924:99) states that these preverbs were practically equal in meaning and could perform virtually identical functions. Now that we know that the abstract meaning of the *ge-* preverb was PATH, we might suppose that this PATH feature was at the heart of the Germanic preverb system as such, and that because these preverbs were not lexical but denoted an abstract feature, they were barely differentiated from each other.

It is notable, too, that the preverbs are not constant across the Germanic dialects. While German has *g(e)lauben*, English has *believe*; compare Dutch *vertaling*, German *Erzählung* and the prefixless English *tale*.

Modern German, like English, has developed a rich and fully productive particle system, but, unlike English, has not completely relinquished the old preverb system. In fact the preverbs *be-*, *er-*, *ver-* have become surprisingly productive in the modern language.

CHAPTER 3

CLASSIFYING THE *BE*-VERBS

IN THE FIGURE/GROUND SCHEMA

In Chapter 1 I showed how previous attempts to classify the prefixed verbs in German fall short of success. The main problem seems to be that preliminary classifications based on transitivity, or whether *be*-verbs have simplex counterparts, or whether *be*-verbs have particle-verb counterparts, reveal little that is insightful or predictive about the behaviour of the prefixed verbs. For example, if we set up a class of *be*-verbs that have simplex counterparts (*sehen/besehen* 'see/examine'), how do we then compare this class with another class of denominal *be*-verbs (*bewaffnen* 'be-weapon, arm')? The fact that there is a class of simplex/*be*-verb pairs like *sehen/besehen* does not predict anything about a class of denominal *be*-verbs like *bewaffnen*.

I will develop a more revealing classification of *be*-verbs based on the concepts of Figure and Ground as proposed by Talmy (1978). Before I do so, let me illustrate what I consider to be key factors at the centre of the problem of the *be*-verbs.

3.1 Prepositions and *be*-verbs

Note firstly that the intransitive German verbs *antworten* 'answer' and *siegen* 'be victorious' can take a PP complement, but not a direct object.

- [1] a. *Er antwortete auf den Brief*_{ACC}.

he answered on the letter

'He answered the letter.'

**Er antwortete den Brief*_{ACC}.

he answered the letter

- b. *Er siegte über seine Feinde*_{ACC}.
 he was-victorious over his enemies
 'He conquered his enemies.'
 **Er siegte seine Feinde*_{ACC}.
 he conquered his enemies

In [1a] the intransitive verb *antwortete* requires the preposition *auf*, which in turn requires the accusative case on the noun phrase *den Brief*¹. In [1b] the verb *siegte* requires the preposition *über* and a following noun phrase in the accusative case, *seine Feinde*.

The sentences in [1] have an alternative realization.

- [2] a. *Er beantwortete (*auf) den Brief*_{ACC}.
 he answered on the letter
 'He answered the letter.'
- b. *Er bestiegte (*über) seine Feinde*_{ACC}.
 he *be*-was-victorious over his enemies
 'He conquered his enemies.'

The examples in [2] differ from those in [1] in that they contain a verb with the prefix *be-*, and the prepositions that are obligatory in [1] are ungrammatical in [2]. I conclude from the evidence in [1] and [2] that there is an alternation between the *be*-prefix and the preposition.

A similar alternation between the *be*- prefix and a preposition is shown in [3]. The sentences in [3] have two arguments in the VP. They are examples of the familiar Locative Alternation. (See Fraser (1971), Anderson (1971), Schwartz-Norman (1976),

¹ I use 'transitive' to describe verbs which take an accusative object and 'intransitive' for verbs which take a PP complement or NP complement in an oblique case, or no complement.

Anderson, J. M. (1977), Hook (1983), Jeffries and Willis (1984), Jackendoff (1990, 1996), Brinkmann (1995, 1997), Pesetsky (1995).)

[3] a. *Er lud Stroh auf den Wagen.*

'He loaded straw on the cart.'

Er belud den Wagen mit Stroh.

he *be*-loaded the cart with straw

'He loaded the cart with straw.'

b. *Er hängte Bilder an die Wand.*

'He hung pictures on the wall.'

Er behängte die Wand mit Bildern.

he *be*-hung the wall with pictures

'He hung pictures on the wall.'

c. *Er warf Steine auf die Mädchen.*

'He threw stones at the girls.'

Er bewarf die Mädchen mit Steinen.

he *be*-threw the girls with stones

'He threw stones at the girls.'

The sentence pairs in [3] differ from the pairs in [1] and [2] in that, whereas the verbs in [1] are intransitive, in [3] both the simple, unprefixated verb and the *be*-verb are transitive. We can, however, relate the sentences in [1] and [2] with those in [3] in a simple manner. The simplex verbs in [4a] have a VP-internal PP, the head of which is

a location preposition *auf* 'on' or *an* 'at'. The *be*-prefixed verbs in [4b] have as direct object the NP that is the sister to the location P in [4a].

- [4] a. *Er antwortete* $\emptyset$ *auf den Brief.*
 Er hängte *die Bilder* *an die Wand.*
- b. *Er beantwortete* *den Brief* $\emptyset$.
 Er behängte *die Wand* *mit Bildern.*

We see that, rather than changing the transitivity value of a verb, the *be*-prefix alters the syntactic representation of the argument structure of the sentence; the sister of the location P is the complement of the *be*-prefixed verb. Arguments in a VP may surface as accusative objects or as complements to a preposition. Note that there is no semantic difference between the sentences in [1] with the simple verb and those in [2] with the prefixed form².

In order to account for the difference in surface syntax it will be necessary to adopt a theory which offers an explanation of the difference between two types of arguments in the VP.

3.2 Figure and Ground

The sentences in [3] all contain three arguments; the subject in each case is the Agent, the other two arguments appearing either as accusative objects or in a PP. Talmy (1978) analyses the arguments in sentences where 'one physical object (is) moving or (is) located with respect to another' (1978; 627) as being either Figure (F) or Ground (G).

² This is not to say that there are no cases where there is a semantic difference between a simple verb and its *be*-form. However the usual case is as stated in the text.

[5] Figure and Ground (Talmy (1978:627))

(a) The Figure object is a moving or conceptually movable point whose path or site is conceived as a variable the particular value of which is the salient issue.

(b) The Ground object is a reference-point, having a stationary setting within a reference frame, with respect to which the Figure's path or site receives characterization.

3.2.1 *Arguments for Talmy's Figure/Ground hypothesis*3.2.1.1 *Inherent and deictic reference*

It strikes me that, there is no real difference between claiming that the Ground is a frame of reference for the Figure in the world of perception and claiming that deictic expressions need a frame of reference in order to be interpretable. It is well known that there are deictic words and phrases, the interpretation of which depends on there being a frame of reference called the deictic centre (Fillmore 1982), (Clark 1973), (Tanz 1980). For example, the phrase *on the left* depends for its interpretation on there being a deictic centre: we need to know on whose left.³

³ Similarly, Zubin and Choi (1984) observe that adjectives such as *straight* and *crooked* have different meanings depending on the frame of reference. Their terms for the two frames of reference are *gestalt* and *orientation*.

a. *gestalt*



straight



crooked

b. *orientation*



straight



crooked

If the reference frame is a *gestalt* schema, the terms *straight* and *crooked* specify whether the *gestalt* is a good or poor *gestalt* (e.g. a straight or crooked pencil). If the reference frame is an *orientation* schema, the terms specify whether the object is well or poorly lined up with the reference frame (e.g. a vertically straight telegraph pole or a telegraph pole that leans).

3.2.1.1 The cognitive basis for the Figure/Ground distinction

Talmy attributes his terms Figure and Ground to Gestalt psychology. Let me briefly give Talmy's arguments for the linguistic relevance of the thesis.

Talmy notes that the two sentences in [6] are not synonymous.

- [6] a. *The bike is near the house.*
 b *?The house is near the bike.*

Talmy (1978:628)

Talmy argues that:

...where one might expect (them) to be synonymous on the grounds that they represent the two inverse forms of a symmetric relation, they in fact do not mean the same thing. They *would* be synonymous if they specified *only* this symmetric relation - i.e. here, the quantity of distance between two objects. But in addition to this [a] makes the non-symmetric specifications that, of the two objects, one (the house) has a set location within a framework (here, implicitly, the neighbourhood, world etc.) and is to be used as a reference-point by which to characterize the other object's (the bike's) location.

(ibid.:628)

It is now clear why [6b] is unusual: in the real world bikes are not usually the reference point for the location of houses. This does not mean that [6b] is always a doubtful sentence in English. If the bike had been, say, fitted with a bomb that was intended to demolish the house and its occupants, then the authorities might well decide to evacuate the house on the grounds that *The house is near the bike*, as stated in [6b]. In this case, of course, the house (even though it is the larger, more permanent entity) is the Figure, and the bike is the Ground.

The difference between a gestalt schema and an orientation schema may be reflected in the lexicon. Although English makes no lexical distinction between [a] and [b], Zubin and Choi point out that Korean has different words for *straight* and *crooked* according to whether they are in [a] or [b].

It seems to be a rule of language that, if there is a Figure/Ground relationship between two entities, then the Ground is identified by a locative feature. I will maintain that in the canonical case the Ground is in a locative PP. It is simply not possible in English to have the Figure in a locative PP. English has no preposition that can make [7b] grammatical.

- [7] a. [Figure Verb P [+LOC] Ground]
 b. *[Ground Verb P [+LOC] Figure]

Let me illustrate with some concrete examples: [8b] is not synonymous with [8a], and English has no preposition such that [8c] means the same as [8a].

- [8] a. *The chair^F is on the table^G.*
 b. *The table^F is under the chair^G.*
 c. **The table^G is P the chair^F.*

The lack of a preposition (in English) for making [8c] a grammatical sentence suggests strongly that language imposes structure on its speakers.⁴

⁴ Talmy (1978:632) develops the idea of the spatial relationship between Figure and Ground in the realm of nouns to the relationship between clauses in complex sentences. In a complex sentence two events are related as 'assertion' and 'presupposition'. Talmy gives the examples in (i).

- (i) a. *He exploded after he touched the button.*
 b. *He touched the button before he exploded.*

(Talmy 1978:632)

Sentence (i)a, according to Talmy, assigns a Ground interpretation to the button-touching event, setting it up as a fixed, known reference point, and assigns a Figure interpretation to the explosion event, establishing its location in time with respect to the button-touching event (1978:633).

The sentence in (i)b is as marked as *The house is near the bike* and is plausible only in certain limited circumstances, such as an official enquiry into the causes of the victim's death. Talmy notes: 'Even when a speaker does not want to assert anything about relative referencing, language inescapably *imposes* that semantic addition upon a basic proposition in formulations like the preceding' (Talmy's emphasis) (1981:629).

3.2.1.2 Perception and language

Bierwisch (1963) observes:

There are good reasons to believe that the semantic markers in an adequate description of a natural world do not represent properties of the surrounding world in the broadest sense, but rather certain *deep-seated, innate properties of the human organism and the perceptual apparatus* (my emphasis), properties which determine the way in which the world is conceived, adapted and worked on.

Bierwisch (1967:3)

It is my view that Talmy's Figure/Ground distinction is one such 'deep-seated innate property' of the human mind in the sense of Bierwisch.

In similar vein Bickerton (1981), writing on creole languages, puts forward the hypothesis that children are genetically endowed with an 'adaptive evolutionary device' that he calls the 'bioprogram' (1981:144). This bioprogram is not to be equated with Universal Grammar as propounded by Chomsky, since the bioprogram makes further claims about the semantic or interpretive functions of some very basic syntactic configurations.

In (ii) the main clause of both sentences constitutes the Figure, while the adjunct clauses constitute the Ground. Note that the sentences are essentially synonymous. In the context of 'one thing happening and then another thing happening' English has the conjunctions *before* and *after* that allow both events to be the Figure or the Ground.

- (ii) a. She departed after he arrived.
 §b. He arrived before she departed.

This not the case in the following example. The semantics of *until* impose a Figure/Ground relationship on the clauses; in (iii) there is no conjunction in English that can take the place of the underlined words in (iii)b to give the same meaning as in (iii)a.

- (iii) a. She slept until he arrived.
 §b. *He arrived immediately-(and causally)-before-the-end-of her sleeping.

(Talmy 1978: 637)

In similar vein, Emonds observes that:

... the characteristic sentence types of a language inevitably reflect principles and restrictions of universal syntax; lexical entries, no matter how varied the intrinsic meanings of morphemes, are consistently forced into a few syntactic molds.

(1993:242)

Bickerton observes that creole languages, widely dispersed throughout the world, tend to exhibit certain similar structures that they cannot have acquired as input from their parents.

If, as we shall see is the case, the things that [creole] children learn early, effortlessly and errorlessly turn out repeatedly to be key features of creole languages, which the children of first creole generations acquire in the absence of direct experience, we can then assume that such early, effortless, and errorless learning results ... from the functioning of the innate bioprogram.

(Bickerton 1981:146)

Bickerton isolates four specific examples of 'early, effortless, and errorless learning' by creole-speaking children, viz. a specific-nonspecific distinction, a state-process distinction, a punctual-nonpunctual activity distinction, and a causative-noncausative distinction.

Creole languages exhibit a distinction between punctual and non-punctual events. 'Nonpunctuals represent the marked case ... in the real world, more actions are punctual than nonpunctual; punctual actions *constitute the background against which* (my emphasis) nonpunctual actions stand out' (Bickerton 1981:180).⁵ Bickerton (1981:166) cites Bronckart and Sinclair (1973): 'The distinction between perfective and imperfective events seems to be of more importance than the temporal relation between action and the moment of enunciation'.⁶

Now, it seems to me that a conceptual distinction between punctual and non-punctual events, in which one type of event serves as the background against which the other type of event stands out, is in all essentials the same sort of phe-

⁵ I wonder whether Bickerton has got this the right way round; I would have thought that non-punctual, i.e. durative events constitute the background against which the punctual events take place. Thus in (i) the background is provided by *reading*:

(i) *While I was reading, the door opened and Tom came in.*

⁶ The Aspect Before Tense Hypothesis of Antinucci and Miller (1976) has been much debated by acquisitionists, and is certainly not received opinion. For a discussion of the literature and the issues involved see Bohnacker (1998:ch.3).

nomenon as the Figure/Ground distinction whether between arguments, or in relation to the embedding of clauses in complex sentences. If there are still linguists who baulk at the idea that there are connections between human language and human cognition, let me once more cite Bickerton:

In addition to whatever we may have in the way of innate language equipment, we also have a wide variety of learning strategies and problem-solving routines which are applicable to a range of situations far broader than language. It would be absurd to suppose that in the presence of data classified as 'linguistic', all these routines and strategies are simply switched off.

(Bickerton 1981:144)

See also Lyons (1977:II,718-724) for arguments that spatial organization is of central importance in human cognition and that this is reflected in language (his 'Localism').

Why do I choose the terms Figure and Ground rather than other terms that have found their way into the literature, such as Goal/Location and Theme (Jackendoff 1972:ch.1 and 2), Locatum and Goal (Rappaport and Levin 1988), or Theme/Goal and Theme/Locatum (Anderson, J. M. 1977), (Brinkmann 1995), or Mat(erial) and Loc(ation) (Mulder 1992a)? The reason is that the Figure/Ground distinction as proposed by Talmy has wider significance and application than terms such as Locatum, Material and Goal seem to suggest. I think, too, that Figure and Ground are preferable to Talmy's alternative terms (1981:628) 'variable element' for Figure and 'reference element' for Ground.

3.2.2 *Figure and Ground in the Locative Alternation*

Returning now to the sentence pairs in [3], and applying the Figure/Ground distinction to the VP-internal arguments, we find the following:

- [9] a. *Er lud Stroh (F) auf den Wagen (G).*
 'He loaded straw on the cart.'

Er belud den Wagen (G) mit Stroh (F).

he *be*-loaded the cart with straw

'He loaded the cart with straw.'

b. *Er hängte Bilder (F) an die Wand (G).*

'He hung pictures on the wall.'

Er behängte die Wand (G) mit Bildern (F).

he *be*-hung the wall with pictures

c. *Er warf Steine (F) auf die Mädchen (G).*

'He threw stones on (= at) the girls.'

Er bewarf die Mädchen (G) mit Steinen (F).

he *be*-threw the girls with stones

The hay, the pictures and the stones are the objects moving (in this case) with respect to the stationary reference points of cart, wall and girls. It is now clear that, in these sentences, the function of the *be*-prefix is to focus attention on the Ground by allowing the verb to take the Ground as its direct object in the accusative case.

3.2.3 The [+PATH] feature

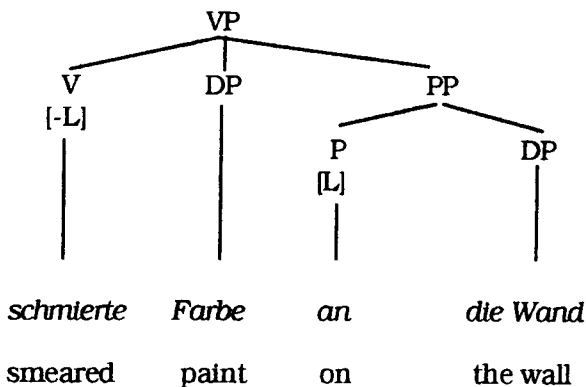
The assumption that I make in this thesis is that the German *be*-prefix carries a syntactic feature ($\pm\Omega$), which is missing on the simple, prefixless verb. The accusative objects of both simple and prefixed verbs are in complementary distribution with prepositional phrases, i.e. the accusative object of the simplex verb is the same argument as the complement of the preposition *mit* 'with' in the VP headed by the corresponding *be*-verb; and the accusative object of the *be*-verb is the same argument as the complement of the location preposition in the VP headed by the corresponding simplex verb.

This means that we would expect that these PPs, too, are marked as being ($\pm\Omega$). The PPs in the sentence pairs so far considered differ in one crucial respect: if they constitute the Ground the PP encodes the idea of motion towards the Ground (*auf den Wagen*_{ACC} 'onto the cart'; *an die Wand*_{ACC} 'onto the wall'; *auf die Mädchen*_{ACC} 'onto the girls'), if they constitute the Figure the PP encodes a non-locational adverbial (*mit Heu*_{DAT} 'with hay'; *mit Farbe*_{DAT} 'with paint'; *mit Steinen*_{DAT} 'with stones'). It is the opposition of locational and nonlocational PPs that plays a crucial role in the sentences in [1] to [5]. We take the feature ($\pm\Omega$), whether it appears on the preposition or the verb, to be [$\pm$ LOCATION] ($\pm$ L).

This is in line with Emonds' (1991) analysis of English thematic verbs (verbs having a theta role of theme)⁷. He adopts Talmy's Figure and Ground framework and proposes that thematic verbs carry a [$\pm$ LOCATION] feature and that [+LOCATION] is further divided into [$\pm$ GOAL]. Emonds observes (1991: 394) that in the unmarked case the Figure is the subject of an intransitive verb and the object of an agentive transitive verb and that the Ground, in the unmarked case, is in the form of an adposition P and its syntactic object NP. However, the Ground may appear as object of the verb, in which case PATH is realized not by a PP but as a direct object NP.

Emonds illustrates the contrast with *smear paint on the wall* versus *smear the wall with paint* (1991:397). I give his analysis of their structures in [14] with the German equivalent.

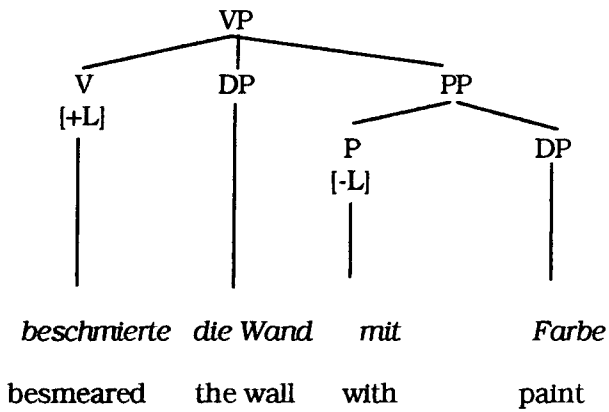
[10] a.



7 Emonds deals with 'verbs of physical or psychological motion, location, ownership or communication'.

He calls these 'thematic verbs' without implying that there are non-thematic verbs. (1991: 392)

b.



We can see how this operates with the sentences in [5], here repeated with the addition of the feature value on V and P.

- [11] a. *Er* ^{-L}*hängte* *Bilder* (F) ^{+L}*an* *die Wand* (G).
'He hung pictures on the wall.'
- b. *Er* ^{+L}*behängte* *die Wand* (G) ^{-L}*mit* *Bildern* (F).
'He *be*-hung the wall with pictures.'
- c. *Er* ^{-L}*warf* *Steine* (F) ^{+L}*auf* *die Mädchen* (G).
'He threw stones on the girls.'
- d. *Er* ^{+L}*bewarf* *die Mädchen* (G) ^{-L}*mit* *Steinen* (F).
'He *be*-threw the girls with stones.'

In the sentences we have seen so far the Ground and Figure arguments have both been in the VP. Can they occur elsewhere? Emonds stipulates that (for English) the Figure (always distinct from the Ground) may occur in any argument position:

- [12] Figure specification: For any lexical $[X^0, +T]$, exactly one Figure NP, distinct from the Ground, must be present among the deep structure arguments of X^0 .

(1991:395)

This stipulation allows the Figure to appear as subject. Ground Specification stipulates where the Ground may occur:

- [13] Ground specification: A direct object NP of a transitive Y^0 is a Ground iff Y^0 is +LOCATION.

(ibid. 397)

While the present study confirms the essential correctness of the interplay between Talmy's Figure and Ground arguments and Emonds' LOCATION feature on a range of English verb alternations, its main purpose is to present a full analysis of the syntax of *be*-prefixed verbs in German and how they interact with non-prefixed verbs. We will see from the data presented that the syntactic realizations of Ground and Figure are more complex than Emonds' principles in [12] and [13] suggest.

3.3 The verb classes

This section presents a classification of *be*-verbs and their non-prefixed (simple) forms in German according to the syntactic distribution of Figure and Ground. Figure Specification and Ground Specification in [12] and [13] allow the following syntactic distributions of Figure and Ground.

- (i). Both Figure and Ground may be realized in the VP of both a *be*-verb and a simple verb.
- (ii). The Figure may be the subject of a simple verb or a *be*-verb.
- (iii). The Ground may be the subject of a simple verb, but not of a *be*-verb.

The essence of (i) to (iii) above is simply stated as follows, and constitutes the central result of this chapter:

- [14] Ground Specification for *be*-verbs

The direct object of a *be*-verb, and only of a *be*-verb, must be the Ground.

For the moment I leave [14] as a stipulation. In Chapters 7 and 9 I will provide an explanation for the reason behind it.

In addition to (i) to (iii) above there are two further possible ways in which Figure and Ground can be realized elsewhere than as one of the NP arguments of the verb, viz. the Figure or the Ground may realized in the verb itself. At first sight this seems to run counter to common sense and the whole Figure/Ground hypothesis, which is about the relationship of one object (in the physical sense) to another. It also violates Emonds' Figure Specification, which specifically stipulates that the Figure must be a NP. (I assume, although it is not explicitly stated, that he also means that the Ground must be realized as a NP.)

However, I maintain that both Figure and Ground may be incorporated in the verb. For the moment I will postpone formalization of what I mean by the term 'incorporation' until Chapter 4.

Consider the following English examples, where the verbs are both derived from nouns:

- [15] a. *John watered the plants.*
 b. *Peter garaged the car.*

An interpretation of [15a] as 'put water (F) onto the plants (G)' is fully consistent with the semantic-cognitive basis of Talmy's Figure/Ground theory. Equally clearly in [15b] the Agent (John) puts the car (F) into the garage (G). Thus, in [15a] it is the Figure that is incorporated into the verb, while in [15b] it appears that the Ground is incorporated.

With incorporation of Figure and Ground in the verb we have two more sentence types:

- (iv). The Figure may be incorporated in the verb.
 (v). The Ground may be incorporated in the verb.

In fact, however, German does not have the simple verb equivalents of English *garage*_V or *water*_V. It seems to be the case in German that only a prefixed verb can incorporate a noun. Why this should be I will discuss in (4.4.3). The sentence types that I have described in (i) to (v) allow us to make a classification of *be*-verbs and their simplex counterparts (if a simplex counterpart exists) based on the distribution of the Figure and Ground arguments.

CLASS I: comprises *be*-verbs and simplex verbs that have Figure and Ground in the VP. The fact that both Figure and Ground are in the VP means necessarily that the subject of the verb must be an Agent argument.

CLASS II: comprises *be*-verbs and simplex verbs that have the Figure as subject.

CLASS III: comprises simplex verbs that have the Ground as subject. Note that, in accordance with Ground Specification for *be*-verbs [14], there can be no *be*-verbs in this Class.

CLASS IV: comprises verbs that incorporate a Figure argument. The verb is necessarily a *be*-verb according to [iv] above.

CLASS V: comprises verbs that incorporate the Ground. This Class is ruled out for German, since the Ground argument cannot be incorporated by a *be*-verb.

The five sentence types that I have described are shown in schematic form in TABLE I; the asymmetries in the table are precisely those predicted by the generalization in [14].

	SUBJECT	VERB	DIR.	PP
CLASS I a	Agent	be-V	OBJECT	Figure
b	Agent	simple	Figure	Ground
CLASS II a	Figure	be-V	Ground	
b	Figure	simple		Ground
CLASS III a	Ground	simple	Figure	
b	Ground	simple		Figure
CLASS IV	Agent	be-V+F	Ground	
CLASS V	Agent	simple+G	Figure	

TABLE I.

The next section presents an analysis of the five sentence types and the verbs that appear in them.

3.3.1 The five classes of be-verbs

CLASS I

These are the verbs that we have already seen in [5]. The *be*-prefix is affixed to an already existing simple verb. The *be*-prefix in this class of verbs is productive and has given rise to a large number of pairs in which the simple verb, if transitive, has the Figure as direct object and the affixed verb has the Ground as direct object.

Further examples of Class I verb pairs:

- [16] a. *Er bebaute das Gelände (G) mit Häusern (F).*
he *be*-built the site with houses
'He built houses on the site.'
Er baute Häuser (F) auf dem Gelände (G).
'He built houses on the site.'
- b. *Er beschüttete die Straße (G) mit Sand (F).*

he *be*-poured the road with sand

'He poured sand on the road.'

Er schüttete Sand (F) auf die Straße (G).

'He poured sand on the road.'

- c. *Er beschenkte seine Freundin (G) mit einem Bild (F).*

he *be*-gave his girlfriend with a picture

'He presented his girlfriend with a picture.'

Er schenkte seiner Freundin (G) ein Bild (F).

'He gave his girlfriend a picture.'

CLASS II

The *be*-verbs in this class are formed from simple verbs, as in CLASS I. However, the Figure is the subject of both verbs. The Ground is the object of the *be*-verb or in the PP complement of the simple verb.

- [17] a. *Die Kerzen (F) beleuchteten den Saal (G).*

the candles *be*-shone the hall

'The candles illuminated the hall.'

Die Kerzen (F) leuchteten im Saal (G).

'The candles shone in the hall.'

- b. *Er (F) belächelte mein Einkommen (G).*

he *be*-smiled my income

'He sneered at my income.'

Er (F) lächelte über mein Einkommen (G).

'He smiled about (=at) my income.'

- c. *Ich (F) bekniete meinen Freund (G).*
 I be-kneed my friend
 'I implored my friend.'
Ich (F) kniete vor meinem Freund (G).
 'I knelt before my friend.'
- d. *Viele Sorgen (F) belasteten meinen Freund (G).*
 many worries be-burdened my friend
 'Many worries burdened my friend.'
Viele Sorgen (F) lasteten auf meinem Freund (G).
 many worries burdened on my friend
 'Many worries troubled my friend.'
- e. *Er (F) bekam eine gute Idee (G).*
 he be-came a good idea⁸
 'He had a good idea.'
Er (F) kam auf eine gute Idee (G).
 he came on a good idea
 'He hit on a good idea.'

A further difference between CLASS I and CLASS II verbs is that the former have an obligatory Agent (A) subject, whereas the latter has an optional Agent subject.

⁸ Although cognates, German *bekommen* and English *become* have developed along different paths. The first is a Class II verb with the Ground as object; the second is an unaccusative. Both languages also have an unaccusative verb with a similar meaning.

(i) *Your behaviour doesn't become you.* (= is not fitting)

(ii) *Bohnen bekommen mir nicht.*

beans become me not

'Beans don't agree with me.'

(= are not good for me)



Compare [17d], where the Figure subject (*viele Sorgen*) is not the Agent, with [18], where the animate subject is the Agent and the Figure appears in the PP.

- [18] *Ich (A) belastete meinen Freund (G) mit Sorgen.*
 I be-burdened my friend with worries
 'I burdened my friend with worries.'

The verb *belasten* in [18] at first sight looks to be a CLASS I verb in contrast to the CLASS II verbs in [17d]. However, since there is no simple verb counterpart (note the ungrammaticality of [19]) *belasten* in [18] must be a CLASS IV verb with an incorporated Figure argument.

- [19] **Ich (A) lastete Sorgen (F) auf meinen Freund (G).*
 I burdened worries on my friend
- [20] = [18] *Ich (A) belastete^F meinen Freund (G) mit Sorgen.*
 I be-burdened my friend with worries
 'I burdened my friend with worries.'

CLASS III

The verbs in this class have the Ground as subject. This means that only simplex verbs can belong to this class; there can be no CLASS III *be*-verbs, since by [14] Ground Specification for *be*-verbs, the Ground must be the direct object of a *be*-verb. CLASS III verbs may be intransitive with the Figure in the PP, or transitive with the Figure as object.

- [21] a. *Der See (G) wimmelte von Fischen (F).*
 the lake teemed by/from fish
 'The lake teemed with fish.'

- b. *Mir tön^{ten}ten die Ohren (G) von dem Lärm (F).*
 to-me sounded the ears from the noise
 'My ears rang with the noise.'
- c. *Die Esse (G) gab viel Qualm (F) ab.*
 the chimney gave much smoke off
 'The chimney emitted a lot of smoke.'

Note that if the positions of Figure and Ground are reversed we have a CLASS II verb:

- [22] a. *Fische (F) wimmel^{ten}ten in See (G).*
 'Fish swarmed in the lake.'
- b. *Der Lärm (F) tön^{te}te mir in den Ohren (G).*
 the noise rang to-me in the ears
 'The noise rang in my ears.'

The verbs *wimmeln* and *tönen* are in both CLASS II and CLASS III.

CLASS IV

The verbs in this class are *be*-verbs that incorporate the Figure. Although most of the verbs in this class are denominal there are some derived from adjectives. In the examples the superscript indicates the incorporated element on the verb.

CLASS IVa: Verbs derived from nouns

- [23] a. *Reifen 'tyre' => bereif^{en}en*
Der Mechaniker bereif^{te}te das Auto (G).
 the mechanic *be*-tyred the car
 'The mechanic put tyres on the car.'

- b. *Aufsicht* 'supervision' => *beaufsichtigen*
Der Dozent beaufsichtigte^F die Klasse (G).
 the lecturer *be*-supervised the class
 'The lecturer supervised the class'.
- c. *Flagge* 'flag' => *beflaggen*
Die Kinder beflaggten^F die Häuser (G).
 the children *be*-flagged the houses
 'The children put out flags on the houses.'
- d. *Kleister* 'paste' => *bekleistern*
Er bekleisterte^F die Tapete (G).
 he *be*-pasted the wallpaper
 'He put paste on the wallpaper'.

Note that there are no simplex verbs in CLASS IV. Ground Specification [14] requires that these verbs, which all have a Ground direct object, to be prefixed by *be-*.

The examples in [23] appear to violate Emonds' Figure Specification, which requires there to be a Figure NP in an argument position of a thematic verb. The examples in [23] violate this principle since only the Ground is in an argument position. If the Figure Specification is correct then only [24] should be grammatical, where the Figure *Kleister* 'paste' is in a PP.

- [24] *Er bekleisterte die Tapete (G) mit einem guten Kleister (F).*
 he *be*-pasted the wallpaper with a good paste

However, I will argue that the Figure in [23] is incorporated in the verb *bekleisterte* 'pasted', just as it is in [24]. I regard the PP *mit einem guten Kleister* not as the Figure itself, but as a refinement of the Figure. In order for [23] and [24] to be accommodated in the theory, we have to modify Figure Specification to allow the Figure to appear incorporated in the verb.

[25] Figure Specification (Revised):

(a) For any lexical [X^0 , +T], exactly one Figure, distinct from the Ground, must be present among the deep structure arguments of X^0 .

(b) A deep structure argument of X^0 may be:

(i) A NP inside XP,

(ii) A N^0 inside X^0 .

Note the difference when *bekleistern* behaves like a CLASS I verb.

[26] *Er bekleisterte die Wand (G) mit Bildern (F).*

he be-pasted the wall with pictures

'He covered the wall with pictures.'

It is clear that *bekleistern* no longer incorporates the Figure since the Figure in this sentence is in the PP *mit Bildern* and is no longer the paste. It is clear that what the sentence is saying is that it is the pictures, not the paste, that go on the wall.

CLASS IVb: Verbs derived from adjectives

[27] a. *feucht* 'damp' => *befeuchten*

Er befeuchtete^F das Papier (G).

'He dampened the paper.'

b. *frei* 'free' => *befreien*

Er befreite^F den Gefangenen (G).

'He freed the prisoner.'

c. *fest* 'firm, fast' => *befestigen*

Er befestigte^F das lose Brett (G).

he be-fastened the loose board

'He fixed the loose board.'

With these de-adjectival verbs it is perhaps less easy to defend the hypothesis that the Figure is incorporated in the verb and the direct object is the Ground. After all, we can define *befeuchten* as meaning 'to make damp, cause to be damp' and exclude any idea that a noun with the Figure role is involved. However, the idea of Figure-incorporation can be salvaged if we think of the adjective as embodying a transferable quality (Talmy's 'conceptually movable point') and it is the quality of 'dampness' which is conveyed to the Ground, in the same way that it is paint that is conveyed to the wall in *he painted the wall* and *he smeared paint on the wall*.⁹ Confirmation that this is the right approach is provided by the next examples.

- [28] *Er befestigte^F das Bild (G) ({an der Tür_{DAT}/ *an die Tür_{ACC}}) mit
Nägeln.*

'He fixed the picture (on the door) with nails.'

Note that the bracketed adjunct PP is optional. Although our knowledge of the world tells us that the nails were hammered into the door, the syntax of the sentence has nothing to say about this: the syntax insists that it is the quality of firmness (Figure) that was conveyed to the picture (Ground). Note that the noun in the locative phrase *an der Tür* is in the dative case to indicate where the action of the verb took place, not accusative *an die Tür*, which would indicate PATH, where the picture moved to. Compare *befestigen* with the CLASS I verbs *nageln* and *benageln* 'to nail'.

- [29] *Er nagelte das Bild (F) {an die Tür_{ACC}/ *an der Tür_{DAT}} (G).*

'He nailed the picture to the door.'

Er benagelte die Tür (G) mit Bildern (F).

he be-nailed the door with pictures

'He nailed pictures on the door.'

⁹ Chapter 11 formalizes the German deadjectival verbs. There it will be seen that the prefixes *ver-* and *er-* are the archetypal prefixes on deadjectival verbs.

In a locative PP with a CLASS I verb the noun is in the accusative case (*an die Tür*) to show the path of the picture (Figure) to the door (Ground).

Note that I classify *nageln* and *benageln* as they appear in [29] as CLASS I verbs since, although they derive from the noun *Nagel* 'nail', there are two ways in which they do not behave like de-nominal CLASS IV verbs:

1. They exist as both simple and *be*-verbs, whereas CLASS IV verbs are only *be*-verbs.
2. CLASS IV verbs incorporate the Figure, whereas CLASS I *be*-verbs require the Figure to be in the PP.

There is, however, a simple verb *nageln* and de-nominal CLASS IV verb *benageln* which behave differently to the *nageln/benageln* pair in [30].

- [30] *Der Schuster nagelte die Schuhe.*
 'The cobbler nailed (= repaired) the shoes.'
 Der Schuster benagelte die Schuhe. CLASS IV
 the cobbler be-nailed the shoes
 'The cobbler put extra studs in the shoes.'

I regard *nagelte* here as a simple verb with an (affected) theme direct object, a synonym of 'mend', 'repair'. The syntax of the sentence conveys no sense of motion, whereas the CLASS I verb (*nagelte das Bild an die Tür*) does imply motion. The verb *benagelte* in [30] is a CLASS IV de-nominal verb meaning 'supply extra studs to'.

The semantic difference between *nageln* and *benageln* is paralleled by the verbs *grüßen* 'greet' and *begrüßen* 'be-greet'. The verb *begrüßen* is a denominal *be*-verb containing the Figure argument *Gruß* 'greeting' and means 'provide a welcome'.

- [31] a. *Er begrüßte seinen Freund.*
 'He greeted his friend.' = 'He said hello.'
 b. *Der Chef begrüßte das neue Personal.*

the boss *be*-greeted the new staff

'The boss welcomed the new staff.'

A similar distinction between Theme and Figure/Ground arguments can account for the various meanings of the verbs *schreiben* and *beschreiben*.

- [32] a. *Er schrieb zwei Worte.* Theme direct object
'He wrote two words.'
- b. *Er schrieb über seine Erfahrungen.* CLASS I simplex verb
'He wrote about his experiences.'
- Er beschrieb seine Erfahrungen.* CLASS I *be*-verb
he *be*-wrote his experiences
'He described his experiences.'
- c. *Er beschrieb das Papier.* CLASS IV *be*-verb
he *be*-wrote the paper
'He filled the paper with writing.'

The verb in [32a] is a simple transitive verb with a Theme direct object. The verbs in [32b] are CLASS I verbs. The simple verb has the Ground in the PP; the *be*-verb has the Ground as direct object. The verb in [32c] I take to be a CLASS IV verb in which the Figure 'writing' is incorporated. The sense of [32c] is that writing is transferred to the paper.

The verbs in this class have the Ground incorporated. This predicts that, since a *be*-verb requires its direct object to be the Ground, there will be no *be*-verbs in this class. Furthermore, since incorporation in the verb in German seems to require the morphological device of a prefix, we do not expect to find any simplex German verbs in this class, either. Both predictions seem to be borne out.

It does, however, appear to be the case that English has verbs that incorporate the Ground. It may be the case that English, presumably because of its reduced morphological means to mark word classes, has developed more flexibility in deriving one class of word from another. Consider the examples.

- [33] *He bottled^G the wine* (F).
 He garaged^G the car (F).
 He binned^G the rubbish (F).
 He filed^G the papers (F).
 He housed^G the orphans (F).

I have marked the verbs in [33] as incorporating the Ground argument. Let us assume for the moment that this is the correct analysis. The semantics of the Figure/Ground relationship is clear: he put the wine into the bottles. If we add a locative PP it does not alter the fact that the Ground is still incorporated in the verb; the PP, which is essentially an optional adjunct, must be [-PATH]. Compare [34a], where the prepositions are [-PATH] with [34b], where the prepositions are [+PATH].

- [34] a. *He bottled^G the wine {in/*into} new bottles* (F). CLASS V
 *He garaged^G the car {in/*into} a shed* (F).
 *He binned^G the rubbish {in/*into} a skip* (F).
 *He filed^G the papers {in/*into} a filing cabinet* (F).
 *He housed^G the orphans {in/*into} in a hostel* (F).

 b. *He poured the wine* (F) *{*in/into} new bottles* (G). CLASS I

*He drove the car (F) {*in/into} a shed (G).*

*He threw the rubbish (F) {*in/into} a skip (G).*

*He put the papers (F) {*in/into} a filing cabinet (G).*

*He put the orphans (F) {*in/into} a hostel (G).*

Since German is theoretically unable to form verbs like those in [34a], the only means available to express the meaning of the sentence is to employ a verb which doesn't incorporate the Ground but expresses it by some other means. [35] and [36] give the German versions of [34a] and [34b]. All the examples in [35] are grammatical with the optional, adjunct, [-PATH] PP realized by a prepositional phrase in the dative in [35] and the obligatory [+PATH] PP in the accusative in [39]. Additionally, however, a P + ACC is grammatical in some of [35].¹⁰

- [35] a. *Er füllte den Wein in (neue_{ACC}/neuen_{DAT}) Flaschen ab.*
 he filled the wine in new bottles off
 'He put the wine in new bottles.'
- b. *Er stellte den Wagen in (?eine_{ACC}/einer_{DAT}) Garage ab.*
*Er stellte den Wagen in (*eine_{ACC}/einer_{DAT}) Garage unter.*
 he put the car in a garage off
 he put the car in a garage down
 'He garaged the car.'
- c. *Er warf den Müll in (einen_{ACC}/einem_{DAT}) Container ab.*
 he threw the rubbish in a skip off
 'He put the rubbish in a skip.'
- d. *Er legte die Papiere in (?einen_{ACC}/einem_{DAT}) Aktenschrank ab.*

¹⁰ I am grateful to Ute Bohnacker for the grammaticality judgments in [35]. I cannot account for why P + ACC is more or less grammatical when the particle is *ab* but not when the particle is *unter*.

he laid the papers in a filing-cabinet off

'He filed the papers in a filing-cabinet.'

- e. *Er brachte die Waisenkinder in (*ein_{ACC}/einem_{DAT}) Heim unter.*

he brought the orphans in a hostel under

'He housed the orphans in a hostel.'¹¹

- [36] a. *Er füllte den Wein (F) in neue Flaschen_{ACC} (G).*

'He poured the wine {in/into} new bottles.'

- b. *Er stellte den Wagen (F) in eine Hütte_{ACC} (G).*

'He drove the car {in/into} a shed.'

- c. *Er warf den Müll (F) in einen Container_{ACC} (G).*

'He threw the rubbish {in/into} a skip.'

- d. *Er legte die Papiere (F) in einen Aktenschrank_{ACC} (G).*

'He put the papers {in/into} a filing cabinet.'

- e. *Er brachte die Waisenkinder(F) in ein Heim_{ACC} (G).*

'He put the orphans {in/into} a home.'

¹¹ Also possible is the following:

- (i) *Er {behauste/beherbergte} die Waisen in einem Heim.*

he be-housed/be-hostelled the orphans in a hostel

'He housed the orphans in a hostel.'

While it appears that *behausen* and *beherbergen* incorporate the Ground, I argue in 3.3.3.1 that they, in fact, incorporate the Figure. The sense of (i) is that he provided the orphans with accommodation, i.e.

behausen and *beherbergen* are CLASS IV verbs.

The optional PPs (with dative case on the NPs) in [39] are not, in fact, the Ground, but an extension of the Ground. The true Ground is a 'hidden' Ground.¹² By 'extension of the Ground' I mean that the PPs are a sort of refinement of the Ground, in much the same way as the last two adjuncts in the following sentence are a refinement of *in Paris*.

[37] *He ate in Paris in a restaurant on the terrace.*¹³¹⁴

¹² I return to this idea in Chapter 10, where I give a precise and formal analysis of the 'hidden' Ground.

¹³ I am grateful to J. Emonds for pointing this out.

¹⁴ Returning to the examples in [34a] of the type *He bottled^G the wine {in/*into} new bottles* (F), I have assumed that English verbs such as *bottle*, *bin*, *file* incorporate the Ground argument.

There is, however, another possible analysis that I wish to air. In this alternative analysis a verb like *bottle* does not incorporate the Ground argument, but is simply a $N \rightarrow V$ conversion that takes a Theme complement. Both English and German have many such conversions:

- (i) *Fisch/fischen* 'fish', *Buch/buchen* 'book', *Kampf/kämpfen* 'struggle'

If we take the verb *bottle* to be a conversion with a Theme complement as in (ii), rather than a Ground-incorporating verb as in (iii), this will effectively mean that there are no CLASS V verbs in English, just as there are none in German.

- | | | | |
|------|----|---|---------------|
| (ii) | a. | <i>He [[bottle_N] -ed_V] the wine</i> (Th). | Conversion |
| | b. | <i>He [[bottle^G] -ed_V] the wine</i> (F). | Incorporation |

Recall that the examples in [29] and [34], here repeated, show that *nageln* 'nail' can be a conversion with a Theme complement, or a CLASS I verb taking a Figure complement. *Benageln* 'benail' can be a CLASS I verb with a Ground complement, or a CLASS IV verb that incorporates the Figure argument.

- | | | |
|-------|--|------------|
| (iii) | <i>Der Schuster nagelte die Schuhe</i> (Th). | Conversion |
| | 'The cobbler nailed (= repaired) the shoes.' | |
| | <i>Er nagelte das Bild</i> (F) <i>{an die Tür/ *an der Tür}</i> (G). | CLASS I |
| | 'He nailed the picture to the door.' | |
| | <i>Er benagelte die Tür</i> (G) <i>mit Bildern</i> (F). | CLASS I |
| | he <i>be</i> -nailed the door with pictures | |
| | 'He nailed pictures on the door.' | |
| | <i>Der Schuster benagelte die Schuhe.</i> | CLASS IV |
| | the cobbler <i>be</i> -nailed the shoes | |
| | 'The cobbler put extra studs in the shoes.' | |

3.3.2 Apparent exceptions

There are two sets of *be*-verbs that appear not to conform to the principles by which I have classified the *be*-verbs. There is a small set of German *be*-verbs that appear to belong in CLASS V, in that they incorporate the Ground and take a Figure complement, and a small set of intransitive *be*-verbs. I will show, however, that both sets of verbs can be accommodated in the scheme that I have outlined.

3.3.2.1 Apparent CLASS V *be*-verbs

There are four German *be*-verbs that appear to violate Ground Specification for *be*-verbs. These four verbs are semantically close and convey the notion 'accommodate someone/something somewhere'. The problem is that these four verbs appear to be German CLASS IV verbs, since they incorporate the Ground argument, in violation of Ground Specification [14], and take a Figure direct object.

- [38] a. *Herberge* 'lodging'; *Haus* 'house'
- Er {beherbergte/behaupte} die Waisen (in einem Heim).*
- 'He housed the orphans (in a hostel).'
- b. *Heimat* 'homeland'
- Er beheimatete den Luchs im Schwarzwald.*
- he *be*-homed the lynx in the Black Forest
- 'He introduced the lynx to the forest.'
- c. *Erde* 'earth'
- Er beerdigte seinen Freund im Kirchhof.*
- he *be*-earthed his friend in the cemetery
- 'He buried his friend in the cemetery.'

The difficulty in deciding whether the English verb *bottle* is a conversion or an incorporation is not helped by the fact that English has virtually lost the *be*- prefix. It is the *be*- prefix that helps to clarify the situation in German.

It seems clear that the direct objects *Waisen* 'orphans', *Luchs* 'lynx', *Freund* 'friend' move into their respective Ground arguments, and that these Ground arguments are *Herberge* 'lodging', *Heimat* 'homeland', *Erde* 'earth'. Note the following about [38].

1. The verb is denominal and must therefore be prefixed.
2. The *orphans*, *lynx* and *friend* (Figure) are the direct object of a *be*-verb, in violation of Ground Specification for *be*-verbs [14], which requires the Ground to be the object.
3. The Ground is incorporated in the verb.

However, I propose that this is not be the most appropriate way to view the sentences in [38]. Let us assume for the moment that these four verbs do not violate the principles that I have proposed, but in fact conform to them. If these four verbs are 'regular' *be*- denominal verbs, then what is incorporated in the verb must be the Figure, not the Ground. Rather than construing [38a] as meaning that the orphans move into the lodging or the house, let us construe the sentence as meaning that someone provided the orphans (Ground) with accommodation (incorporated Figure). This view is supported by the fact that in [38a] the orphans do not, in fact, move into the lodging/house, represented by the incorporated noun, but in reality they move into the hostel (*Heim*). In these sentences it is the PP adjunct that tells us where the Ground ends up. I propose, therefore, that the sentences in [38] are not anomalous with respect to the principles of the realization of Figure and Ground, but in full conformity with those principles. The analysis I give for [38a] is, therefore, not [39a], but [39b].

- [39] a. **Er beherbergte^G die Waisen^F in einem Heim.*
 b. *Er beherbergte^F die Waisen^G in einem Heim.*
 'He housed the orphans in a hostel.'

Confirmation that this is the right analysis is provided by [40], where the subject of the sentence is the building itself. If we take the building to be the Ground, since the offices/families (Figure) are clearly in the building, we have the curious situation

shown in [40a], where both the subject (building) and the incorporated *Herberge* 'hostel' are Grounds. This would be a double violation of Ground Specification for *be*-verbs. The subject of a *be*-verb cannot be the Ground; the direct object of a *be*-verb cannot be the Figure. If, however, we take the sentence to have the reading as in [40b], where the verb incorporates the Figure, and the Ground arguments are the offices/families, we see that the sentence conforms to the structure of CLASS IV verbs. In this reading the building provides accommodation (incorporated Figure) for the offices/families (Ground). Thus, [40b] is no different from a CLASS IV verb such as *bereifen* 'be-tyre, provide with tyres'.

- [40] a. **Das Gebäude* (G) *beherbergt*^G *zwei {Büros/Familien}* (F).
 b. *Das Gebäude* *beherbergt*^F *zwei {Büros/Familien}* (G).
 'The building houses two {offices/ families}.'
 c. *Er bereifte*^F *das Auto* (G).
 he *be*-tyred the car
 'He put tyres on the car.'

Further confirmation that this is the right approach to the verbs in [38] is provided by two more denominal verbs formed from *Erde* 'earth'. The verb *erden* I take to be a noun to verb conversion, [*[Erde_N]* v], while *beerden* is a *be*-verb with an incorporated Figure, a true supply or transfer verb, [*be-* *[Erde_N]* v]

- [41] a. *Er erdete das Radio.* (Theme direct object)
 'He earthed the radio.'
 b. *Er beerdete die Kartoffeln.* (CLASS IV *be*-verb)
 he *be*-earthed the potatoes
 'He earthed up the potatoes.'

The denominal verbs in [38] contrast with the behaviour of the verbs *hausen/behauen*, *wohnen/bewohnen*, which are CLASS I verbs. The simplex verbs *hausen* and *wohnen* take a PP argument, while their *be-* verb counterparts take the Ground as direct object.

- [42] a. *Die Familie (F) {behaust/bewohnt} eine Hütte (G).*
 the family {be-house/be-dwell} a hut
 'The family inhabit a hut.'
- b. *Die Familie (F) {haust/wohnt} in einer Hütte (G).*
 the family {house/dwell} in a hut
 'The family live in a hut.'

It is now clear that there are two verbs of the form *behauen*. One of them is the *be-* verb counterpart to the simplex *hausen*, while the other is a Figure-incorporating *be-* verb. Note that, in contrast to the two verbs *behauen*, there is only one verb *bewohnen* 'be-dwell'. *Bewohnen* is the *be-* counterpart of the simplex *wohnen*, and since there is no noun **Wohn*, there can be no CLASS IV Figure-incorporating verb *bewohnen*. (The noun that derives from *wohnen* is *Wohnung* 'dwelling'.) This is shown in [43].

- [43] *Die Hütte {behaust/beherbergt/*bewohnt} eine Familie.*
 the hut {be-houses/be-dwells} a family
 'The hut houses a family.'

The table in [44] shows the relationship between the simplex verbs, their *be-* counterparts and the Figure-incorporating *be-*verbs of CLASS IV.

[44]

Simplex verb	CLASS I <i>be</i> -verb	CLASS IV <i>be</i> -verb
<i>hausen</i>	<i>behausen</i>	<i>be-Haus^F-en</i>
* <i>herbergen</i>	Ø	<i>be-Herberg^F-en</i>
* <i>heimaten</i>	Ø	<i>be-Heimat^F-en</i>
<i>erden</i>	Ø	<i>be-Erd^F-igen</i>
<i>wohnen</i>	<i>bewohnen</i>	* <i>be-Wohn^F-en</i>

3.3.2.2 Intransitive *be*-verbs

There are three intransitive German *be*-verbs that derive from simplex verbs. Abraham (1995) mentions two (2.2.2.2): *beharren* 'insist, persist, persevere' and *beruhen* 'be based on'. The third is *bestehen* 'exist, continue to exist'. The intransitivity of these verbs violates Ground Specification for *be*-verbs. The examples in [45] illustrate the usage of these verbs.

- [45] a. *Er beharrte (auf Pünktlichkeit).*
 'He insisted on punctuality.'
- b. *Seine Worte beruhten (auf Wahrheit).*
 his words *be*-rested on truth
 'His words were based on the truth.'
- c. *Das Haus besteht (seit hundert Jahren).*
 the house *be*-stands since hundred years
 'The house has continued to exist for a hundred years.'

I propose that these three verbs are remnants of an earlier system, in which *be-* represented a location feature meaning something like 'forth, onwards'. I return to these verbs in Chapter 10. It will be seen that they can be accommodated in the Figure/Ground schema.

3.4 Reflexive *be*-verbs

So far I have said nothing about the subject of CLASS I verbs (which have both Figure and Ground as arguments internal to the VP). The examples I have given have had an Agent subject, as in [16b], repeated here.

- [46] *Er beschüttete die Straße (G) mit Sand (F).*
 he *be*-poured the road with sand

Er schüttete Sand (F) auf die Straße (G).
 'He poured sand on the road.'

I now wish to consider whether the subject must always be external to the field of Figure and Ground or whether it can be in some way associated with one or the other. In the case of [46] the answer is simple; the Ground can be represented by a reflexive pronoun co-indexed with the agent subject, as shown in [47]

- [47] *Er_i beschüttete sich_i (G) mit Sand (F).*
 he *be*-poured himself with sand

Er_i schüttete Sand (F) auf sich_i (G).
 'He poured sand on himself.'

Note the interesting relationship between *trinken* 'to drink' and *sich betrinken* 'to get drunk':

- [48] a. *Er trank Wein (F).*
 'He drank wine.'

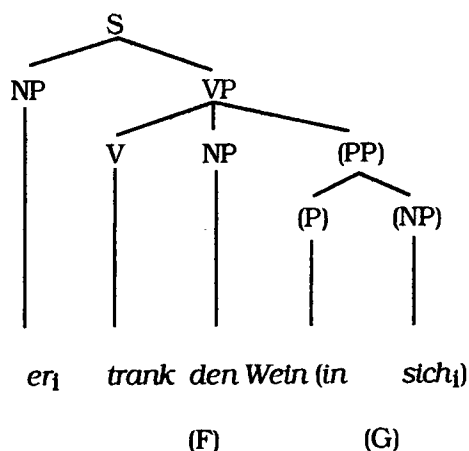
b. *Er_i betrank sich_i (G) (auf Wein).*

he *be*-drank himself (on wine)

'He got drunk (on wine)'

These two verbs are CLASS I verbs which allow only one overt internal argument. (I take the PP *auf Wein* to be an adjunct.) Yet it is intuitively clear that the wine (F) goes into the person doing the drinking (G) and I follow Emonds (1991: 404) in adopting Jackendoff's (1987: 27) notation (N_i) to signify coreference with the subject. I propose the tree in [49]. The unrealized PP *in sich* 'into himself' contains the Ground argument coindexed with the subject *er* 'he'.

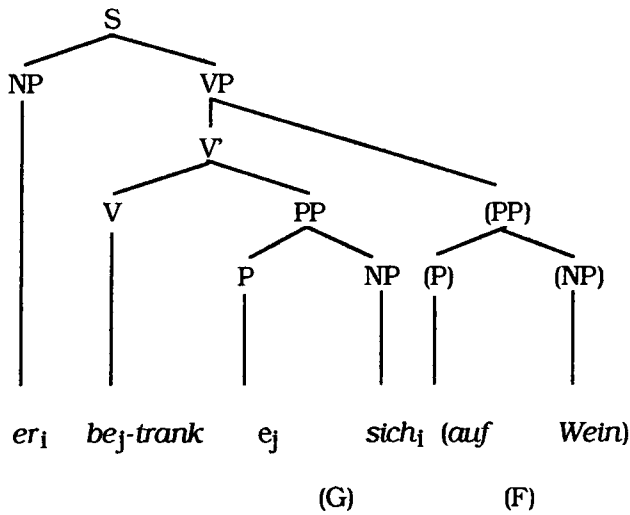
[49]



The next tree shows the structure when the PP containing the Ground appears immediately following the verb. This anticipates somewhat the analysis that I propose in Chapters 4 and 7 for the possible structures that arise when the Ground is foregrounded by promotion to the position immediately after the verb. In this case the preposition *in* 'into' is alternatively realized by the *be*- prefix (shown by coindexing with i), the Ground NP becomes the direct object of the verb, and the Figure argument *Wein* 'wine' is in the PP headed by the grammatical preposition *auf*. Note that I call *auf*, as it appears in [48b] a 'grammatical' preposition. I argue in Chapter 4 that in the structure I am discussing insertion of a preposition is necessary in order to

give the Figure argument case. Note that *auf* in this structure does not have a [+LOCATION] feature, i.e. it does not literally mean 'on'. The same can be said, of course, for the English: *He got drunk on wine*.

[50]



CLASS II *be*-verbs have the Figure as subject and the Ground as object. This would seem to rule out the possibility of the Ground object being co-indexed with the Figure subject. Recall that Figure Specification requires Figure and Ground to be distinct. However, Emonds' Figure Specification does not rule out a **reflexive** object since then subject and Ground are **syntactically** distinct. Therefore, CLASS II verbs may be reflexive.

- [51] *Er_i belachte sich_i*
 he *be*-laughed himself
 'He laughed at himself'

More examples of reflexive CLASS IV verbs are given in [52].

- [52] a. *Er_i bewaffnete sich_i mit einem Schwert.*
 he *be*-armed himself with a sword
 'He armed himself with a sword.'
- b. *Der Fuchs_i beheimatete sich_i von selbst im Schwarzwald.*
 the fox *be*-homed himself by self in the Black Forest.
 'The fox established himself in the Black Forest'

3.5 The verbal complex *smell*

It will be instructive at the present stage to view a complete verbal semantic field in the light of our hypothesis. This section illustrates how the various German and English verbs that convey the general semantic notion of 'smell' are related to each other and the verb classes that we have set up. For ease of reference I repeat TABLE I below.

	SUBJECT	VERB	OBJECT	PP
CLASS I	a Agent	<i>be</i> -V	Ground	Figure
	b Agent	simple	Figure	Ground
CLASS II	a Figure	<i>be</i> -V	Ground	
	b Figure	simple		Ground
CLASS III a	Ground	simple	Figure	
CLASS III b	Ground	simple		Figure
CLASS IV	Agent	<i>be</i> -V+F	Ground	
CLASS V	Agent	simple+G	Figure	

In [53] I give three different uses of the verb *smell*. Bold face indicates Ground, underlining indicates Figure.

- [53] One day **Sid** smelt something. (became nasally aware of smg)
 So he smelt **his feet**. (put his nose to his feet....)
 He realized **his feet** smelt. (his feet gave off a smell)

The difference between the three uses of *smell* in [53] is easily accounted for: the verb *smell* belongs to different CLASSES. Note that none of the near synonyms of *smell* have precisely the same CLASS distribution.

- [54] a. **Sid** {smelt/*stank/*reeked/*sniffed} something. CLASS III
 b. He {smelt/*stank/*reeked/sniffed} **his feet**. CLASS I
 c. **They** {smelt/stank/reeked/*sniffed} of Sid. CLASS III
- [55] a. **Klaus** {roch/*stank/*beschnüffelte} etwas. CLASS III
 Claus {reeked/stank/sniffed} something
 b. *Er* {beroch **seine Füße**/roch an seinen Füßen}. CLASS I
 he {be-reeked his feet/reeked at his feet}
 'He smelt his feet.'
 c. **Sie** {rochen/stanken/*schnüffelten} nach Klaus. CLASS III
 they {reeked/stank} after Claus
 'They smellt of Claus.'
 d. Seine Füße hatten **seine Socken** verstunken. CLASS II
 his feet had his socks stunk
 'His feet had caused his socks to stink.'
 e. *Seine Füße* hatten **seine Socken** verstänkert. CLASS IV
 his feet had his socks ver-stenched
 'His feet had caused his socks to stink.'

The verb *smell* appears in CLASSES I, II, and III according to whether the subject is Agent, Figure or Ground. *Reek* occurs only as a Class III verb with the Ground as

subject. *Stink* is a CLASS II or III verb with either Figure or Ground as subject. *Sniff* is an activity verb with a [+ANIMATE] subject and an optional direct object.

Note that differentiation between the verbs on the basis of the Figure/Ground distinction accounts for the semantic differences between the verbs. We have had no need to appeal to the idea of thematic roles based on lexical conceptual structures and theta hierarchies (agent, experiencer, patient, theme,) (Anderson, 1977; Jackendoff, 1983; Van Valin, 1991).

In the German examples note the alternation between the *be*-verb/simple verb pairs and their direct object/PP complements. It is interesting to note that, whereas *verstänken* belongs in CLASS IV with the denominal verbs that incorporate the Figure (*Gestank* 'stench' => *verstänken*), the verb pair *stinken/verstinken* belongs in CLASS II. This is a good instance of lexical differentiation between the verb classes. Note again that the prefix *ver-* in *verstänken* and *verstinken* performs the same function as the prefix *be-* in requiring the Ground to be direct object.

3.6 The *be*-prefix in English

None of the English equivalents of German *be*-verbs that I have so far considered have been prefixed verbs themselves. This does not, however, mean that English lacks such prefixed verbs; there are English *be*-verbs but the prefix is unproductive. When a *be*-verb/simple verb pair exists the same relationship usually obtains between them as in German.

- [56] a. *The prisoner (F) bewailed/bemoaned his lot (G).* CLASS I
 The prisoner (F) wailed/moaned about his lot (G).
- b. *Many problems (F) beset the villagers (G).* CLASS II
 Bandits (F) set upon the villagers (G).
- c. *The bandits (A) set the villagers (G) problems (F).* CLASS I
 The bandits (A) beset the villagers (G) with problems (F).

Note that in the last example *the villagers* is the indirect object of the simple verb *set*, the direct object being *problems*. I will say that *the villagers* is in a headless PP which corresponds to the headed PP in *The bandits set problems to the villagers*.

While Old English had a large number of *be*-verbs, few have survived. The CLASS I simple verb in Modern English can generally take either Figure or Ground as direct object.

- [57] a. *He (be)daubed the wall with paint.* CLASS I
*He (*be)daubed paint on the wall.*
 b. *He (*be)loaded the cart with hay.*
*He (*be)loaded hay onto the cart.*

Some of the CLASS II and IV *be*-verbs survive.

- [58] a. *His legs bestraddled the horse.* CLASS II
He bestrode the world.
 b. *The soldiers besieged the city.* CLASS IV
Many problems bedevil him.
Dishonesty besmirches his reputation.

There are also some survivors of the *be*- prefix in the form of past participles.

- [59] *bespoken, befogged, bedazzled, bereft, bewigged, bejewelled*

3.6.1 The *be*- prefix in Old English

In this section I give a brief overview of the *be*- prefix on verbs and adverbials in Old English (OE). OE verbs prefixed with *be*- can be divided into a number of groups:

(i) Concealment

<i>dīgle</i> (A, N)	secret	<i>bedīglian</i>	conceal
		<i>bebelian</i>	cover, conceal
<i>hȳd</i> (N)	hide, skin	<i>behȳdan</i>	hide
<i>wreōn</i> (V)	cover	<i>bewreōn</i>	cover, hide away
<i>wyrcean</i> (V)	work, build	<i>bewyrcean</i>	cover, work, build

(ii) Surrounding

<i>faran</i>	go, journey	<i>befaran</i>	surround
<i>fōn</i>	seize, catch	<i>befōn</i>	surround, include, seize
<i>fyllan</i>	cause to fall	<i>befyllan</i>	surround, besiege
<i>gān</i>	go	<i>begān</i>	surround
<i>rīdan</i>	ride, swing	<i>berīdan</i>	surround
<i>sittan</i>	sit	<i>besittan</i>	beset, besiege
<i>weorpan</i>	cast, throw	<i>beweorpan</i>	cast down, surround
<i>windan</i>	wind	<i>bewindan</i>	wind round, surround

(iii) Deprivation

<i>dālan</i>	deal	<i>bedālan</i>	deprive
<i>liðan</i>	go. travel	<i>beliðan</i>	deprive
<i>nāman</i>	take	<i>benāman</i>	deprive
<i>scyrian</i>	ordain, decree	<i>bescyrian</i>	deprive
<i>slēan</i>	slay	<i>beslēan</i>	deprive by violence
<i>rēafian</i>	rob	<i>berēafian</i>	rob, plunder
<i>rȳpan</i>	plunder	<i>berȳpan</i>	rob, despoil

(iv) Deception

<i>dydrian</i>	deceive	<i>bedydrian</i>	deceive
		<i>bepācan</i>	deceive, delude
<i>swīcian</i>	deceive	<i>beswīcan</i>	deceive, betray

(v) The addition to the base verb of the feature →

(a) In the first group it is clear that the *be-* prefix adds to the intransitive base verb the feature (→), which is conveyed in modern English by a particle. The resultant transitive *be*-verb takes a Ground direct object.

<i>blibban</i>	laugh	<i>beblebhan</i>	exult over
<i>hycgan</i>	think, intend, plan	<i>behycgan</i>	think over
<i>sorgian</i>	sorrow	<i>besorgian</i>	sorrow for
<i>stondan</i>	stand	<i>bestondan</i>	stand by
<i>tācan</i>	teach, show, point	<i>betācan</i>	hand over, deliver up
		<i>begēotan</i>	pour over

(b) In this second group it is not so clear that *be-* conveys the feature (→).

<i>bēodan</i>	offer, order, command	<i>bebēodan</i>	order, command
<i>cuman</i>	come	<i>becuman</i>	come, arrive, happen
<i>cweðan</i>	speak, declare	<i>becweðan</i>	bequeath
<i>hātan</i>	order, command, call	<i>behātan</i>	promise
<i>sprecan</i>	speak, say	<i>besprecan</i>	complain

The *be-* prefix was not confined to verbs in OE. It is also found on adverbials. In the context of adverbials it is easier to see the relationship between the prefix *be-* and its cognate, the preposition *by*.

<i>benorðan, besūðan, beēastan, bewestan</i>	in the north, south, east, west
<i>bewestannorðan</i>	north west of
<i>beæftan, behindan</i>	behind
<i>beforan</i>	before
<i>behionan</i>	on this side
<i>beinnan</i>	within
<i>beneoðan</i>	beneath
<i>betweoh(n)</i>	between, among

3.7 Summary and conclusions

This chapter has shown that there is a systematicity in the behaviour of verbs with the *be*-prefix. Using Talmy's Figure and Ground hypothesis, we have seen that the simplex verb takes the Figure as direct object, and the *be*-verb takes the Ground as direct object. The *be*-verbs may also incorporate a Figure argument. Furthermore, we have seen that the Figure/Ground distinction allows us to establish a set of verb CLASSES, by means of which we can account for the range of meanings of the verbs in a verb complex such as *smell, stink, reek, sniff* and their German counterparts *riechen, beriechen, stinken, verstinken, verstäknern, schnüffeln, beschnüffeln*. I have also shown that the distinction between the German simplex verb and *be*-verb is echoed in some verbs in English which are remnants of an earlier simplex/*be*-verb distinction.

CHAPTER 4

ARGUMENTS AND VERBS

4.1 Introduction

In this chapter I propose that prefixed verbs are formed in a pre-syntactic morphological component of the grammar where head movement takes place. In order to account for the formation of prefixed verbs, I claim that arguments are primary, and that language imposes certain patterns of argument structure. This is illustrated by the structure that I call the verbless imperative. I introduce the templates, which represent an underlying skeletal framework that the Figure/Ground schema imposes, and show that the *be*-verbs are derived by head movement after foregrounding of the PP containing the Ground argument.

How does a prefixed verb such as German *beschmieren* 'be-smear' arise? We might consider three possibilities. The first would be to consider 'prefixation of *be-* to be an example of word-formation on a par with the formation of a compound such as *wind+mill*. The second possibility would be to consider *be*-prefixation to be a syntactic operation on a par with subject-verb agreement, or morphological realization of case. The third possibility lies somewhere between the first two; in this view *be*-prefixation would be akin to the formation of diminutives of German nouns by suffixation of *+chen*, or the formation of the comparative degree of adjectives, whereby *warm* becomes *warmer* by the affixation of a purely semantic (non-lexical) feature. We might call these three types of word-formation respectively 'lexical', 'syntactic', and 'semantic'.

- [1] a. Lexical: *wind+mill* (idiosyncratic word formation)
 b. Syntactic: *he eat+s* (alternative realization at PF)
 c. Semantic: *Haus+chen* (regular semantic)
 'house'+DIMINUTIVE

While it seems relatively uncontroversial to distinguish lexical word-formation from the other two, I am less sure of the precise difference, if there is indeed a difference, between the second and third types. In this section, therefore, I will distinguish between lexical word-formation on the one hand and syntactic on the other hand, leaving it somewhat imprecise, whether by syntactic I mean [1b] or [1c], or indeed somewhere inbetween.

4.2 The Lexical Approach

4.2.1 The Traditional View

Traditionally prefixation has been supposed to be an operation of word-formation that is independent of the syntactic component of the grammar. Prefixed and non-prefixed verbs alike are simply listed in the lexicon with their (differing) subcategorization frames. The verbs *schmieren* 'smear' and *beschmieren* 'be-smear' would have entries such as given in [2].

- [2] *schmieren*, V, + ____ DP^{FIGURE}
 beschmieren, V, + ____ DP^{GROUND}

Such a procedure would fail to capture the fact that *be-* is (to some extent) productive in modern German.

An alternative to [2] would be to list *be-* as a separate entry in the lexicon, along with other productive or semi-productive affixes. (In the example the sign $\wedge$ indicates that the DP is sister, and therefore the complement, of the verb.)

- [3] *be-*, prefix, + ____ V [$\wedge$ DP^{GROUND}]
 -er, suffix, + A ____, A [COMPARATIVE]

4.3 The Syntactic Approach

The second approach would be to consider *be*-prefixation to be the result of some sort of syntactic operation, i.e. the derivation of a sentence containing a *be*-verb from a sentence containing a simplex verb. I will consider two ways that could give the desired result. The first I will call the symmetric approach; the second I will call the asymmetric approach.

4.3.1 The symmetric approach

One way to account syntactically for the way that sentences in the Locative Alternation relate to each other might be as follows.

We observe that in the following example of alternating sentences both VPs contain a PP; the Ground argument, *Wand*, is in a PP headed by a location preposition, and the Figure argument, *Farbe*, is in a PP headed by a non-location preposition. We might suppose that underlyingly there are two PPs in the VP of each sentence.

- [4] a. *Er schmierte* [PP Ø [DP *Farbe*]] [PP *an* [DP *die Wand*]].
 'He smeared paint on the wall.'
- b. *Er beschmierte* [PP Ø [DP *die Wand*]] [PP *mit* [DP *Farbe*]].
 'He *be*-smeared the wall with paint.'

In the symmetric analysis there are two PPs in the VP, one containing the Ground, the other containing the Figure. In each sentence the head of the first PP is somehow absorbed by the verb. In the second sentence, where the Ground is the direct object, absorption of the PATH preposition *an* is overtly shown by prefixation of *be*- on the verb. We might presume that in the first sentence the [-LOCATION] preposition *mit* is also absorbed by the verb, without, however, showing up as an affix.

There are a number of arguments against a symmetric analysis, where both VPs contain two PPs.

(i) If we suppose that the [-L] verb *schmieren* 'smear' has a zero affix that relates to the non-locational P, it is but a short step to supposing that all verbs that take an accusative direct object carry a zero affix. It would be an unwarranted assumption that would explain nothing and lead to a profusion of null morphemes on verbs.

(ii) An approach that postulates two PPs might be thought to have the advantage of displaying a pleasing symmetry over an asymmetrical approach. Symmetry does not, however, appear to be an important aspect of the morphology of language. Thus, the plural of *cat* is overtly marked by affixation, *cats*.

127r by default, without affixation to mark the feature SINGULAR, and we do not need to postulate a zero morpheme. Similarly, inflectional paradigms are not always equipollent (having an overt morpheme for each value); one value may be a zero morpheme.

(iii) If *schmieren* is marked [-L] by means of a null morpheme, then *beschmieren* can be derived from *schmieren* not by simple affixation, but only by change of affix, so that [$\emptyset$ -*schmieren*] becomes [*be*-*schmieren*]. It is unclear to me how the mechanism for 'change affix' might operate.

(iv) Bearing in mind that we are supposing the *be*-prefix to carry the feature [+L], then we expect that *be*- can be affixed only onto verbs that require marking as [+L], i.e. the verb that takes [+L] marking by means of the *be*-prefix must have been [-L] before affixation. This does not presuppose that the [-L] verb is zero-affixed. Similarly, we are not obliged to assume that the prefix *dis*-, which conveys the notion 'negation' on a verb such as *disbelieve*, replaces a zero [-NEGATION] prefix on the verb *believe*.

(v) A symmetric analysis runs counter to the well established principle of 'markedness' versus 'unmarkedness'. There might be a case for symmetry if it turned out that [+L] verbs were as common as [-L] verbs, or that [+L] affixation and the Locative Alternation were available to a large number of [-L] verbs. This seems, however, not to be the case. The evidence suggests strongly that of the sentences in the

Locative Alternation the unmarked structure is that with a [-L] verb and a +PATH preposition, *He sprayed paint on the wall*.

Note that symmetry of linear order is not observed in the verbless imperative (5.5.3).

- [5] a. [Onto the wall] [with the posters]!
 b. *[With the posters] [onto the wall]!

The infelicity of [5b], with its Figure/Ground word-order, suggests that this word-order occurs only when the Figure is the direct object of the [-L] verb. In other words the Figure/Ground order represents the canonical, unmarked word-order when there is a V.

The arguments that I have given against the symmetrical analysis suggest that an asymmetric analysis may be better.

4.3.2 The asymmetric analysis

Rather than adopt a symmetrical approach in which there are underlyingly two VP-internal PPs, let us consider the asymmetrical approach in which there is only one VP-internal PP.

The asymmetrical approach postulates the following deep structures. The sentence in [6b] differs from the sentence in [6a] in that the PP containing the Ground argument has been foregrounded, i.e. raised to a position higher than the Figure. In [6b] the preposition *an* is adjoined to the verb in the form of its allomorph *be-*. In [6c] the grammatical preposition *mit* 'with' is inserted.

- [6] a. *Er schmierte* [DP *Farbe*] [PP *an* [DP *die Wand*]].
 'He smeared paint on the wall.'
 b. **Er beschmierte* [PP *e* [DP *die Wand*]] [DP *Farbe*]].
 he *be-*smeared the wall paint

- c. *Er beschmierte* [DP *die Wand*] [[PP *mit*] [DP *Farbe*]]

'He *be*-smeared the wall with paint.'

In order to justify the asymmetrical approach I will need to explain how I view subcategorization and argument selection.

4.4 Arguments and verbs

In this section I propose that arguments, as actors in a drama, are primary in the clause, rather than verbs. This means that it is the arguments in the clause that select or permit which verbs may be selected. Support for this point of view is provided by the structure that I call the verbless imperative. Assuming that arguments are primary, we can construct argument templates that have verb slots.

4.4.1 Subcategorization and argument selection

It is generally assumed that the lexicon contains the necessary information about verbs that will enable a speaker to use verbs grammatically. Thus, a verb like *place* will be entered in the lexicon as a ditransitive verb with two internal arguments, a DP direct object and a location preposition phrase:

- [7] *place*, V, + ___DP, ___+PP

The lexical entry in [7] is sufficient to account for the ungrammaticality of the following sentences:

- [8] a. **Tom places.*
 b. **Tom places books.*
 c. **Tom places on shelves.*

It seems to be the general assumption that sentences such as those in [8] are ungrammatical because they are deficient in accordance with the subcategorization requirements of the verb *place*. This is, of course, true; the number of internal arguments is incompatible with the requirements of the verb. On the other hand we could equally well say the converse, i.e. that the sentences are ungrammatical because the verb is incompatible with the arguments. Thus we could say that [8a] is ungrammatical because a clause containing a single argument, *Tom*, does not permit a verb such as *place*. [8a] becomes grammatical as soon as an intransitive verb that is compatible with a +ANIMATE subject is substituted for the verb *place*. The result would be grammatical sentences such as *Tom drinks*, *Tom reads*, *Tom shouts*.

What I am suggesting is this: it is easy to suppose that it is the verb that has prime importance in a sentence and that the rest of the clause is dependent on or subsidiary to the verb. After all, the finite verb carries tense and ϕ -features, whereas arguments do not carry verbal features. It is therefore natural, in a sense, to view the verb as central to the clause. I want, however, to propose that this is not the most fruitful way of viewing how arguments and verbs get together in a clause, but rather that it is the arguments that select, or perhaps permit, which verb or verbs may appear. Rather than give the verb pride of place in the clause, let us give pride of place to the arguments.

4.4.2 Arguments as actors

Let us consider the clause as a sort of drama. This will be a drama in which the participants, or actors, are the arguments, and what happens to the participants is described by means of verbs. I use the metaphor of drama deliberately to emphasise the point that the participating actors are primary in any drama; until the actors have entered there can be no action. In other words, the kings and queens have to come on stage before there can be intrigue, love, jealousy, murder and general mayhem.

Consider a drama in which the following three actors (arguments) participate:

Tom, a hammer, a window. These three actors can be participants in a number of events, such as:

- [9] a. *Tom {broke/shattered} the window with the hammer.*
 b. *Tom used the hammer to {break/shatter} the window.*
 c. *Tom's hammer {broke/shattered} the window.*

These are grammatical sentences in English because English has verbs that can fit in the verb slots. The verbs *break* and *shatter* cannot, however, fit into the verb slot in the following sentence, even though the same participants are involved:

- [10] *Tom {*broke/*shattered/smashed} the hammer into the window.*

On the other hand [10] does permit the verb *smash*.

4.4.3 The verbless imperative

Support for the idea that it is the arguments that are primary, and that verbs are secondary, is provided by the structure that I will call the verbless imperative.¹ Consider the English examples in [11], which have exact German counterparts, and which consist of two PP arguments.

- [11] a. *Onto the cart with the hay!*
 b. *Auf den Wagen mit dem Heu!*
 c. *Off with those wet clothes!*
 d. *Raus aus den nassen Kleidern!*

¹ Emonds (1985:259) calls this an *expletive construction*.

Note firstly that the examples in [11] contain two actors, *the cart* and *the hay* in [11a]. But there is something else there, a relationship, expressed by [LOCATION], between the two actors. This relationship effectively identifies the role the actors are to play: thus, there is a Figure identified by the [-L] preposition *with*, and a Ground identified by the [+L] preposition *onto*. Now that the roles that the actors are to play are defined, the actors are now to all intents and purposes arguments. Note, however, that they are not arguments of a verb; they are simply arguments.

Note secondly that we cannot reverse the order of the PPs in English, as in [12].²

- [12] a. **With the hay onto the cart!*
 b. **With those wet clothes off!*

In order to show why [11] are grammatical utterances, and [12] are ungrammatical, let us substitute other arguments that allow ambiguity of interpretation. Suppose that a mother is trying to get her children bathed. She might say [13].

- [13] a. *Into the bath with Sue!*
 (= 'Get Sue into the bath.')
- (= 'Go into the bath along with Sue.')
- b. *With Sue into the bath!*
 (≠ 'Get Sue into the bath.')
- (= 'Go into the bath along with Sue.')

² Ute Bohnacker (p.c) informs me that in German the PP containing the Figure can precede the PP containing the Ground.

- (i) *Mit dem Heu auf den Wagen!*
 'With the hay onto the cart!'
- (ii) *Aus den nassen Kleidern raus!*
 'Out of the wet clothes!'

To my ear both italicized sentences in [13] are grammatical. [13a] has two possible meanings, while [13b] has only one meaning. Firstly, note that both sentences have imperative force, as shown by (i) and (ii), and may have the same meaning, for both [14a] and [14b].

[14]

a. (Go) <i>with Sue into the bath</i>	}	(i) <i>and be quick about it.</i>
		(ii) <i>like I told you.</i>
		(iii) <i>or without her.</i>
b. (Go) <i>into the bath with Sue</i>		(iv) <i>or by yourselves.</i>
		(v) <i>that's where you belong.</i>
		(vi) <i>*or I'll do it myself.</i>

Secondly, note that only *Into the bath with Sue* can mean 'Put Sue in the bath'. This is shown by the ungrammaticality of (iii), (iv), (v) in [15], and the grammaticality of (vi) in [15], in contrast with its ungrammaticality in [14].

[15]

<i>Into the bath with Sue</i> (<i>'Put Sue in the bath'</i>)	}	(i) <i>and be quick about it.</i>
		(ii) <i>like I told you.</i>
		(iii) <i>*or without her.</i>
		(iv) <i>*or by yourselves.</i>
		(v) <i>*that's where you belong.</i>
		(vi) <i>or I'll do it myself.</i>

These data clearly indicate a fundamental difference between the two utterances in [14] and the utterance in [15]. If we apply the Figure/Ground distinction, the difference becomes transparent. All three constructions have the Ground in the locational PP *into the bath*. It is in the realization of the Figure argument that the two groups of phrases differ.

I analyse [14] as examples of an **ellipsed imperative**, in which the verb and the subject may optionally be phonetically realized or void. The Figure is the second person subject *you*. The PP *with Sue* is an adjunct meaning *along with Sue*. English tolerates a fair degree of freedom in the positioning of adjuncts (cf. Czepluch 1997:57), and in [14] the *with* phrase may precede or follow the *into* phrase.

I analyse [15] as a **verbless imperative** that obligatorily has neither verb nor subject, and in which the Figure is the noun in the *with* phrase. In [16] I show optional elements in round brackets.

- [16] a. (You^F) (go) [into the bath^G] [with Sue^{ADJUNCT}]
 b. (You^F) (go) [with Sue^{ADJUNCT}] [into the bath^G]
 c. [*You^{AGENT}] [*put] [into the bath^G] [with Sue^F]

Why is it that in [16c] the verb and the Agent subject of the verb are obligatorily absent? The answer is that there is no slot for the verb; and since there is no verb, there can be no subject.

We see from [16c] that the reason that there can be no verb is that there is no direct object available, since both DPs are in PPs. Verbs like *put*, *place*, *heave*, *load*, that would be suitable verbs in the context of an Agent getting Sue into the bath, are three-argument verbs that require a direct object and a PP in the VP. That there is no Agent in [16c] can also be seen by comparing the next examples. The first example, [17a], is the verbless imperative, the second, [17b] a conventional imperative.

- [17] a. (*You_i) *into the bath with* {you/*yourself_i}!
 b. (You_i) *put* {*you/yourself_i} *into the bath!*

Note that the Figure argument in the *with* PP in [17a] may not be reflexive. I interpret this as meaning that there is no antecedent for *yourself* to be co-indexed with; therefore only the pronoun *you* is grammatical. Now compare [17a] with the imperative construction in [17b], where the reflexive pronoun is co-indexed with an understood pronoun, and the pronoun *you* is ungrammatical.

There is one point that I have not yet addressed, viz. why can *with Sue into the bath* not have two readings? I have shown that it means *Get into the bath along with Sue*, but why can it not mean *Get Sue into the bath*? The reason, I think, has to do with the different features on the two prepositions *with*.

In [14] the preposition *with* has lexical content, i.e. the meaning 'along with, together with, accompanied by' and perhaps even 'in the presence of'. In [15] *with* is a grammatical formative devoid of lexical meaning. Such grammatical prepositions appear in order to give abstract case to their DP complements, which otherwise would be unable to receive case.

In the following examples *of* is a grammatical P that assigns case to the complement of an adjective in [18a] and a noun in [18b]. In [18c, d, e] *of* is a lexical preposition, and the PP has the status of adjunct.

- [18] a. *He is devoid of skill.* (complement, gramm. P)
 b. *He is the owner of a boat.* (complement, gramm. P)
 c. *Of Mice and Men.* (= 'about, concerning')
 d. *He died of hunger.* (= 'as a result of')
 e. *He has a house of ten rooms.* (= 'containing')

Note that in [18c] *of* has to be interpreted as being lexical, since there is no requirement that it be a grammatical P; to put it another way, the PP *Of Mice and Men* is not

a complement, since there is nothing that it can be the complement of. This means that *of* in [18c] cannot be a grammatical P; it must be a lexical P.

Returning now to the structures we were discussing, we can see why [19a] cannot have the reading equivalent to *Put Sue in the bath*. In order for [19a] to have this meaning, *with* would have to be interpreted as a grammatical P, whose function would be to case-mark *Sue* as the complement of some head. But there is no head that *Sue* can be the complement of. Therefore, the reading of *with* as a grammatical P fails, and *with* must be read as a lexical P heading an adjunct phrase. What about the *with* in [19b]? I have shown that [19] has two meanings. I conclude from this that the ambiguity of meaning is a consequence of the ambiguous status of *with* in [19b], and that in the reading where [19b] means *Put Sue into the bath*, then *with* must be a grammatical P.

- [19] a. *With Sue into the bath!*
 b. *Into the bath with Sue!*

We can formulate this informally as follows. A lexical preposition that may function as a grammatical preposition will always be interpreted as lexical unless the syntax demands that it be interpreted as a grammatical preposition. If there is a syntactic requirement that there be a case-marked complement, this takes precedence over the possible interpretation of a PP as an adjunct.

Further evidence to support what I have been saying about lexical and grammatical prepositions and the difference between the verbless imperative and adjunct structures is provided by the following examples. Note how the meaning changes when the order of the PPs is changed. [20a] and [20c] are verbless imperatives containing the grammatical P *with*; in [20b] and [20d] *with* has lexical content, meaning roughly *Now that X is Y*.

- [20] a. *Off with those wet clothes!*
 b. *With those wet clothes off, you won't get pneumonia.*
 c. *Out with the truth!*
 d. *With Sue in the bath, we can get some peace.*

Returning to the starting point of this discussion, we can now see that [21a] is a verbless imperative meaning *Get the hay onto the cart!*, whereas [21b] is ungrammatical in this meaning, and can have only the meaning *Get onto the cart with the hay!*.

- [21] a. *Onto the cart with the hay!*
 b. **With the hay onto the cart!*
 (intended meaning: 'Get the hay onto the cart!')

4.4.4 Argument templates

Let us start by considering the following abstract template. [22] represents the abstract relationship holding between two arguments expressed by a location feature:

[22]	F	[+LOC]	G
	(Figure)		(Ground)

The argument template in [22] is to be understood as the abstract representation of the Figure/Ground relationship between two actors. Examples might be: a picture on a wall, a car in a garage, a man on a horse. If the actors are a cart and some hay, and we foreground [[+LOC] G] we have a verbless imperative such as *Onto the cart with the hay!*

A clause can be formed on the basis of the abstraction in [22] by insertion of a verb whose subcategorization frame is compatible with the template. In the un-

marked case the subject of the verb will be the left-most NP argument (Figure). (I will later show how the rightmost argument (Ground) can become the subject.)

Since [+LOC] is interpretable as either [+LOC,+PATH] or [+LOC,-PATH], the verb slot may be occupied by a State verb or a non-State verb, (taking non-State to refer to Achievement and Accomplishment verbs, and State to refer to Activity and State verbs, as described by Vendler (1967) and Dowty (1979)). Inserting a verb slot (shown as V^1) into the template in [22] gives the template in [23].

[23]	F	V^1	[+LOC]	G
	(Figure)	[±STATE]	[±PATH]	(Ground)

This template gives rise to sentences such as:

- [24] a. [-STATE] [+PATH]
The hay {goes, falls, gets} onto the cart.
- b. [+STATE] [-PATH]
The hay is (lying) on the cart.

Suppose that a third argument, NP^3 , is added to [23]. This third argument will necessarily be an Agent (or Instrument), i.e. the Causer of the State or non-State predicate, and, as the leftmost NP argument, it will be the subject of the causative verb (shown as V^2). The V^1 slot is shown in parentheses, since this slot may also be occupied.

[25]	NP^3	V^2	F	(V^1)	[+LOC]	G
	(Agent)		(Figure)	[±STATE]	[±PATH]	(Ground)

This abstract template will give rise to clauses such as the following.

- [26] a. *The farmer {loaded/put/threw} the hay onto the cart.*
 b. *The farmer caused the hay to be on the cart.*

This is the unmarked order of arguments, i.e the Figure F precedes the Ground G.

4.4.5 Foregrounding the Ground

There are circumstances when a speaker may want to foreground the Ground. By foregrounding the Ground I mean that the Ground is allotted a position earlier in the sentence than its normal unmarked position. If the PP containing the Ground precedes the Figure NP, we have the template in [27].

- [27] NP³ V [+LOC] G F

As it stands, this template will generate an ungrammatical sentence:

- [28] a. **The farmer loaded on the cart the hay.*
 b. **Der Bauer lud auf den Wagen das Heu.*
 'The farmer loaded on the cart the hay.'

The English and German sentences in [28] are ungrammatical because the transitive verbs *loaded* and *lud* have no direct object; *the hay* and *das Heu* cannot be complements to their respective verbs because these NPs are not in the canonical complement position. Note the difference between [28] and the grammatical sentences in [29].

- [29] a. *The farmer loaded t₁ on the cart [the hay that had been harvested the previous week]₁.*

- b. *Der Bauer lud t_i auf den Wagen [das Heu, das vorige Woche
eingebracht worden war]_i.*
the farmer loaded on the cart the hay that previous week
harvested become was

The sentences in [29] are examples of heavy NP shift, i.e. the bracketed NP (the complement of the verb) has been moved from its position as sister of the verb to the end of the clause. These sentences are formed, therefore, in accordance with the template given earlier in [25], in which the Figure precedes the Ground.

In order for the template in [27] to generate a grammatical sentence, something must happen. In fact there is more than one way in which the template in [27] can generate a grammatical sentence. I deal with one way in the next section, and the second way in the next chapter.

4.4.6 Reanalysis of [+LOC] as part of the verb and insertion of grammatical P

We have seen that the template in [27] where the Ground NP is foregrounded generates an ungrammatical sentence. One way that the template can generate a grammatical sentence is for the feature [+LOC] to be realized not as the prepositional head of the PP containing the Ground NP, but reanalysed as part of the verb. When reanalysis takes place the Ground NP becomes the complement of the [+LOC] + V complex, and can then take accusative case. The Figure NP must also have case. The only way that the Figure can be given case is for a grammatical preposition (*mit* 'with') to be inserted. The process that I have just described generates the grammatical sentences in [30].

- [30] a. *The farmer loaded the cart with hay.*
b. *Der Bauer belud den Wagen mit Heu.*
the farmer be-loaded the cart with hay
'The farmer loaded the cart with hay.'

In these sentences the Ground (*cart* and *Wagen*) precede the Figure (*hay* and *Heu*). Note that in the German example the verb is now prefixed by *be-*. It is my proposal this *be-* prefix is an allomorph of the preposition that I have indicated by [+LOC] in the templates. The process is illustrated in [31]. Instead of employing NP³ for the subject, I will henceforth use A (Agent).

[31] a. Template 2

A	V ²	F	[+LOC]	G
<i>Er</i>	<i>lud</i>	<i>das Heu</i>	<i>auf</i>	<i>den Wagen.</i>
'He	loaded	the hay	onto	the cart.'

b. [[+LOC] Ground] is foregrounded

A	V ²	[+LOC]	G	F
<i>*Er</i>	<i>lud</i>	<i>auf</i>	<i>den Wagen</i>	<i>das Heu</i>
he	loaded	on	the cart	the hay

c. Reanalysis of [+LOC] as part of verb and insertion of P[-LOC].

Template 3

A	<i>be-</i>	V ²	G	P	F
<i>Er</i>	<i>be-</i>	<i>lud</i>	<i>den Wagen</i>	<i>*(mitt)</i>	<i>dem Heu</i>
he	<i>be-</i>	loaded	the cart	with	the hay
'He loaded the cart with the hay.'					

4.5 Summary

In this chapter I have shown that *be*-prefixed verbs are formed by head movement in a pre-syntactic morphological component of the grammar. The verbless imperative

shows that argument structure is not dependent on the presence of a verb, and that we should rather think of the arguments as being primary. It is the argument structure that permits insertion of the verb with a suitable subcategorization frame, rather than the verb that requires its argument slots to be filled. I showed by means of the templates, which represent an underlying skeletal framework that the Figure/Ground schema imposes, that the *be*-verbs are derived by head movement of P in order to permit foregrounding of the PP containing the Ground argument.

CHAPTER 5

INCORPORATION: THE MECHANISM FOR DERIVING PREFIXED VERBS

5.1 Introduction

I will show that *be-* prefixation is best accounted for by a process of feature incorporation, similar to the proposal by Baker (1988a,b) for languages such as Chichewa and Shibatani (1990) for Ainu, in which an APPLICATIVE morpheme is the reflex of a preposition. In this view *be-* is an allomorph of a location preposition and is incorporated by adjunction on the verb. Furthermore, a Figure argument may be incorporated by substitution into a *be-* prefixed null verb, giving a prefixed denominal verb. The mechanism that I propose for deriving *be*-simplex verbs and *be*-denominal verbs is the application of two rules of head movement, adjunction and substitution (Roberts 1993, Van Riemsdijk 1998). I consider the differences between the structures involving the APPLICATIVE morpheme in agglutinating languages and structures involving prefixation in German. I conclude that prefixation and noun incorporation in German are not transformational syntactic processes, but rather morphological processes of head movement that take place prior to syntax and feed into the lexicon. The fact that pre-syntactic head movement is constrained by the same rules that obtain in syntax proper is a welcome outcome on the grounds of economy.

5.2 Baker's Incorporation Hypothesis

Baker (1988a, 1988b) observes that there are agglutinative languages that have an APPLICATIVE morpheme that attaches to the verb and alters the realization of the verb's arguments. In the examples from Chichewa given in [1] the APPLICATIVE suffix *-er-* attaches to the verb and allows the PP *kwa mfumu* 'to the chief' to be realized as the first DP object. This is what Baker calls Dative Shift, and what other writers call the to-object/double-object alternation.

- [1] a. *Mavuto a-na-perek-a chitseko **kwa** mfumu.*

Mavuto SP-PAST-hand-ASP door **to** chief

'Mavuto handed the door to the chief.'

- b. *Mavuto a-na-perek-**er**-a mfumu chitseko.*

Mavuto SP-PAST-hand-**APPL**-ASP chief door

Mavuto handed the door to the chief.'

Chichewa (Baker 1988b)

In similar fashion, in an example from Bahasa Indonesian, the APPLICATIVE affix *-kan* allows the PP *kepada Ali* 'to Ali' to be realized as the first DP object.

- [2] a. *Saja mem-bawa surat itu **kepada** Ali.*

I TRANS-bring letter the **to** Ali

'I brought the letter to Ali.'

- b. *Saja mem-bawa-**kan** Ali surat itu.*

I TRANS-bring-**APPL** Ali letter the

'I brought Ali the letter.'

Bahasa Indonesian, from Chung (1976),

cited in Spencer (1991)

There are also examples of an APPLICATIVE affix allowing a PP denoting INSTRUMENT to become realized as an object of the verb.

- [3] *Mavuto a- na- umb -ir -a mpen mtsuko*

Mavuto SP-PAST-mould-APPL-ASP knife waterpot

'Mavuto moulded the waterpot with a knife.'

Chichewa (Baker, 1988a)

The point to note is that all these examples share a common feature, namely that a verbal affix seems to be the reflex of a preposition, regardless whether the PP denotes benefactive, instrument, or location¹.

Baker's account of the alternations that I have just described rests on the assumption that the APPLICATIVE affix is the reflex of a preposition. The head of the PP in the verb phrase in the [a] sentences of [1] to [3] is deleted and the DP that was the complement of the preposition becomes the direct object of the verb. This is shown schematically as:

- [4] a. [VP V [PP P [DP DP]]]
 b. ⇒ [VP V-APPL [PP e [DP DP]]]

Since [4b] is, according to Baker, an instance of Move α in the GB framework, the trace of the deleted P must be properly governed. The applicative affix c-commands and antecedent-governs the trace, thus ensuring that the trace is properly governed.

5.2.1 The realization of pre- and postpositions

The APPLICATIVE morpheme can alternatively realize (or, to use Shibatani's (1990:64) term, 'absorb') a locational postposition. I show the postposition and its alternative realization in bold.

- [5] a. *Poro cise **ta** horarl.*
 big house **in** live
 'He lives in a big house.'

¹ It should, however, be borne in mind that a language with an APPLICATIVE affix does not necessarily employ it in all of the constructions that I have illustrated. There are restrictions, for instance, as noted by Baker (1988b), such that in Chichewa the benefactive and instrumental constructions differ according to the circumstances when they may be realized.

- b. *Porocise e-horari.*
 big house **APPL**-live
 'He lives in a big house.'

Ainu (Shibatani 1990:65)

There is a striking similarity between the Ainu alternation shown in [5] and the German alternation in [6].

- [6] a. *Er wohnt **in** einem großen Haus.*
 'He lives **in** a big house.'
- b. *Er **be**wohnt ein großes Haus.*
 he **be**-lives a big house
 'He inhabits a big house.'

While it is true that we can say that *be*- and the APPLICATIVE morpheme permit absorption of P (prepositions in German, postpositions in Ainu) there are important differences between German and Ainu.

Firstly, *be*- in German is more limited in what prepositions it can alternatively realize than is the APPLICATIVE morpheme. The *be*- prefix is cognate with the preposition *bei* 'by' and is an allomorph of a limited number of locational prepositions, preeminently *in* 'in', *auf*, 'on', *an* 'on', *über* 'about, concerning', *bei* 'with' (locational, as in *He is staying with his friend*)².

This contrasts with the APPLICATIVE morphemes, which are not generally cognate with prepositions or postpositions, and which can absorb a wider range of P than can the *be*- prefix.³ The APPLICATIVE morpheme in Ainu can alternatively realize not just a locational P as in [5] above, but instrumental *with* as in [7].

² I use the term *allomorph* to denote a morpheme whose phonetic form is dictated by the context in which it appears. Thus, the feature [COMPARATIVE] on adjectives in English has (at least) two allomorphs: *more* and the affix *-er*.

³ Shibatani (1990:64) notes that 'applicative formation' in Ainu involves the morphemes *e*-, *o*-, *ko*- without differentiating between them. We are not told the circumstances under

- [7] a. *tek **ari** kar-pe*
 hand **with** make-thing
 'things made by hand'
- b. *tek-**e**-kar-pe*
 hand-**APPL**-make-thing
 'hand-made things'

Ainu; Shibatani (1990:66)

In the following examples the APPLICATIVE morpheme absorbs the equivalents of comitative *with*, the preposition *to* of the Dative Alternation, and the allative preposition *to* (meaning 'towards').

- [8] a. *pone **tura** kuykuy*
 bone **with** bite
 'bite X together with a bone'
- b. *pone **ko**-kuykuy*
 bone **APPL**-bite
 'bite X together with a bone'
- [9] a. *Huci matkaci **orun** upaskuma.*
 grandmother girl **to** tell-old-stories
 'Grandmother told old stories to the girl.'
- b. *Huci matkaci **ko**-paskuma*
 grandmother girl **APPL**-tell-old-stories
 'Grandmother told old stories to the girl.'

which the three morphemes may occur. I presume, therefore, that whatever differences there may be, they are not significant for Shibatani's description of applicative structures. I, therefore, refer in the main text simply to 'the APPLICATIVE morpheme' and disregard the fact that it has three different phonetic realizations in Ainu.

- [10] a. *A-kor kotan ta sirepa-an*
 1SG-have village **to** arrive-1SG
 'I arrived at my village.'
- b. *A-kor kotan a-e-strepa*⁴
 1SG-have village 1SG-**APPL**-arrive
 'I arrived at my village.'

(ibid:65,66)

5.2.2 Noun incorporation

The German and Dutch *be-* prefix and the Ainu APPLICATIVE morpheme enable the verb to incorporate a noun. Note that in Ainu the APPLICATIVE morpheme *e* absorbs the preposition *ari* 'with' and enables *yay-pokisir* 'self's legs' to be incorporated in the verb.

- [11] a. [*Kina-tuy-hosi*] **ari** [*yay-pokisir*] *a-karkar*
 [grass-woven leggings] **with** [self's-legs] 1SG-wrap
 'I wrapped my legs with grass-woven leggings.'
- b. [*Kina-tuy-hosi*] *a-e-yay-pokisiri-karkar*
 [grass-woven leggings] 1SG-**APPL**-[self-legs]-wrap
 'I wrapped my legs with grass-woven leggings.'

Ainu (Shibatani 1990:64)

The sentence in [12b] shows a further construction found in agglutinating languages. Baker (1988a) calls this construction possessor raising.

⁴ The verb-final 1SG morpheme *an* in the [a] example indicates that the verb is intransitive; the verb-initial 1SG morpheme *a* in the [b] example indicates that the verb is transitive (Shibatani 1990:67).

- [12] a. *Fisi a-na-dy-a nsomba z-a kalulu*
 hyena SP-PAST-eat-ASP fish AGR-of hare
 'The hyena ate the hare's fish.'
- b. *Fisi a-na-dy-er-a kalulu nsomba*
 hyena SP-PAST-eat-ASP hare fish
 'The hyena ate the hare's fish.'⁵

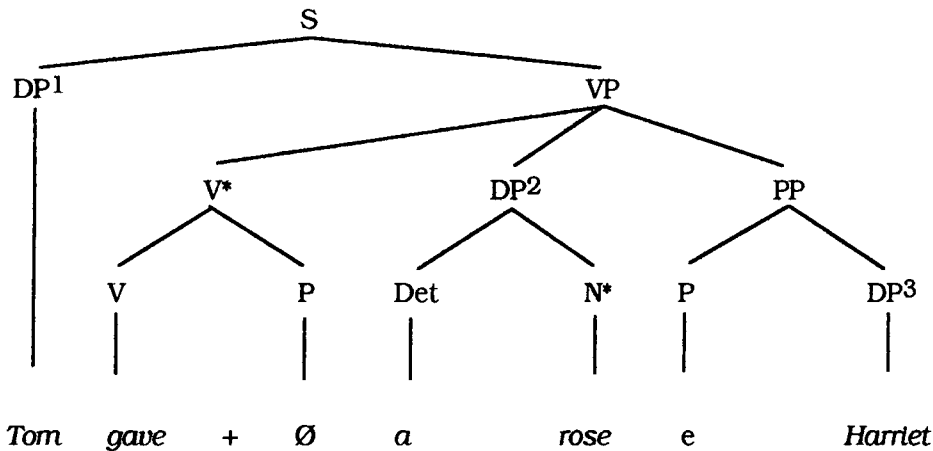
Chichewa (Baker 1988a:271)

In [12b], according to Baker, the noun *spear* has abstractly incorporated into the verb. Baker proposes that in [12b] the noun *nsomba* undergoes abstract incorporation, so that it is linked to the verb as though true incorporation had taken place. This process Baker calls 'reanalysis'. The question that is raised by [12b] is: How do the two DPs *nsomba* and *kalulu* get case? Baker's idea is that the possessor *kalulu* gets case from the verb by virtue of the fact that the possessor is now the complement of the verb; the original direct object *nsomba*, having undergone abstract incorporation (Reanalysis), is now a 'frozen' object. Rather than elaborate a theory of case-assignment as such, Baker proposes the idea of PF Identification (PF for 'phonological form'), so that when a verb that would normally assign case to an argument incorporates that argument, the verb may have a case feature left over that can be assigned to another DP. Thus, *nsomba* in [12b] is PF-Identified, or 'frozen', and *kalulu* can now get case from the verb.

Baker extends his account of applicative verbs to the double-object construction in English. The following tree, adapted from Spencer (1991:288), shows that the head of the PP containing the Goal DP is incorporated on the verb as a zero morpheme.

⁵ Baker does not gloss the morpheme *-er* in the [b] example. We can assume, however, by comparison with a later variant of the sentence, that *-er* in this instance is APPLICATIVE.

[13]



The original direct object of the verb, the noun *rose*, is abstractly incorporated into the verb at LF (shown by asterisks), but in fact remains outside the verb in overt syntax.⁶ The question posed by [13] is this: How does the surface word order arise? As far as I am aware neither Baker nor Spencer have addressed this problem.

⁶ This is an ingenious idea, but is it really applicable to the double-object (dative shift) construction in English? One thing we should bear in mind is that while languages such as Chichewa and Ainu have an overt applicative affix, in languages such as English and German there is no evidence of a verbal morpheme that is involved in the double object construction. Yet Germanic languages can have affixes that are incorporated location prepositions. In other words, we would want to avoid postulating a zero applicative-type affix for the English double-object construction just because Chichewa happens to have one.

I deal more fully with the double-object construction and its relationship to the Locative Alternation in Chapter 13.

Baker further justifies the idea of abstract incorporation in English by using it to account for a type of preposition-stranding.

- (i) *Somebody has slept in this bed.*
- (ii) *This bed has been slept in by somebody.*

In (i) *this bed* is the complement of the location preposition, while in (ii) it has been promoted to subject, stranding the preposition. Baker argues that, for this to happen, *this bed* in (i) has to be the direct object of the compound verb *sleep in*, so that it can undergo passivization. The preposition has undergone abstract incorporation into the verb. I show this schematically in (iii).

- (iii) *Somebody has* [vp [v *slept*] [pp *in* [DP *this bed*]]].
- ⇒ *Somebody has* [vp [v *slept in* [DP *this bed*]]].

German is similar to Ainu in that *be-* permits noun-incorporation on the verb. In the following example the *be-* prefix is the realization of the preposition *an*, and the direct object *Reifen* 'tyre' in [14a] becomes part of the verb in [14b].

- [14] a. *Er machte **Reifen** an das Auto.*
 'He made (= put) tyres on the car.'
- b. *Er **be-reif-te** das Auto.*
 he *be*-tyred the car
 'He put tyres on the car.'

There are crucial differences, however, between noun-incorporation in the Ainu example and the German example. In the Ainu examples the noun *yay-pokstr* 'self's legs' is adjoined to the lexical verb *karkar* 'wrap', whereas in German the noun *Reifen* 'tyre' is incorporated by substitution into a null verb. Adjunction of *Reifen* to a lexical verb is ungrammatical:

- [15] **Er be-reif-machte das Auto.*
 he *be*-tyre-put the car
 Intended meaning: 'He put tyres on the car.'

5.3 The mechanics of incorporation

Baker (1988) proposes that incorporation joins a head to another head, by adjunction. Rizzi and Roberts (1989) and Roberts (1993) extend the theory of head-to-head movement by assuming that head-to-head movement may also be substitution of a head into another head position. Unlike Van Riemsdijk (1998) (see below), Rizzi and Roberts do not predict when substitution and when adjunction take place. Rather

J. Emonds (p.c) suggests a slightly different account for this. He proposes that the NP *this bed* passivises first, stranding the preposition. Secondly, while a stranded P is ungrammatical in most languages, it is allowed if it incorporates (abstractly) at LF.

they develop a lexical device to stipulate the type of incorporation. They propose three possible structures.

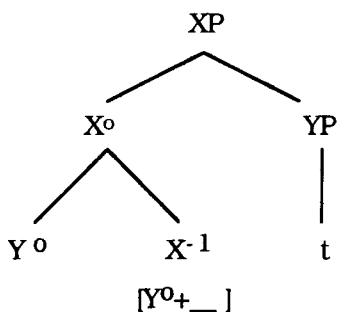
Firstly, in the case where incorporation results in the visible amalgam of the two heads, they assume that the incorporation host morphologically selects the incorporee, hence a structural slot is created at DS as a function of the lexical properties of the incorporation host. An example of this type of incorporation is Agr^0 in French: Agr^0 has the subcategorization frame $[+\text{T}^0 \text{ ______}]$ and T^0 has the frame $[+\text{V}^0 \text{ ______}]$. This means that the features of the head Agr^0 select the head T^0 , whose features in turn select the head V^0 ; the verbal head raises to T^0 and then to Agr^0 . In general, where an incorporation trigger X^0 has the feature $[+\text{Y}^0 \text{ ______}]$, it means that the slot for Y^0 is base-generated within X^0 , triggering substitution of Y^0 during the derivation, leading to the creation of a complex head. In other words, the complex head which triggers incorporation is made up of a slot for the incorporee and an X-element which selects the incorporee. This X-element is notated as X^{-1} , following Selkirk (1982).

The second type of incorporation is possible, if the potential host does not provide a structural slot via morphological selection for the incorporee; in such a case incorporation can take place by adjunction, as in Baker (1988).

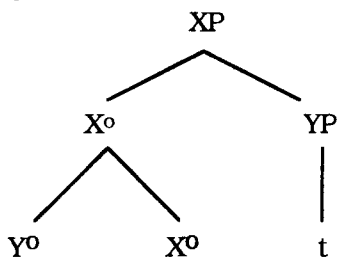
Thirdly, incorporation can take place by means of substitution of a head into an empty head position. This third type of incorporation gives rise to a structure containing categories of a hybrid nature, where X^0 and Y^0 together form the head of XP. The three types of head-to-head movement have the following structures (Roberts 1993:44)⁷:

⁷ In the first draft of this chapter I showed the [a] and [b] trees with Y^0 as the righthand sister of X^{-1} and X^0 as in (Roberts 1993:44). J. Emonds (p.c) informs me, after consultation with I. Roberts, that it is conventionally accepted that substitution and adjunction are to the left. The trees in the main text show this amended order.

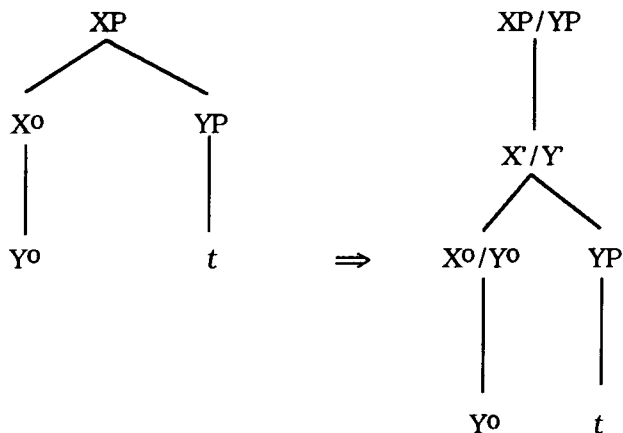
- [16] a. Substitution of Y^0 into X^0 , triggered by X^0 's feature. X^{-1} denotes the element in X^0 which triggers incorporation.



- b. Adjunction of Y^0 to X^0 .



- c. Substitution of Y^0 into empty X^0 .



5.3.1 The Head Adjacency Principle

I propose that the essential difference between Ainu and German with regard to their ability to incorporate nouns into the verb is likely to be due to constraints on head-movement. Van Riemsdijk (1998) proposes that all head movement is of one of two

types, adjunction or substitution, in accordance with the Head Adjacency Principle (HAP).⁸

I will first discuss Van Riemsdijk's distinction between adjunction and substitution. Then, in 5.4, I will show that the structure in [14b] conforms to the HAP, in that *be*-prefixation is an example of head-to-head-adjunction, whereas noun incorporation is an example of the substitution of a head noun into a null verb.

[17] The Head Adjacency Principle (HAP)

A. Head Adjunction: Two phonetically identified heads are joined, yielding an adjunction structure, in which case the two heads must be strictly linearly adjacent at the moment of application of the rule.

B. Head Substitution: A head is moved into a head position which is phonetically empty but which may contain φ -features, thereby unifying the two morpho-syntactic feature matrices.

van Riemsdijk (1998:18-19)

In order to illustrate the effects of adjunction and substitution, I give some of Van Riemsdijk's examples. In [18a] we have an Italian example of what Van Riemsdijk calls PDC (preposition-determiner contraction) (ibid.:28), where the determiner adjoins to the preposition to form one word. In [18c] adjunction is blocked by the intervening quantifier *tutta* 'all'.

- | | | | | |
|------|----|--------------------------|-----|---------------------------|
| [18] | a. | <i>*con la famiglia</i> | vs. | <i>colla famiglia</i> |
| | | 'with the family' | | |
| | b. | <i>tutta la famiglia</i> | vs. | <i>*la tutta famiglia</i> |
| | | 'all the family' | | |

⁸ I am grateful to H. van Riemsdijk for sending me a copy of his manuscript.

- c. *con tutta la famiglia* vs. **colla tutta famiglia*
 'with all the family'

Italian (ibid.:49)⁹

Van Riemsdijk illustrates head substitution with V-to-C raising in Dutch, which shows the complementary distribution of the complementizer and a fronted finite verb.

- [19] a. **Hebben** ze gelachen?
 'Have they laughed?'
 b. *Ik denk dat ze gelachen hebben.*
 I think that they laughed have
 'I think that they have laughed.'
 c. *Gelachen dat ze hebben!*
 laughed that they have
 'Boy, did they laugh!'

Van Riemsdijk (ms.:8)

The first example is a main clause in which the finite verb is fronted. In the corresponding embedded clause, [19b], the finite verb remains behind and the complementizer appears. In [19c] the finite verb remains behind in a main clause context and the complementizer again appears.

⁹ Van Riemsdijk also illustrates PDC in German, as shown by (i). PDC is prevented from operating in (ii), hence the ungrammaticality of (iii), since the preposition and determiner are not strictly linearly adjacent, i.e. there is intervening structure between the preposition *von* 'of' and the determiner *dem* '(to) the'.

- (i) *von dem König* = *vom König*
 'of the king'
(ii) *von* [DP [D e] [AP *dem König treu ergebenen*] [N *Dienern*]
 of the_{DAT} king faithfully devoted servants
 'of (the) servants faithfully devoted to the king'
(iii) **vom König treu ergebenen Dienern*
 of-the king faithfully devoted servants
 Intended meaning: 'of the servants faithfully devoted to the king'

5.4 Incorporation and the be-verbs

5.4.1 Noun Incorporation and Reanalysts

We can now analyse the morpho-syntax of *be*-verbs according to Van Riemsdijk's HAP. The *be*-prefix is an example of adjunction of an allomorph of a PATH preposition to a lexical verb, and noun-incorporation into a *be*-verb is an example of substitution of a head into a verbal head.

Returning now to the argument templates that I introduced in 4.4.4 and 4.4.5, [20a] is the representation of the sentence in [20b], in which there are two VP-internal arguments in the order: direct object F (Figure), and a PP containing G (Ground). The template gives the unmarked order of arguments: F [+LOC] G.

- [20] a. Agent V F [+LOC] G
- b. *Er machte Reifen an das Auto.*
- 'He put tyres on the car.'

The second template, given in [21], is the case where [[+LOC] G] is foregrounded. This is a marked word order.

- [21] a. ?Agent V [[+LOC] G] F
- b. ?*Er machte an das Auto Reifen.*
- he put on the car tyres

I propose that there are two possible realizations of the template in [21], according to how F is realized. According to the HAP, F cannot adjoin to V since it is not adjacent to V in [21]; adjunction is prevented by the adjacency to V of [+LOC] and its complement G. Since F cannot adjoin to the verb, it can either (i) substitute for a null verb (incorporate into a null verb), or (ii) if there is no null verb (if _____V is filled by lexical material), it can and must remain where it is.

The first of these two possibilities is shown in [22]. In [22a] the verb is empty and substitution of F into the null verb is permitted. This is shown in [22b].

[22] a. A null V [+LOC] G F
 Er *an* *das Auto* *Reifen*

b. $\Rightarrow$ A [+LOC]_i - F_j- V e_i G e_j
 Er ***be-reif-te*** *das Auto.*
 he *be-tyred* the car
 'He made (= put) tyres on the car.'

The alternative structure, when the Figure remains in situ, arises when substitution of F into the verb is prevented by the presence of lexical material in the verb. This is shown in [23], where the verb *laden* 'load' remains in [23b] and [23c]. Adjunction is not possible, since F is not adjacent to the verb. Substitution of F into the verb is now also not possible, since it would mean deletion of lexical material. The only alternative is for F to remain *in situ*.¹⁰ The resulting structure is shown in [23c].

[23] a. A (lexical) V F [+LOC] G
 Er *lad* ***Stroh*** ***auf*** *den Wagen*
 'He loaded straw on the cart.'

¹⁰ We might ask at this point why it is that F cannot abstractly incorporate into the verb, i.e. remain *in situ* as a 'frozen' object. The answer is that F cannot incorporate directly, since substitution into the verb would delete the verb *laden* 'load'. But since direct incorporation by substitution is disallowed, so also is 'frozen' incorporation. This means that the only way to save the sentence is to case-mark F by insertion of the grammatical preposition *mit* 'with'. I take this to be in line with Baker's PF-Identification, the late insertion of a grammatical P to satisfy the Case Filter.

- b. ?A (lexical) V [+LOC] G F
 Er lud auf den Wagen Stroh
 he loaded on the cart straw

- c. $\Rightarrow$ A [+LOC]_I-lexical V e_I G P F
 *Er be- lud den Wagen *(mit) Stroh.*
 'He be-loaded the cart with straw.'

5.4.2 When abstract incorporation is not permitted

Having illustrated Baker's notion of abstract incorporation we can now provide at least a partial answer to the question why it is that F *Stroh* 'straw' is not abstractly incorporated into the prefixed verb, but must be case-marked by *mit* 'with'.

In all the examples given by Baker (1988a) and Shibatani (1990) where a noun is abstractly incorporated into the verb, actual incorporation could have taken place. A corollary of the HAP, in my view, is that only one head may substitute into another head. The reason for this is clear: if a head has substituted into a verb, substitution of a second head would delete the phonetic content of the first head. This restriction on multiple substitution applies equally to abstract incorporation that leaves a frozen argument *in situ*; abstract incorporation can take place only if actual substitution can take place.

In the German example in [24b] incorporation of *Stroh* is not possible whether by adjunction (F is not adjacent to the verb), as in [24a], or by abstract substitution (prevented by presence of a lexical verb), as in [24b]. The only means of creating a grammatical sentence is the insertion of a grammatical P *mit* 'with'.

- [24] a. Ungrammatical incorporation of F to lexical verb
 **Er be-Stroh-lud den Wagen.*
 he be-straw-loaded the cart

- b. Ungrammatical abstract incorporation of F

**Er belud den Wagen Stroh.*
he *be*-loaded the cart straw

- c. Grammatical insertion of P

*Er belud den Wagen *(mit) Stroh.*
'He *be*-loaded the cart with straw.'

Compare the following English examples, where noun-incorporation is not possible into a lexical verb:

- [25] a. **He seed-planted the field.*
**He water-sprinkled the lawn.*
**He cork-fitted the bottles.*
**He straw-loaded the cart.¹¹*

Noun-incorporation in English is also possible only when F can substitute into a null V.

- [26] *He seeded the field.*
He watered the lawn.

¹¹ Swedish allows structures of this type, according to Josefsson (1997:70), as long as there is a direct object (here *gässen* 'the geese' in the canonical structural position. Thus (i) is licit, whereas (ii) is ungrammatical.

- (i) *Bonden ving-klippte gässen.*
farmer-the wing-clipped geese-the
'The farmer clipped the wings of the geese.'
- (ii) **Rebecka bok-skriver.*
R. book-writes
(intended meaning) 'R. writes books.'

He corked the bottles.

?*He strawed the cart.*¹²

This applies also in German. Compare the sentences in [27]. Adjunction of *be-* and substitution into a null verb of *Reifen* 'tyre' gives [27b].

[27] a. *Er machte Reifen an das Auto.*

'He put tyres on the car.'

b. *Er bereifte das Auto.*

he *be-*tyred the car

'He put tyres on the car.'

So far I have shown under what circumstances adjunction and substitution may occur in German according to Van Riemsdijk's HAP, and that when neither type of head movement is possible insertion of a grammatical formative such as *mit* 'with' is necessary.

5.4.3 The prohibition on incorporation of the Ground

Recall that I showed in (3.3.3.1) that there are no CLASS V *be*-verbs in German, i.e. verbs that incorporate the Ground. A problem with the HAP, as it stands, is that it fails to prohibit structures such as the following, where it is the Ground that is incorporated by substitution:

[28] a. **Er be-flaschte den Wein.*

he *be-*bottled the wine

¹² I would maintain that this is a possible lexical innovation in English. Its oddness may be due to the fact that noun-incorporated verbs like *seed*, *cork*, *water*, *arm*, *plaster*, *wallpaper*, *paint* etc. have entered the lexicon, whereas *straw* has not. Thus, *straw* is possible in principle, but has not, as far as I know, been lexicalised; *strawseed*, on the other hand, is impossible in principle.

**Er be-garagte das Auto.*

he *be*-garaged the car

**Er be-mülltonnte den Müll.*

he *be*-binned the rubbish

**Er be-ordnerte die Papiere.*

he *be*-filed the papers

b. A v [+LOC] G F

Assuming the template given in [28b], the HAP predicts that [+LOC] can adjoin to the verb. G (*Flasche*, *Garage* etc.) cannot adjoin since it is not linearly adjacent to the verb. Unfortunately, G can, according to the HAP, substitute into a null verb, but this gives rise to the ungrammatical sentences in [28a].

What, in effect, has happened in the ungrammatical examples in [28] is that the whole of the PP containing the Ground argument has been incorporated into the verb.

In contrast to the German examples in [28] the APPLICATIVE morpheme in Ainu can incorporate the P as well as the noun complement of the same P.

[29] *Ratki apa a-sapa-e-puni.*

hung door 1SG-head-**APPL**-lift

'I lifted the suspended door with my head.'

Ainu (Shibatani 1990:68)

This is tantamount to the incorporation of the whole PP meaning 'with my head'.

Contrast [29] with an example in which the APPLICATIVE morpheme absorbs a P that is not associated with the incorporated noun.

- [30] *Siatuy-noski ko-cip-terke-re.*
 ocean-middle **APPL**-ship-run-CAUS
 '(They) ran the ship in the middle of the ocean.'

Ainu (Shibatani 1990:69)

In this example the APPLICATIVE morpheme absorbs the location P that heads the postpositional phrase 'in the middle of the ocean', while the incorporated noun meaning 'ship' is the other argument.

It seems that the Ainu APPLICATIVE morpheme can effect incorporation of either F or G, whereas the German *be*-prefix enables only F to be incorporated.

In Ainu it is also possible for two APPLICATIVE morphemes, each of which absorbs a different postposition, to adjoin to the verb.

- [31] *Asinuma ekasi matkaci a-e-ko-paskuma*
 I g. father girls 1SG-**APPL**-**APPL**-tell an old story
 'I told girls an old story about Grandfather.'¹³

Ainu (Shibatani 1990:66)

In this example we see that the first APPLICATIVE morpheme *e* indicates the meaning 'about, concerning' and relates to Grandfather, while the second *ko* indicates the dative relation 'to the girls'.

There is no counterpart to this double APPLICATIVE in German, i.e. there are no verbs in German that have more than one prefix¹⁴. The prohibition on double prefixation in German falls out naturally from the HAP, since only one head can be linearly adjacent to the verb. The past participle of German verbs is typically formed

¹³ I give here Shibatani's gloss and translation (together with *g.* for 'grand-'), although I suspect the gloss to be wrong. *Asinuma* is glossed as 'I', whereas in other examples there is no first person pronoun.

¹⁴ An apparent counter-example such as *ver-un-glücken* 'come to grief', where there are two prefixes *ver-* and *un-*, is not an exception to the prohibition of double prefixation. This verb is formed by incorporation of the noun *Unglück* 'misfortune', which is the antonym of *Glück* 'good fortune' formed by prefixation of the noun/adjective prefix *un-*: [*ver-* [[*un-*] [*glück*_N]_N]_V].

by prefixation of *ge-* and suffixation of *-t* or *-en*, but prefixation of *ge-* is blocked by the presence of another prefix such as *be-* or *ver-*. This gives rise to past participles like *(*ge-)beschmiert* from *beschmieren* 'be-smear', and *(*ge-)verstanden* from *verstehen* 'understand'. Similarly, prefixation of *be-* on a verb that already carries the *ent-* prefix is blocked: *(*be-)entkommen* 'escape'. I return to the ban on double prefixation in German in 9.2.2.

The prohibition on multiple prefixation in German means that there can be no constructions in German in which two prepositions are realized as allomorphs on the verb. (I take a bare oblique case to be an alternative realization of a preposition. See 9.3.2)

- [32] a. *Er schrieb seinen Kindern_{DAT} über seine Erlebnisse.*

'He wrote (to) his children about his experiences.'

- b. **Er be-be-schrieb seine Kinder seine Erlebnisse.*

he be-be-wrote his children his experiences

Intended meaning: same as in [a]

Effectively the HAP also rules out, for German, sentences where both Figure and Ground are realized in the accusative. The first accusative object would get case from being the complement of the verb; the second accusative object would get case by virtue of being a frozen complement of the verb. But as we have seen, a frozen argument that remains *in situ* must have been able to adjoin to the verb (if adjacent), or substitute into the verb (if not adjacent). Adjunction, therefore, is ruled out for the second argument, and substitution would delete the lexical verb, and is therefore also ruled out. Thus verbs with two accusative arguments are in principle ruled out by the HAP¹⁵.

¹⁵ In fact, verbs that allow two accusative objects in German are quite rare. The commonest are *lehren* 'teach' and *'kosten'* cost.

At this point let us regard the evident differences between the Ainu APPLICATIVE morpheme and the German *be-* prefix to be due to more fundamental differences between the languages. I consider *be-* prefixation not to be a syntactic transformation. Although the German prefixes *be-*, *ver-*, *er-*, *ent-* are discrete morphemes and have a degree of productivity, it is hardly possible that German speakers recognize them as deriving from prepositions. Furthermore, verbs such as *beschmieren* 'be-smear', *bewaffnen* 'be-arm', *verdünnen* 'ver-thin, dilute' are available to German speakers because they are listed in the lexicon. We assume, too, that the lexicon also contains subcategorization information that may restrict the type of argument that may appear with a particular verb.

Thus, while the simplex verb *treten* 'step, walk' is compatible with a wide range of NP complements to the preposition *auf* 'on', the corresponding *be-*verb (which realizes *auf* as its prefixal allomorph *be-*) is more limited in the range of acceptable complements.

- [34] a. *Er trat auf {den Rasen/den Teppich/den Strand/die Straße}.*
 he stepped onto the grass/the carpet/the beach/the street
 'He walked onto the grass/carpet/beach/street.'
- b. *Er betrat {den Rasen/*den Teppich/?den Strand/*Straße}.*
 he be-stepped the grass/the carpet/the beach/street
 'He walked onto the grass/carpet/beach/street.'

Similarly, there are restrictions on what nouns may be incorporated into a *be-*verb.

-
- (i) *Er lehrte mich_{ACC} die französische Sprache_{ACC}.*
 'He taught me the French language.'
- (ii) *Das kostete ihn_{ACC} seinen Kopf_{ACC}.*
 'That cost him his head.'

Even with these verbs some speakers prefer the first object to be in the dative case (Duden 1959:453).

- [35] a. *Waffe* 'weapon'
Schwert 'sword'
Gewehr 'gun'
Dolch 'dagger'
Knüttel 'cudgel, truncheon'
- a'. *bewaffnen* 'arm, provide with a weapon'
**beschwerten* 'arm, provide with a sword'
**begewehren* 'arm, provide with a gun'
**bedolchen* 'arm, provide with a dagger'
**beknütteln* 'arm, provide with a cudgel'
- b. *Nagel* 'nail'
Schraube 'screw'
- b'. *benageln* 'nail, put nails in'
**beschrauben* 'screw, put screws in'

Possible forms such as **verwärmen* 'ver-warm', **verneuern* 'ver-new' (i.e. well-formed by analogy with other deadjectival verbs) are not in the lexicon; they are blocked, in the sense of Aronoff (1976), by the already lexicalised verbs *erwärmen* 'er-warm, warmup' and *erneuern* 'er-new, renew'.

It is also the case that there are simply gaps in the lexicon; although German has the means to derive verbs by incorporating an adjective, such as those in the last paragraph, this does not mean that all adjectives give rise to verbs.

- [36] a. *krank* 'ill'
gesund 'healthy, well'
schön 'beautiful'
häßlich 'ugly'
nett 'nice'

b'. { <i>*ver/er</i> }- <i>kranken</i>	'become ill'
{ <i>*ver/*er</i> }- <i>gesunden</i>	'get well'
{ <i>ver/*er</i> }- <i>schönern</i>	'beautify'
{ <i>*ver/*er</i> }- <i>häßlichen</i>	'uglify'
{ <i>*ver/*er</i> }- <i>netten</i>	'become/make nice'

5.5 Syntax or morphology?

In proposing that German *be*-verbs are formed in a (morpho-syntactic) component of the grammar distinct from lexical word-formation on the one hand, and syntax on the other, I am following, in spirit, Van Riemsdijk:

I am assuming ... that there still is such a thing as an independent morphological component in the grammar. In view of the multitude of recent proposals to attribute a considerable role in the assembling of complex words, in particular inflected words, to syntax, complicated questions arise as to the division of labour between syntax and morphology.

Van Riemsdijk (ms.:22)

The APPLICATIVE morphemes, on the other hand, do seem to be brought about by a syntactic transformation. Shibatani (1990:68) illustrates the derivational steps whereby the APPLICATIVE morpheme incorporates firstly the postposition (comitative 'with') in [37b] and secondly the noun complement of the postposition, shown in [37c]. The process whereby [b] and [c] are derived from [a] is fully in accordance with Baker's Incorporation mechanisms. All three sentences have the same meaning.

- [37] 'I bit that fish with its bones.'
- a.

Nea cep

pone tura

a-kuykuy.

that fish

bone **with**

1SG-bite
- b.

Nea cep

pone

a-ko-kuykuy.

that fish

bone

1SG-**APPL**-bite

- | | | |
|----|----------------|-----------------------------|
| c. | <i>Nea cep</i> | <i>a-pone-ko-kuykuy.</i> |
| | that fish | 1SG-bone- APPL -bite |

It is implausible that Ainu has a verb listed in its lexicon that means 'bite together with the bones'. The difference between a German *be*-verb and an Ainu verb containing an APPLICATIVE morpheme is essentially the difference between a synthetic (fusional) language (taking German to be more synthetic than analytic) and an agglutinating language like Ainu. It is likely that polymorphemic words in a fusional language come into existence in a different way than do polymorphemic words in an agglutinating language. This is what van Riemsdijk (1998)) means by his principle of 'Derivational Transparency'.

... (It) would be reasonable to assume that agglutinating structures are more likely to be the result of the syntactic assemblage of the parts from functional head positions than are fusional structures. What this means is that we assume that morphemes that are attached to some other form in the process of a syntactic derivation remain transparently recognizable.

(Van Riemsdijk 1998:22)

5.6 Summary

In this chapter I illustrated the superficial similarities and differences between incorporation in agglutinating languages, as described by Baker (1988a,b) and Shibatani (1990), and constructions in German, whereby the allomorph of a location preposition and the Figure argument may both be incorporated into the verb. I showed that the derivation of *be*-verbs, formed either by prefixation to simplex verbs or by incorporation of a head noun, conforms to the constraints on syntactic head movement of the HAP (Van Riemsdijk 1998), whereby adjunction may take place if the head that moves is adjacent to the head to which it adjoins. Where adjacency does not obtain, the only permissible movement is substitution, whereby a non-adjacent head substitutes into the target head. The HAP also predicts the necessity

for insertion of a grammatical P to case-mark the Figure argument in those cases when the Figure cannot substitute into the verb, i.e. when the verb slot is filled by lexical material.

The evidence suggests that incorporation in agglutinating languages like Chichewa and incorporation in a synthetic language like German operate in different components of the grammar: the former is likely to be syntactic head movement, whereas the latter takes place in a pre-syntactic morphological component of the grammar that has direct access to the lexicon.

CHAPTER 6

AGAINST A SMALL CLAUSE

ANALYSIS OF PREFIXED VERBS

6.1 Introduction

This chapter presents a discussion on the status and syntax of the Dutch adjective *vol* 'full' (German *voll*). Mulder (1992a) proposes that *vol* alternates with the *be-* prefix, and that constructions involving these morphemes are Small Clauses (SC). I reject a SC analysis for *be-* and show that limitations on extraction pose a problem for a SC analysis, and that there are restrictions on the proposed alternation between *be-* and *vol*. I also show that Mulder's idea that the direct object of a simplex verb is always an effected object, in contrast to the same direct object of the *be*-prefixed simplex, is untenable. Instead I propose that the former direct object is a THEME, whereas the latter is a Ground.

6.2 The *be-* prefix and the Dutch adjective *vol*

Mulder (1992a) observes an apparent alternation between the Dutch *be-* prefix and the adjective *vol* 'full':

- [1] a. *Hij *(be)plakte de muur met foto's.*
 he *be*-pasted the wall with photos
 'He pasted the wall with photos.'¹
- b. *Hij plakte de muur *(vol) met foto's.*
 he pasted the wall full with photos
 'He pasted the wall with photos.'

¹ The Dutch examples in this section are all from Mulder (1992a). Mulder gives only the English gloss. All the translations in single inverted commas are mine. For the sentence in [1b] I give the same translation as for [1a], since I think that Mulder sees no difference between the semantics of the two sentences. In fact, however, I think that a better translation for [1b] would be 'He pasted photos all over the wall.' I will shortly show that the [a] and [b] sentences are not, *contra* Mulder, alternations.

- a'. *Hij *(be)plant de tuin met tulpen.*
 he be-plants the garden with tulips
 'He plants the garden with tulips.'
- b'. *Hij plant de tuin *(vol) met tulpen.*
 he plants the garden full with tulips
 'He plants the garden full of tulips.' (1992:ch.7)

Mulder analyses the (b) sentences as containing a Small Clause (SC) *de muur vol met foto's* 'the wall full with (=of) photos' that is the complement of the verb *plakte* 'pasted'. The (b) sentences have, according to Mulder, the general form:

[2] Verb [SC NP_{loc} A_{compl} PP_{mat}]

Thus, the SC consists of a location NP (the Ground, in my terms), the adjective *vol* 'full', which Mulder takes to denote 'completion', and a PP containing the NP that denotes the material (the Figure, in my terms). Mulder argues that the bracketed constituent in [2] is a SC by analogy with other SC usages of *vol*.

- [3] a. *Hij deed de zak vol*
 he did the bag full
 'He filled the bag.'
- b. *De zak {is/schijnt/lijkt} vol*
 'The bag {is/seems/appears} full.'
- c. *met de zak vol*
 'with the bag full'

Mulder concludes that since the wall ends up full of photos, i.e. the wall is full of photos, the complement of the verb in [1] is a SC headed by *vol*.

Mulder then argues, on the basis of the apparent parallels in [1], that, since *vol* and the *be-* prefix are in complementary distribution in these sentences, then it follows that the *be-* prefix must also be the head of a SC². Mulder's prime purpose in associating *vol* and *be-* is to show that, just as *vol* imparts to the verb the semantic notion of 'completion', this notion of 'completion' is also contained in the prefix *be-*.³

I will not here recapitulate the arguments for and against SCs in principle. (See Stowell 1981, Chomsky 1981, Williams 1983.) I will rather assume for the moment that Mulder is right in ascribing SC status to the verbal complements in [1a] and [1a']⁴. The difficulties arise when *be-* is argued to be an allomorph of *vol*.

² Curiously, Mulder states explicitly that he analyses *vol* as the cognate (sic) of *be-*, citing Hoekstra, Lansu and Westerduin (1987). I will use the term 'allomorph' for the apparent relationship between *vol* and *be-*.

³ Interestingly, Hungarian has a similar alternation, whereby *tele* 'full' alternates with a perfective morpheme, though not with a location P.

- (i) *A paraszt (rá)-rakta a szénát_{ACC} a székérre.*
the peasant loaded the hay the wagon-on
'The peasant loaded the hay onto the wagon.'
- (ii) *A paraszt meg-rakta a székéret_{ACC} (szénával).*
the peasant PERF.loaded the wagon (with hay)
'The peasant loaded the wagon with hay.'
- (iii) *A paraszt tele-rakta a székéret_{ACC} (szénával).*
the peasant full.loaded the wagon (with hay)
'The peasant loaded the wagon with hay.'

(Spencer and Zaretskaya 1998:14)

The morpheme *rá* in (i) appears to be 'a pleonastic specifier of location' (op.cit. 14), and the true alternation is, therefore, not between *tele* 'full' and a location prefix, but between *tele* and the perfectiviser *meg*. This, and the fact that the Hungarian preverbs are not true prefixes (Ackermann 1992) suggests that we should exercise caution in drawing any parallels between the Hungarian and Dutch constructions.

⁴ It is, for instance, not at all clear what the structure of a SC is. Mulder assumes without argument that *vol* is the head of a SC. He does not address the awkward question posed by such a structure, viz. If *vol* is the head of the SC, then the SC is by definition a AP. This is difficult to defend.

6.3 Problems with Mulder's analysis

6.3.1 Extraction from Small Clauses

The first problem with Mulder's SC analysis of *be*-verbs has to do with the possibility of extraction out of the SC. It is possible to extract either the NP or the AP from [4]:

- [4] a. *How_i does John eat [SC his meat t_i]?*
 b. *What_i does John eat [SC t_i raw]?*

Taking a German example, [5] shows the impossibility of extracting *voll*, the putative head of the SC.

- [5] a. *Er lud den Wagen voll mit Heu.*
 he loaded the cart full with hay
 'He loaded the cart with hay.'
 b. **Wie_i lud er [SC den Wagen t_i mit Heu]?*
 how loaded he the cart with hay
 'How did he load the cart with hay?'

Thus it seems that, if the adjective *vol/voll* cannot be felicitously extracted, the argument for proposing that *vol/voll* is the head of a SC unconvincing.

6.3.2 Restrictions on the distribution of *vol*

A second problem with Mulder's analysis is the fact that *vol* is not everywhere an allomorph of *be*. I will give two different examples. The first example is of the *swarm/team* type of alternation and is from Mulder (1992:ch.7).

- [6] a. *Het bad stroomt vol met water.*
 the bath streams full with water
 'The bath is full of water.'

- b. *Het water (*be)stroomt in het bad.*
 the water streams in the bath
 'The water pours into the bath.'

In [6a] we have the familiar *vol met* NP, but this time *vol* may not be alternatively realized by its apparent allomorph *be-*, as shown by the ungrammaticality of [6b]. Similarly in the following examples the *be-* prefix may not be alternatively realized by *vol/voll*.

[7] Dutch

- a. *Hij trad in de kamer.*
 he stepped in the room
 'He entered the room.'
- b. *Hij betrad de kamer.*
 he *be*-stepped the room
 'He entered the room.'
- c. **Hij trad [SC de kamer vol].*
 he stepped the room full
 Intended reading: 'He entered the room.'

[8] German

- a. *Er trat in den Raum.*
 he stepped in the room
 'He entered the room.'
- b. *Er betrat den Raum.*
 he *be*-stepped the room
 'He entered the room.'
- c. **Er trat [SC den Raum voll].*
 he stepped the room full
 Intended reading: 'He entered the room.'

The [a] and [b] examples show that *be-* is an allomorph of the preposition *in*. The [c] examples show the ungrammaticality of substituting *voll* for *be-*. Note that it cannot be claimed that it is the absence of a PP equivalent of *met water* 'with water' in the SC that makes [c] ungrammatical. Mulder states explicitly that he regards the PP in the structure

[9] Verb [SC NP_{loc} A_{compl} PP_{mat}]

as an adjunct. I take it then that the PP is never obligatory. Since the PP is not obligatory there seems no reason, under Mulder's account, why [7c] and [8c] should be ungrammatical. Mulder does not address this problem.

6.3.3 The allomorphic relationship

Mulder offers no explanation for the allomorphic relationship between a verbal prefix (which is cognate with a preposition) and an adjective⁵. Assuming that it is possible in principle for a word of one category to be an allomorph of a word of a different category, we should be able to provide some explanation for the fact.

It might perhaps be argued that *vol/voll* is not really an adjective in the SC constructions in which it alternates with *be-*. Surely, however, it is precisely because *vol/voll* is an adjective that a SC analysis has been proposed in the first place. It is a pity that Mulder does not address the problem of how to get from one category to another. This leads to the fourth problem, viz. the structure of a SC headed by the *be-* prefix.

6.3.4 Small Clause structure

Mulder does not give an analysis for the structure that he proposes for a SC headed by *be-*. He does not explicitly state what a Deep Structure SC headed by *be-* looks like, but we can assume, I think, that what he has in mind is that a SC containing

⁵ The *be-* prefix is cognate with the preposition *bei* 'by'. See also 3.1.

be- has the same structure as a SC headed by *vol*, in other words the structure in [10].

[10] ... Verb [SC NP_{loc} *be*-compl PP_{mat}]

While the structure I give in [10] is an assumption on my part, Mulder does give a structure for denominal *be*-verbs. For Mulder a *be*-verb that incorporates a noun has a causative reading. In order to capture the causative nature of such verbs he proposes that underlyingly there are two empty light verbs, CAUSE and HAVE.

- [11] a. *Jan bebest het terrein.*
 Jan be-woods the land
 'Jan plants the land with trees.'
- b. Jan CAUSE het terrein HAVE [bos *be-*]
 Jan CAUSE the land HAVE [wood *be-*]

I will not at this stage comment on the empty light verbs that Mulder introduces into [11b], except to say that if the second light verb is HAVE there is an obvious difficulty in ascribing a meaning to *be-*. If the second light verb were BE, then we could more readily accept that the prefix *be-*, as an allomorph of *vol*, also conveys the meaning 'full', i.e. [CAUSE the land BE full of wood].

More important is the structure of [11b]. Presumably, although it is not explicitly stated by Mulder, *be-* attaches itself to the N *bos* 'wood' and then somehow raises to the head of IP. Note that there is a significant difference between the SC in [11] and the SC in [1b]. In the examples where Mulder proposes that *be-* is an allomorph of *vol*, the other members of the SC are the full phrases NP and PP, as in [12a]. The SC in [11] consists of a head N and the *be-* prefix, as in [12b].

- [12] a. [SC NP_{loc} {be-/vol}_{compl} NP_{mat}]
 b. [SC N_{mat} be-]

Mulder offers no argumentation to support the idea that a SC can consist of a head noun and a verbal prefix. [12] seems a long way from the sort of SC in [13a] (Rizzi 1986) or [13b]:

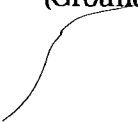
- [13] a. *John eats* [SC *his meat* *raw*].
 b. *We consider* [SC *John* *intelligent*].

6.4 The prefix *be-* is not an allomorph of *vol/voll*

The problems that I have just outlined all stem from the initial premise that Mulder makes, i.e. that *be-* alternates with *vol* and that *be-* is therefore an allomorph of *vol*. The problems disappear once we accept that *be-* is not an allomorph of *vol* and that the sentences in [1], here repeated, are not directly related to each other.

- [14] a. *Hij *(be)plakte de muur met foto's.*
 'He *be*-pasted the wall with photos.'
 b. *Hij plakte de muur *(vol) met foto's.*
 'He pasted the wall full with photos.'

I propose that in [14a] we have a *be*-verb that takes two internal arguments, a Ground direct object and a PP containing a Figure argument, and that in [14b], on the other hand, we have a verb that takes a non-Ground argument. I will call an argument that is neither a Figure nor a Ground a THEME. Thus, *de muur* 'the wall' in [14b] and *Hasen* 'hares' in [15a] are THEME arguments. Compare them with [15b] and [15c], which I claim to have a Figure subject and a Ground direct object.

- [15] a. *Er schießt Hasen.* (THEME argument)
 'He shoots hares.'
- b. *Er schoß *(auf) den Feind.* (Ground argument)
 he shot on the enemy
 'He shot at the enemy.'
- c. *Er *(be)schoß den Feind.* (Ground argument)
 he *be*-shot the enemy
 'He bombarded the enemy.'
- 

What these examples show is that the *be*- prefix is an allomorph of a PATH preposition, in this case *auf* 'on', just as I am claiming it is in the *load/spray* sentences of the Locative Alternation (Chapter 3). The *be*- prefix is in no way associated with the semantic feature 'completion'.

6.5 Thematic objects and Ground objects

Let us return now to the pair of sentences that led Mulder to regard *be*- to be an allomorph of *vol*. I repeat them here.

- [16] a. *Hij *(be)plakte de muur met foto's.*
 'He *be*-pasted the wall with photos.'
- b. *Hij plakte de muur *(vol) met foto's.*
 'He pasted the wall full with photos.'

In my view the first sentence is an example of a *be*-verb taking a Ground direct object; the Figure *foto's* is in the PP. The second sentence contains a prefixless verb that takes a THEME direct object. Note that when the simplex verb takes a Figure direct object, the Ground is in a PP headed by a PATH preposition.

- [17] *Hij plakte foto's op de muur.*
 'He pasted photos on the wall.'

The analysis that I am proposing for [16a] and [16b], i.e. that the *be*-verb takes a Ground direct object and the simplex verb takes a THEME direct object is indirectly borne out by an observation that Mulder makes regarding the apparent optionality of the *be*- prefix. Consider the following examples.

- [18] a. *Hij goot de planten {met/van} brons.*
 he poured the plants {with/of} bronze
 'He cast the plants in bronze.'
- b. *Hij begoot de planten {met/van} brons.*
 he *be*-poured the plants {with/of} bronze
 'He poured bronze over the plants.' (thus destroying them)

Mulder's idea is that the *be*- prefix is not optional in these sentences; the sentences have different meanings. In the case of *goot de planten* the simplex verb effects the direct object, i.e. the act of pouring brings the plants into being. On the other hand, in *begoot de planten* the plants are already there and are being supplied with bronze, in other words the plants are being affected, not effected.

While I think that Mulder is right in deciding that there is no optionality of the *be*- prefix, and that there is, therefore, a difference of meaning between the sentence containing a simplex verb and the sentence containing a *be*-prefixed verb, where both verbs take the same direct object, I think it problematic to assume that the direct object of the simplex verb is always an effected object.

Mulder tries to maintain the idea of effectedness in the next example.

- [19] a. *Hij spuit de auto met verf.*
 'He sprays the car with paint.'

b. *Hij bespuit de auto met verf.*

'He *be*-sprays the car with paint.'

Mulder interprets [19a] as being what happens typically in a factory when the cars are sprayed, whereas [19b] he interprets as an act of vandalism, like pouring bronze over the plants. The difficulty here is accommodating [19a] with the idea of effectedness. Mulder tries to get out of the difficulty by saying that the unpainted car constitutes the raw material, that the paint becomes an integral part of the car, and that the car is brought into being by spraying the raw material, in much the same way that in *He baked a cake* the raw materials are turned into a cake by the act of baking. This might be plausible for *sputten* 'spray', although I am not convinced, but it seems highly implausible in the next example.

[20] *Hij (be)laadde de wagen met hoo.*

'He *(be)*loaded the cart with hay.'

In the case of *laadde de wagen* it is surely stretching the idea to suggest that the unladen cart constitutes the raw material and that the cart is brought into being by being loaded with hay. Hay, after all, is not an integral part of carts.

If we argue that the cart can be an effected object in [20], then we should be able to argue that in the next example planting the garden with tulips effects the garden. (After all, a garden with nothing in it can hardly qualify as a real garden.) Contrary to expectation, however, it turns out that the simplex verb is ungrammatical.

[21] *Hij *(be)plant de tuin met tulpen.*

'He *(be)*plants the garden with tulips.'

How else, then, might we distinguish between the sentences where a simplex verb and a *be*-verb take the same direct object? My proposal is that the simplex verb takes a THEME direct object and the *be*-verb takes a Ground direct object. Recall that I consider that in the unmarked case a simplex verb takes a THEME object, in the marked case a simplex verb [-L] takes a Figure object, and that a *be*-verb [+L] takes a Ground object. It will depend on the lexical content of the particular verb in question whether it can be realized as [0L], [-L] or [+L]. Putting it another way, the type of argument(s) that a verb takes will depend on how the action depicted by the verb is viewed. Verbs like *load* and *paint* take a THEME argument when the action is viewed as being typical of the verb and when the verb-object combination is understood to be integral. We might say that the combination [V NP_{THEME}] means simply 'perform an activity involving an NP'. Typically such verb/NP combinations might include simple, everyday tasks or an activity commonly associated with an occupation: *He sprays cars, He paints houses, He loads ships*. On the other hand, when the activity is viewed as involving a Figure and Ground, the activity is more complex; in sentences of the *spray/load* type a Figure is supplied to a Ground. Note the difference between the next examples.

- [22] a. *Er gießt seinen Kaktus.* (German)
 he pours his cactus
 'He waters his cactus.'
- b. *Er begießt {die Tomaten/den Rasen/das Blumenbeet}.*
 he *be*-pours the tomatoes/the lawn/the flowerbed
 'He waters _____.'
- [23] a. V is [0L]
 He sprays cars. (i.e. for a living) (THEME object)
 He loads carts.

b. V is [-L]

He sprayed paint on the car. (Figure object)

He loaded hay onto the cart.

c. V is [+L]

He sprayed the car with paint. (Ground object)

He loaded the cart with hay.

6.6 The *vol/voll* problem

I have yet to address the problem of how to deal with the morpheme *vol* that occurs obligatorily with a simplex verb such as:

- [24] *Hij plant de tuin *(vol) met tulpen.*
 'He plants the garden full of tulips.'

I have said above that I think that the simplex verb takes a THEME direct object, that the *be*-verb takes a Ground direct object, and that *be-* is not an allomorph of *vol*. The adjective *vol* in [24] looks to be a degree word, and as such it is difficult to see how it can have any effect on the syntax of the sentence. More specifically how can a degree word require the verb to have a particular argument (*de tuin* rather than *tulpen*) as direct object?

Firstly, let me show what I mean by saying that *vol* looks like a degree word. Consider these examples from German. In all the examples *voll* is optional.

- [25] a. *voll* modifies a past participle
Die Straße ist voll gesperrt.
 'The road is completely blocked.'

b. voll modifies a PP

Er steht voll hinter mir.

he stands full behind me

'He fully supports me.'

Er traf mich voll ins Gesicht.

'He hit me full in-the face.'

c. voll modifies a location morpheme

Er ist nicht voll da.

he is not full there

'He is not quite with it.'

d. voll modifies a particle or verb

Er nützte die Gelegenheit voll aus.

he used the opportunity full out

'He fully exploited the opportunity.'

Du mußt die Rechnung vollbezahlen.

you must the bill full-pay

'You must pay the bill in full.'

In the [25d] examples, where *voll* modifies the verb rather than some other constituent of the sentence, I suggest that *voll* is beginning to be ambiguous between a degree modifier and a verbal particle. There does not seem to be much semantic difference between *voll* in the phrase *voll bezahlen* 'pay fully' and the particle *voll* in the particle verb *vollbekommen* 'manage to get full', for instance. Consider the next examples, the orthography of which suggests that *voll*, as used here, is a particle that is

part of a particle-verb complex (separable verb), and therefore written as a single word.

- [26] a. *Er hat das Auto volllaufen lassen.*
 he has the car full-run let
 'He has filled up the car.'
- b. *Er hat die Mülltonne vollbekommen.*
 he has the dustbin full-got
 'He has managed to fill the dustbin.'
- c. *Er hat sich vollgegessen.*
 he has himself full-eaten
 'He has eaten his fill.'
- d. *Er hat sich die Hose mit Kaffee vollgegossen.*
 he has himself the trousers with coffee full-poured
 'He poured coffee all over his trousers.'

Given the evidence in [26] that *voll* is in sentence-final position and orthographically attached to the verb when the verb is sentence-final, I propose that we take *voll* in [26] to be a particle.

So far I have proposed that *voll* starts off as an adjective that has the capacity to modify a range of constituents. When *voll* modifies a verb it is ambiguous between being a degree modifier and a verbal particle. When used in association with certain verbs (*sperrn* 'to block') *voll* retains its status as degree modifier; when used in conjunction with other verbs (*essen* 'to eat') *voll* is reanalysed as a verbal particle.

This process of reanalysis is very akin to the process whereby the preposition *durch* 'through' can appear as a verbal particle and also as a prefix.

- [27] a. *Er eilte durch die Vorhalle (durch).*
'He hurried through the entrance hall.'
- b. *Er durcheilte die Vorhalle.*
he through-hurried the entrance hall
'He hurried through the entrance hall.'

My proposal that *voll* is, in some contexts, a particle is supported by the fact that *voll* can also appear as a prefix.

- [28] a. *Er vollbrachte viele Wunder.*
he full-brought many miracles
'He performed many miracles.'
- b. *Er vollendete sein Lebenswerk.*
he full-ended his lifework
'He completed his life's work.'
- c. *Er vollführte einen ohrenbetäubenden Lärm.*
he full-led an earnumbing noise
'He produced an ear-splitting noise.'
- d. *Er vollstreckte das Urteil.*
he full-stretched the verdict
'He executed the verdict.'
- e. *Er vollzog den Befehl.*
he full-drew the order
'He carried out the order.'

Note that in these examples *voll* retains its lexical content, i.e. it still conveys the notion of 'fullness', 'completeness', just as *durch* conveys the notion 'through' whether *durch* occurs as preposition, particle or prefix. Note secondly that these *voll*-prefixed verbs take a THEME direct object. This fact supports my earlier contention that a simplex verb modified by *vol* (*Er laadde de wagen vol met hooi* 'He loaded the cart full of hay') also takes a THEME direct object. In other words *vol/voll* can in no way be an allomorph of *be-*. The prefixal allomorph of *vol/voll* is, unsurprisingly, *vol/voll*.

6.7 The categorial status of *vol/voll*

One point about *vol/voll* that I would like to address has to do with the categorial status of these words. There are contexts where *voll* 'full' is clearly an adjective: *mit vollem Mund essen* 'to eat with (one's) mouth full', *eine volle Kiste* 'a full chest'. We have also seen *vol/voll* as a particle and as a verbal prefix. It is not, however, so easy to determine the categorial status of *vol/voll*. What is the categorial status of *voll* in the following examples?

- [29] a. *Sein Herz war voll von Verachtung.*
 'His heart was full of contempt.'
- b. *Der Baum war voll mit reifen Äpfeln*_{DAT}.
 the tree was full with ripe apples
 'The tree was full of ripe apples.'

It seems clear enough that in [29] *voll* is an adjective. It is less clear that it is an adjective in [30].

- [30] a. *ein Beutel voll Geldschetne*
 a purse full banknotes
 'a purse full of banknotes'

- b. *Der Baum war voller reifer Äpfel*_{GEN}
 'The tree was full (of) ripe apples.'

German does not usually permit adjectives to come after the nouns that they modify.

- [31] a. **Wir hielten ihn für einen Diener treu seinem Herrn*_{DAT}.
 we held him for a servant loyal to-his master
- b. *Wir hielten ihn für einen seinem Herrn treuen Diener.*
 we held him for a to-his master loyal servant
 'We considered him to be a servant loyal to his master.'

In [29] it seems clear that *voll* is an adjective, the following NP getting its case from the prepositions *von* 'of' and *mit* 'with'. In [30], however, there are no prepositions between *voll* and the following NP, and the NPs get their case (genitive or dative) from *voll*. The fact that Dutch *vol* can take a NP complement leads Mulder to suggest that in certain contexts *vol* might have the categorial status of a preposition.

Mulder observes that *de kist vol boeken* 'the box full (of) books' is structurally ambiguous. The following example has two interpretations.

- [32] *Ik krijg de kist vol boeken.*
 I get the box full books
- (i) 'I receive the box that was full of books.' (NP)
 (ii) 'I manage to get the box full of books.' (SC)

Mulder suggests that *vol* in the SC reading 'appears to behave like a preposition, rather than as an adjective, in that it takes a bare NP object' (1992:ch.7). Furthermore, he points to sentences in which a preposition functions in a similar way to *vol*.

- [33] *Zijn gezicht zit onder de puistjes.*
 his face sits under the pimples
 'His face is full of pimples.'

For the moment the question whether *vol/voll* can be assigned to the category of preposition must be left unresolved.⁶

6.8 The English equivalent of *vol/voll*

So far I have not considered whether English has a morpheme equivalent to the *vol/voll* morphemes of Dutch and German when they occur in the following structure.

- [34] *Hij laadde de wagen vol met hooi.*
 he loaded the cart full with hay
 'He loaded the cart full of hay.'

⁶ Two observations by Mulder regarding the use in Dutch of the prepositions *met* 'with' and *van* 'of' when they occur after adjectives may be pertinent at this point. He observes that *vol* may be followed by either *met* or *van*, although there is, according to Mulder, a preference for *met*.

- (i) a. De zak zit vol met knikkers.
 the bag sits full with marbles
 'The bag is full of marbles.'
 b. Hij heeft zijn buik vol van dat meisje.
 'He has his belly full of that girl.'

Firstly, Mulder observes that *met* may take as complement only a bare plural or mass noun.

- (ii) De zak zit vol met ({*de/honderd/veel/alle}) knikkers.
 the bag sits full with {the/hundred/many/all} marbles
 'The bag is full of _____ marbles.'

Secondly, Mulder notes that *vol* is the only adjective that may be used with *met*. All other adjectives are used with *van* or another preposition.

- (iii) a. Het plein ziet zwart {*met/van de} mensen.
 the square sees black with/of the people
 'The square is thick with people.'
 b. De soep staat stijf {*met/van het} zout.
 the soup stands stiff with/of the salt
 'The soup is thick with salt.'

The use of English 'full' in this type of structure appears rather marked, and, in contrast with Dutch and German (which favour *vol met/voll mit* 'full with') English requires *full* to be followed by *of*. English *full* is even more marked when the PP adjunct is omitted.

- [35] *He loaded the cart full *(of hay).*
 ?*He sprayed the wall full *(of paint).*
 He filled the cart full (of hay).
 **He watered the flowers full (of rainwater).*
 *He planted the garden full *(of tulips).*
 **He topped the bottle full (of milk).*

If we substitute *up* for *full* the sentences become marginally more acceptable.

- [36] *He loaded the cart up (with hay).*
 ?*He sprayed the wall up (with paint).*
 He filled the cart up (with hay).
 **He watered the flowers up (with rainwater).*
 ?*He planted the garden up (with tulips).*
 He topped the bottle up (with milk)

Let us assume that *up* is the English equivalent of Dutch and German *vol/voll*. This enables us to account to some extent for the choice of preposition in the adjunct. Note that *with* is the unmarked preposition that English has where Dutch has *van* 'of'.

- [37] a. (i) *The soup is stiff with salt.*
 (ii) *De soep staat stijf van het zout.*
 the soup stands stiff of the salt

- b. (i) *The square is black with people.*
 (ii) *Het plein ziet zwart van de mensen.*
 the square sees black of the people
- c. (i) *That text is crammed with mistakes.*
 (ii) *Die tekst staat bol van de fouten.*
 that text stands thick of the mistakes
- d. (i) *The garden is crawling with ants.*
 (ii) *De tuin krielt van de mieren.*
 the garden crawls of the ants

It seems to be the case that after *van* Dutch requires a definite NP. What happens when the semantics of the sentence requires a non-definite plural or mass noun? Mulder's data suggest that, since there are no restrictions on the definiteness of the NP that is the complement of *met* 'with', then *met* is substituted for *van*.

- [38] a. *Hij is vol van dat meisje.*
 he is full of that girl
 'He is fed up of that girl.'
- b. *De zak zit vol met knikkers.*
 the bag sits full with marbles
 'The bag is full of marbles.'

These facts enable us now to make the generalization that English *with* is equivalent to Dutch *van* 'of'. What about English *of* in the sort of constructions under discussion? I will suggest that English *of* is the equivalent of a zero morpheme in Dutch and German. Note the zero morpheme in the following.

- [39] a. Jan zit vol goede ideeën.
Jan sits full good ideas
'Jan is full of good ideas.'⁷

Summarizing, we can establish a table of equivalents for *with*, *of* and their Dutch counterparts *van* and $\emptyset$.

[40]

English				Dutch		
					DEF.	INDEF.
full	up	with		vol	van	met
fed	up	with		vol	van	met
	stiff	with		stijf	van	*
	black	with		zwart	van	*
	thick	with		bol	van	*
	crawl-	with		kriolt	van	*
	ing					
full			of	vol		$\emptyset$

Note that in the above table I align *up* vertically with the adjectives and verbs that take *with*, and horizontally with Dutch *vol*. Note also that English *full* is not always to be equated with Dutch *vol*, as I show in the phrase *full up with*. This use of *full* as a degree modifier of a preposition is different from its adjectival use in *full of*.

⁷ The zero morpheme that corresponds to English *of* is found in a number of other contexts in German.

- (i) a. eine Tasse Tee
'a cup (of) tea'
b. eine Art Musik
'a kind (of) music'

6.8.1 *Up as a particle*

Having shown that *up* is properly to be regarded as the particle equivalent of *vol/voll*, it is necessary to consider what meaning *up* may have. In fact *up* seems to convey exactly the same semantic notions as *vol/voll*, i.e. the notions of 'completeness, satiety, repleteness'. That this is so can be seen from these examples:

- [41] *He loaded up the car.*
 He {ended/finished} up in London.
 She sewed up the hem.
 She ran up a dress.
 He {cooked/fried/bolled} up some vegetables.
 He knocked up a meal.
 The lamp lit up the room.

6.9 Summary and conclusions

In this section I have shown that Dutch and German *vol/voll* occur in conjunction with a THEME argument of the verb, and are, therefore, not allomorphs of the prefix *be-*. This has the corollary of removing the motivation for ascribing Small Clause status to structures involving *be-*. In any case I showed that there are considerable problems in taking *be-* to be the head of a SC, not least the problem of how a SC head can be realized as a morpheme adjoined to the verb. These problems disappear when *be-* is restored to its rightful status as an allomorph of a location P. I have also shown that *vol/voll*, when used with the equivalent of a *load/smear* verb, is better regarded as equivalent to the English particle *up*.

CHAPTER 7

VP-INTERNAL STRUCTURE

The construction of argument templates that I proposed in (4.4.4) raises a number of problems relating to the structure of the VP. I discuss the problems of c-command and constituency structure and how these relate to flat tree structures and right- and leftbranching configurational trees. I discuss and reject proposals for a double VP, or layered structure along the lines of (Larson:1988) and conclude that a 'flexiflat' version of X-bar Syntax, in the spirit of (Czepluch:1997) is able to resolve these problems.

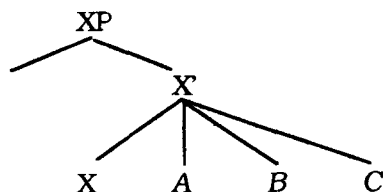
7.1 VP-internal structure

The proponents of analyses along the lines of Larson's (1988) VP-shell, or layered VP proposal are attempting to solve a number of problems inherent in the VP-internal structure in the X-bar system. One of the problems presented by the sentence in [1] is how to analyse the VP-internal argument structure.

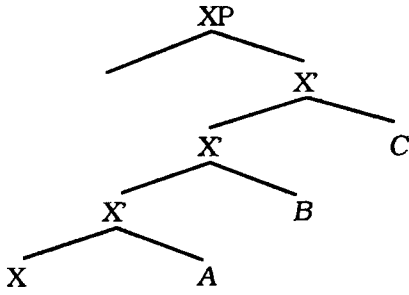
[1] *Tom loaded [the hay] [onto the cart].*

Essentially the problem comes down to whether we advocate a flat (non-binary branching) structure, [2a], a configurational structure, [2b], or some other structure.

[2] a.



b.



It would seem to be the case that a model that conforms to the empirical facts of English and the principles of the X-bar Syntax will have to be commensurate with the following principles:

[3] Four Principles

- I. The model has to reflect the binding asymmetries of English.
- II. The model has to be consistent with general notions of permitted constituency structure.
- III. The model has to be binary-branching.
- IV. The model has to be structurally economical.

That Principle I must be satisfied is shown by the sentences in [4], first discussed by barss and Lasnik (1986).

- [4] a. *He showed [Tom_i] [to himself_i] [in the mirror].*
 **He showed [himself_i] [to Tom_i] [in the mirror].*
- b. *He loaded [no hay] [onto any carts].*
 **He loaded [any hay] [onto no carts].*

The general rule operating in these sentences is that the direct object of the verb binds the following DP object of the preposition. Thus, in [4a] the reflexive *himself* is in the domain of its antecedent *Tom*. In [4b] the negative polarity quantifier *any* is in

the domain of the negative element *no*. As the starred examples show, the converse results in ungrammaticality.

It is standardly assumed that binding asymmetries, such as those in [4], are due to the configurational property of c-command.

[5] C-command

A c-commands B iff A does not dominate B and every X that dominates A also dominates B.

Chomsky (1986:8)

That the model has to conform to Principle II is illustrated in [6].

- [6] a. Tom [*drove Mary to town*] [*on Monday*],
 ... and Bob [*did so*] [*on Tuesday*].

Substitution by *do so* in [6a] shows that *drove Mary to town* is a constituent, as is the PP *on Monday*.

Let us now consider the two models in [2] in the light of these four principles.

7.2 The inadequacies of flat and standard tree structures

The flat structure in [2a] clearly conforms to none of the first three Principles. The only structural differentiation between the four elements is provided by the linear ordering; assuming a left-headed XP, the leftmost complement A is closer to the head X than are B and C. Instead of asymmetric c-command we find symmetric c-command obtaining between all the arguments. The constituency structure required by Principle II does not obtain; the structure admits of only one constituent, namely the X'. Finally, the model is by definition not binary-branching.

The configurational model in [2b] observes the binary-branching and constituency requirements of Principle II and Principle III, but fails to satisfy the requirements on binding. The model has asymmetric c-command, but the higher, c-

commanding, node is the rightmost node. This is the antithesis of what is required, as is shown by the examples in [4].

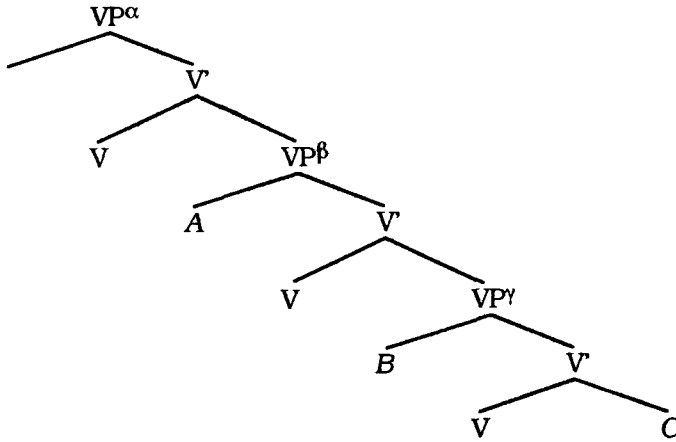
Neither model turns out to be satisfactory. The problem with both [2a] and [2b] is that neither conform to the empirical facts of binding. It is commonly assumed that asymmetric c-command is responsible for the asymmetries of binding. In the flat structure of [2a], however, the head *X* and its complements *A*, *B*, *C* are all sisters and are therefore all in a symmetric c-command relationship with each other.

In [2b] asymmetric c-command obtains, but it is the reverse of what we expect, i.e. *A* is c-commanded by *B* and *C*, instead of the converse.

7.3 Larson's single complement structure

The fact that neither [2a] nor [2b] conform to the empirical facts of asymmetric c-command has led some writers to look for ways whereby the configurational model can be adapted to enable asymmetric c-command to account for the binding facts. The model shown in schematic form in [7] is the basis of some recent attempts. In this model the c-command relationship that holds between *A*, *B*, *C*, is such that *A* asymmetrically c-commands *B* and *C*, and *B* asymmetrically c-commands *C*. This gives the right result according to the examples in [4]. This structure has VP nodes intervening between the three arguments *A*, *B*, *C* so that *B* and *C* are complements of VP^{β} and VP^{γ} respectively. This is essentially the single complement hypothesis of Larson (1988).

[7]



Note that this analysis eliminates ternary structure (or flat structure), and at the same time accounts for the facts of binding and c-command.

Proponents of the right-branching single complement model in [7] claim that it can also account for sentences such as those in [8].

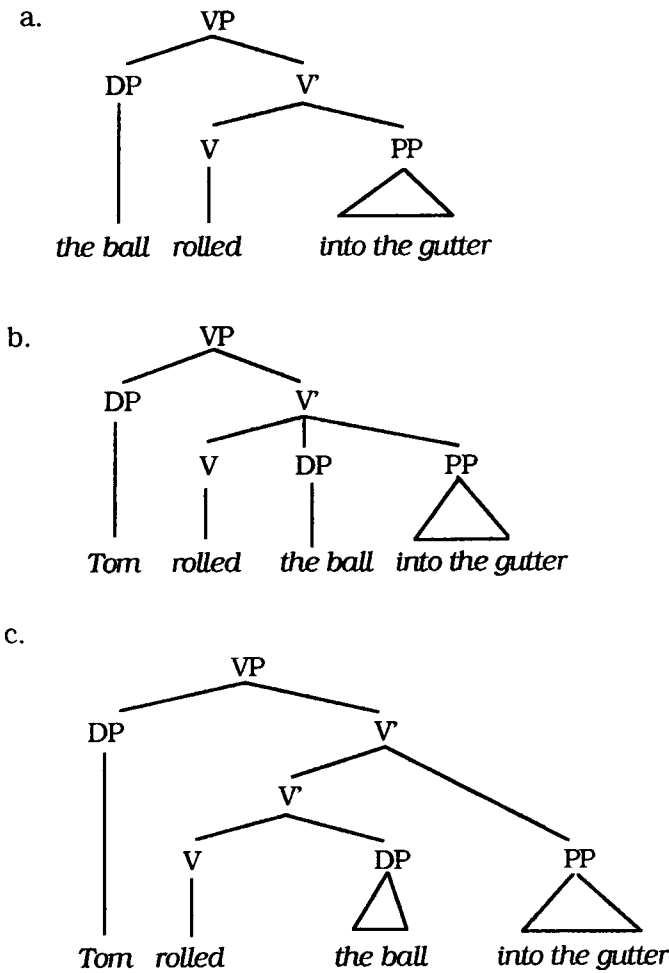
- [8] a. *The ball rolled into the gutter.*
 b. *He rolled the ball into the gutter.*

The fact that a verb such as *roll* can appear as an intransitive verb, as well as a transitive verb with an Agent subject has been widely treated in the literature. The model that seems to be currently most prevalent is based on Larson's (1988) VP-Shell theory. The general assumption of Larson, as developed by Hale and Keyser (1993), Borer (1993, 1995), Chomsky (1995:ch.4), Arad (1995,1996) Baker (1996), Radford (1997:ch.9), and Culicover (1997:ch.10), seems to be that the verb *roll* is generated in the position that it occupies in [8a], and in the [8b] example *roll* moves into the higher verb slot leaving a trace in the verb's original position.

It is claimed that an analysis based on raising a verb from a lower verb slot into a higher one is necessary to account for the phenomenon of a verb such as *roll* surfacing in one of two verb slots.

Traditional analyses of a sentence such as *Tom rolled the ball into the gutter* assumed either the flat structure of [9b] or the binary structure of [9c].

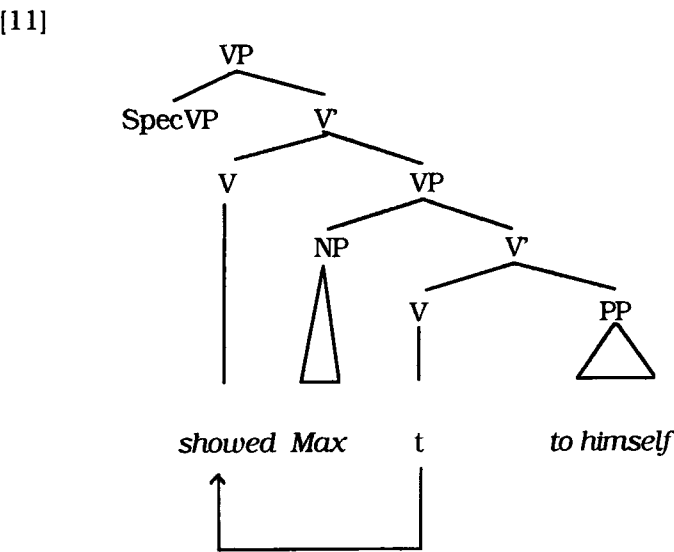
[9]



Neither of these two structures is really satisfactory. The flat structure of [9b] obscures the sisterhood relationship that holds between complements in the X-bar Syntax. [9b] appears to show three sisters in a symmetrical c-command relationship. The disadvantage of [9c] is primarily that the PP *into the gutter* c-commands and therefore binds the DP *the ball*, contrary to the empirical generalization that direct objects bind the DP complement of Ps. Note the reflexive and negation binding asymmetries in [10] of the type discussed in Barss and Lasnik (1986) and Larson (1988:338). If the PP asymmetrically c-commanded the direct object, as [9c] implies, we would expect the starred examples in [10] to be grammatical.

- [10] a. *He showed [Tom]_i [to himself]_i [in the mirror].*
**He showed [himself]_i [to Tom]_i [in the mirror].*
- b. *He loaded [no hay] [onto any carts].*
**He loaded [any hay] [onto no carts].*

One of Larson's illustrations of the c-command property of direct objects over PPs is given in [11].



Larson (1988:344)

In this example *Max* c-commands the PP *to himself* and binds the anaphor *himself* in the PP. The converse, where the PP c-commands the direct object is ungrammatical:

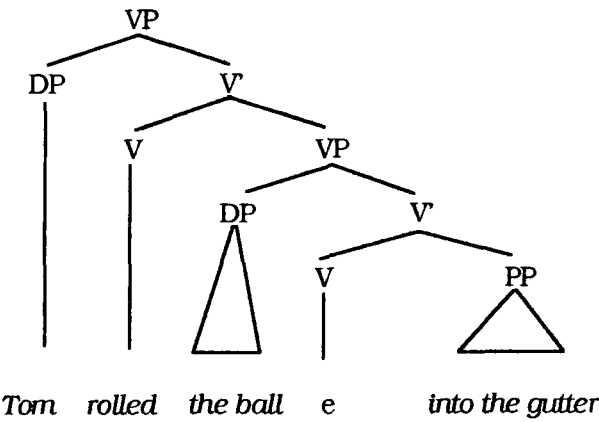
- [12] *... *showed himself_i to Max_i*

Furthermore, Larson claims that both [9b] and [9c] violate the Uniform Theta Assignment Hypothesis (UTAH) of Baker (1988a) in that the subject of *roll* in [9a] has become the direct object of *roll* in [9b] and [9c].

The solution to the problem that Larson and subsequent proponents of VP-Shell theory propose is given in [13], where there are two VP projections. The verb *roll* originates in the head position of the lower VP and then moves into the head

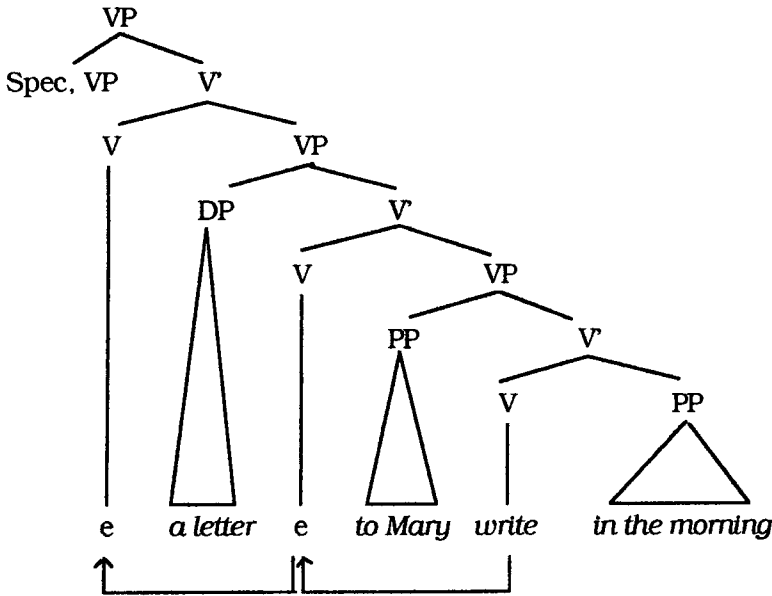
position of the higher VP (the VP shell). This is claimed to be advantageous for two reasons. Firstly, the DP *the ball* remains structurally in the subject position of the lower V in conformity with the UTAH, while taking accusative case as complement of the higher V. Secondly, the DP argument asymmetrically c-commands the PP, rather than the converse.

[13]



Larson (1988:345) follows McConnell-Ginet (1982) in taking adverbials not to be the outermost adjuncts of the verb, but the verb's innermost complements, and extends the idea of verb raising, as in the following example, to a third higher V:

[14]



Thus, it seems that there is potentially no limit on the number of VPs that may underlie a single surface VP as traditionally understood.

It is certainly true that there are lexical verbs that are essentially synonymous with a pair of verbs, the first of which is purely causative. *Load*, *put*, *throw*, for instance, have the basic meaning 'cause to be', as can be seen in [15].

- [15] a. *The farmer {loaded/put/threw} the hay onto the cart.*
 b. *The farmer caused the hay to be on the cart.*

Note that in [15a] there is just one verb, while in [15b] there are two verbs. With different arguments for the three NP arguments in [15] other verbs become available. [16a] shows causative verbs and a second optional verb. In [16b] the second verb is obligatory. In [16c] the second verb is ungrammatical. [16d] shows that the second verbs in [16c] may also appear in the first verb slot.

- [16] a. *The farmer {forced/got} the animals (to go) into the pen.*
 b. *The farmer compelled the animals *(to go) into the pen.*
 c. *The player {rolled/skidded/bounced} the ball (*V) into the goal.*

- d. *The player {got/forced} the ball (to roll/to skid/to go) into the goal.*

The question posed by the trees in [13] and [14], and the data in [16] is this: If a sentence contains a causative verb, must it also contain a second verb? By this I mean, are we to assume a structure for [17], in which there is an obligatorily empty V between the Figure and the Ground arguments?

- [17] *He loaded the hay [?](V e) onto the cart.*

In other words, is [17] a biclausal sentence or a monoclausal sentence?

For the moment I will merely suggest that because there happen to be biclausal structures that are essentially synonymous with sentences that contain only one phonetically realized verb, this is not an argument for assuming that the sentence with one phonetically realized verb also contains an empty verb slot.

At this juncture it would be pertinent to refer to an observation made by Bickerton (1981) on the two child utterances in [18], taken from a study on the acquisition of English causative constructions by Bowerman (1974).

- [18] a. *Mommy open door.*
b. *Billy make me cry.*

Bickerton proposes, on the evidence from tests conducted by Slobin (1978) that 'It is far from certain that two distinct propositions do underlie *X-open-Y* sentences; the mere existence of *make-X-do-Y* sentences is not in itself evidence one way or the other.' (Bickerton 1981:205). Bickerton goes on to suggest that the latter sentences are 'perceptually more complex than the former, therefore *intrinsically unlikely candidates for underlying forms*' (my emphasis). To underscore the point Bickerton refers to work by Schiefflin (1979) on the acquisition of Turkish and Kaluli causatives.

The fact that CNCD (the causative-noncausative distinction) strategies that involve marking of causatives by bound morphemes and single-clause structures (the case in both Turkish and Kaluli) are acquired earlier and more easily than structures involving two clauses and a causative verb casts strong doubts on those generative-semanticist analyses that would assume something like *Bill caused the door to become open* as the underlying structure of sentences like *(Bill opened the door)*.

Bickerton (1981:198)

7.3.1 Developments of the VP-Shell analysis

While Larson (1988) is largely concerned with the double object construction and how it can be accommodated in the VP-Shell structure, Radford (1997:ch.9) extends the VP-Shell structure to particle verbs, resultative predicates, and object-control predicates. An example of each is given below.

- [19] a. *They [closed]_i the store t_i down.*
 b. *The acid [turned]_i the litmus paper t_i pink.*
 c. *What [decided]_i you t_i to take syntax?*

Radford (1997:ch.9)

According to Radford, in each of the examples in [19] the verb in the surface structure is in the head position of a higher VP, having raised from the head position of the lower VP. Part of the motivation for extending VP-Shell structure to such a disparate array of clause types is to account for the fact that the verbs in [19] can also appear in the lower VP.

- [20] a. *The store closed down.*
 b. *The litmus paper turned pink.*
 c. *You decided to take syntax.*

On the basis of the relationship between the sentences in [19] and those in [20] Radford extends the idea of verb-raising to a higher VP head position even to examples where there is no grammatical counterpart to the sentences in [21].

- [21] a. *He [handed]_i the documents t_i over.*
 **The documents handed over.*
- b. *They [painted]_i the house t_i pink.*
 **The house painted pink.*
- c. *What [persuaded]_i you t_i to take syntax?*
 **You persuaded to take syntax.*

Undeterred by the ungrammatical examples in [21], Radford extends the VP-Shell idea to include the Locative Alternation, and even monotransitive predicates, and unergative predicates. In the following examples the idea is that the V² slot is where 'light' verbs originate.

- [22] e. *They [loaded]_i the truck t_i with hay.*
- f. *She [hit]_i him t_i.*
- g. *He [lied]_i t_i.*

7.4 Arguments against V¹ to V² raising

7.4.1 Semantic differentiation between V¹ and V² verbs

What I will show is that, while there may be a good case for analysing a sentence such as *He rolled the ball into the gutter* as being biclausal, there is no case for assuming verb movement in such constructions.

Let us for the moment assume a biclausal structure for [13]. [23a] shows the monoclausal representation for *The ball rolled into the gutter* with a single verb slot

V¹, and [23b] shows the corresponding biclausal structure with an Agent and an additional verb slot, V².

[23] a. Monoclausal

[Figure V¹ +LOC Ground]

b. Biclausal

[Agent V² [Figure V¹ +LOC Ground]]

Note firstly, that support for the idea that there are indeed two verb slots in [23b] comes from the fact that there are causative verbs that appear in V² that require there to be a verb in V¹. Examples are:

[24] *He {caused/made/compelled} XP *(to go) into YP.*

Verbs like *cause*, *make*, *compel* carry the feature [+CAUSATIVE], but not [+PATH]. Other verbs, such as *get* or *force*, permit, but do not require, a verb in V¹, and therefore optionally carry a [+PATH] feature. Verbs such as *push*, *roll*, *drive*, when they have an Agent subject, are [+CAUSATIVE] and obligatorily [+PATH]. They disallow a verb in V¹.

Since V¹ in [24] is occupied by the verb *to go*, the causative verb cannot originate in V¹ in order subsequently to raise to V². This strongly suggests that a causative verb such as *force*, which allows an optional verb in V¹, also originates in V², rather than in V¹.

[25] *He forced XP (to go) into YP.*

Summarising so far, we have seen no compelling evidence in the data that I have discussed to support the idea that there are necessarily two VPs.

7.4.2 Morphological differentiation between V^1 and V^2 verbs

The strongest evidence against the proposal that a verb originates in V^1 and subsequently raises to V^2 is provided by a non-productive group of verb pairs, which differ morphologically according to whether they appear in V^1 or V^2 . One such verb pair is provided by *lay/lie*. The causative verb *lay* takes weak forms in the past tense (*lay* < *laid*); the V^1 verb *lie* takes strong forms in the past tense (*lie* < *lay*).

- [26] a. V^1 *lie, lay lain*
 The egg {lies/lay} in the nest.
- b. V^2 *lay, laid laid*
 The hen {lays/laid} the egg in the nest.

The weak/strong distinction indicating a transitive/intransitive distinction is more clearly exemplified in German than in English. In Modern English the pattern is obscured by the fact that some strong verbs (e.g. *sit, stand, strk, hang*) have usurped their weak counterparts¹. In the table below I give the German verbs in two forms, the infinitive and the third person singular simple past tense. The *-te* suffix, which marks past tense on the weak verbs, contrasts with the vowel change (Ablaut) and absence of suffix on the strong verbs.

¹ The weak form of *hang* is preserved in the meaning 'to execute'. There is also confusion in dialects and popular speech between *lay* and *lie*.

[27]

German		English	
V ²	V ¹	V ²	V ¹
(trans.)	(intrans.)	(trans.)	(intrans.)
weak	strong	weak	strong
<i>setzen, setzte</i>	<i>sitzen, saß</i>	<i>set</i>	<i>sit</i>
<i>hängen, hängte</i>	<i>hangen, hing</i>	<i>hang</i>	<i>hang</i>
<i>stellen, stellte</i>	<i>stehen, stand</i>	<i>(stand)</i>	<i>stand</i>
<i>legen, legte</i>	<i>liegen, lag</i>	<i>lay</i>	<i>lie</i>
<i>fällen, fällte</i>	<i>fallen, fiel</i>	<i>fell</i>	<i>fall</i>
<i>senken, senkte</i>	<i>sinken, sank</i>	<i>(sink)</i>	<i>sink</i>
<i>tränken, tränkte</i>	<i>trinken, trank</i>	<i>drench</i>	<i>drink</i>

In the next table I give, for the sake of comparison, some equivalent verbs in Russian. Russian verbs do not exhibit the weak/strong distinction that is the hallmark of the Germanic verbal system. The morphological differences between these transitive and intransitive Russian verbs (palatalization of /s/ to /š/, and vowel alternations) need not concern us. What is important, however, is the fact that, just as in the Germanic languages, Russian has verbs that differ morphologically according to whether they are V¹ or V² verbs. In [28] I indicate in bold the segments that are cognate.

[28]

English		Russian		
v ²	v ¹	v ²	v ¹	
trans.	intrans.	trans.	intrans.	
weak	strong	impf.	perf.	impf.
set	sit	sažat'	<i>posadit'</i>	sidet'
hang	hang	vešat'	<i>povesit'</i>	viset'
(stand)	stand	stavit'	<i>postavit'</i>	stojat'
lay	lie	(<i>klast'</i>)	<i>položit'</i>	ležat'
(sink)	sink	topit'	<i>potopit'</i>	tonut'

These data are problematic for a VP-Shell account where it is claimed that the V² verb originates in the V¹ position. How does a V¹ verb change into the corresponding V² verb? This would be a problem for lexical entries, if nothing else. The simplest solution is to avoid the problem altogether and take it that V² and V¹ verbs originate, and remain, in different head positions.

It is worth noting that the morphological differentiation between the transitive (V²) and intransitive (V¹) verbs in [27] and [28] is a relic of the Active-Stativ distinction in Pre-Indo-European. An Active-Stativ language typically 'characterizes sentences by aligning active (animate) nouns with active verbs, and inactive (inanimate) nouns with inactive verbs' (Lehmann 1992:107). Nouns and verbs fall into either an active (the equivalents of *man*, *horse*, *run*, *grow*) or an inactive class (the equivalents of *chair*, *house*, *rest*). Some concepts may be viewed as either active or inactive (*fire*, *water*, *lie*, *sit*) and have two distinct forms².

² There were, for example, two different words for 'fire' in Active-stative Pre-Indo-European, according to whether it was viewed as 'blazing' or 'quiescent'. These two different words survive as (i) Greek *pur*, Hittite *pahhur*, both cognate with English *fire*, and (ii) Latin *ignis*, Sanskrit *āgni-*, Lithuanian *ugnis*, Russian *ogon'* (Lehmann 1992:171).

While it is clear that English and the other modern Indo-European languages are no longer Active-Stative languages, and therefore that the active/inactive distinction no longer holds, nevertheless the essential point to note is that the verb pairs in [27] and [28] derive from a system in which verbs were selected to match with arguments. This strongly supports my contention, as argued in 5.4 and following Chomsky (1965:ch.2), that it is the arguments that are primary and that it is the arguments that select, or permit, the appropriate verbs.

7.5 Constituency structure

The strongest evidence against the right-branching model of [14] is its failure to conform to Principle II, the requirement that constituency structure be preserved. Czepluch (1997:65) points out that in a right-branching structure adjuncts are embedded under phrases that contain complements. In such a structure the verb together with its direct object would not be a constituent. This is contrary to fact, as is shown in the *do so* substitution data in [29a], and the coordination data in [29b].

- [29] a. *John will [mend [the car [in the garage [on Monday]]]],*
and Bill will do so on Thursday.
and Bill will do so in the backyard on Thursday.
- b. *John will [mend the car] and [paint it] in the garage on Monday.*
John will [mend the car in the garage] and [paint it there] on M.

Czepluch (1997:65)

The data in [29] provide strong evidence that the right-branching model conflicts with Principle II.

Summarizing, we have found that the three models investigated so far fail for different reasons. The table in [30] shows whether Model 1 (flat structure), Model 2 (left-branching), and Model 3 (right-branching) conform to the four Principles of asymmetric c-command (I), constituent structure (II), binary branching (III), and economy of structure (IV).

[30]

	Principle I As-C-comm.	Principle II Constituency	Principle III Binary br.	Principle IV Economy
Model 1	no	no	no	yes
Model 2	no	yes	yes	yes
Model 3	yes	no	yes	no

The facts in the table in [30] suggest that Model 2 has more in its favour than the other two models. Perhaps some modification of Model 2 might be fruitful. Recall that the problem with Model 2 is that, since it is left-branching, it does not conform to the empirical facts of binding by asymmetric c-command. Model 2 has the c-commanding node to the right of the node that it c-commands.

We can hardly rescue Model 2 by stipulating that c-command works 'the other way' in the case of VP-internal arguments. On the other hand, c-command as formulated in [5] may not be the whole of the picture.

7.6 Return to flat structure

In confronting these problems Czepluch (1997) has, I think, come up with an ingenious and simple solution. He notes that:

It is assumed in all modern linguistics that grammatical rules and processes may operate on constituents only. Chomsky himself has repeatedly called this the PRINCIPLE OF STRUCTURE DEPENDENCE. Without this principle, we would have no formal basis at all for setting up structures and formulating rules or principles. (...) Well, if ASYMMETRIC C-COMMAND is the right mechanism to describe postverbal asymmetries, then the CONSTITUENCY PRINCIPLE cannot hold. (...) If we want to preserve both principles, CONSTITUENCY and C-COMMAND, as seems wise, we have to constrain the use of one of them; and this has to be C-COMMAND, and its corollary that structures should be BINARY BRANCHING (Kayne 1984). This would mean, of

course, that asymmetries between postverbal constituents should not *apriorily* be interpreted as top-down right-branching structures.

Czepluch (1997:65)

In support of the idea that binding asymmetries are not necessarily due to the operation of asymmetric c-command, Czepluch notes that there is an ordering restriction in the coordinated structures in [31].

- [31] a. [NP [NP *John*] and [NP *his friend*]]
 *[[*his friend*] and [*John*]]
- b. [NP [NP *John's* [NP *brother*]] and [NP *his friend*]]]]
 *[[*his friend*] and [*John's* [*brother*]]]]

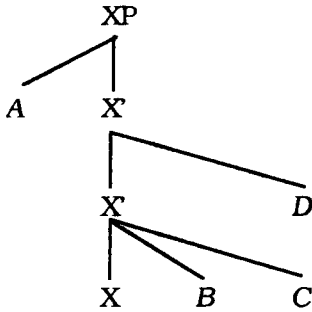
Czepluch (1997:60)

In the coordination structures in [31] there is a symmetrical c-command relation between the NPs *John* and *his friend* in [31a], yet the antecedent must precede the coreferential pronoun, as shown by the ungrammaticality of the starred example. In [31b] there is no c-command relation obtaining between the coreferenced elements since they are both too deeply embedded.

Since [31] shows that linear precedence can be sufficient for one constituent to bind another constituent, it looks as though asymmetric c-command need not always be invoked to account for binding asymmetries. This is the line that Czepluch takes. Taking the abstract representation in [32] as an example, Czepluch maintains that where there is an asymmetric c-command relation between two elements, then it is always the c-commanding element that determines the c-commanded element. Thus *A* or *D* may determine properties of *B* or *C*, but not vice versa. But if two elements are sisters, i.e. in a mutual c-command relationship, then linear order becomes relevant and *B* may determine a property of *C*, but not vice versa³.

³ In this summary of Czepluch's view I retain his use of *may determine*. I assume that neither an asymmetric nor a mutual c-command relationship *must* determine properties of the controlled elements.

[32]



Czepluch (1997:60)

As an alternative to distinguishing terminologically between c-command and linearity, Czepluch offers the following amended definition of c-command:

[33] Amended Definition of C-command (Czepluch 1997:fn.19)

A node α c-commands a node β iff either (a) or (b):

[a] β is a dependent of a sister of α ; (= asymmetric c-command)⁴

[b] α and β are sisters and α precedes β . (= linearity)

This amendment of the traditional definition of c-command is better able to account for the facts of binding than its predecessor⁵.

7.6.1 Constituency structure in a flat model

Given that there is a good case for some form of flat structure in the VP, there remains the problem of constituency structure. Recall that a completely flat VP, where all the VP-internal elements are sisters, allows by definition only one con-

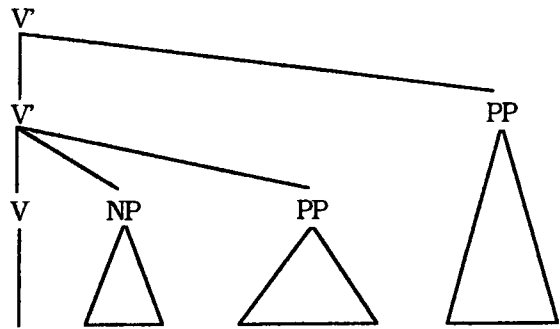
⁴ I retain Czepluch's use of the word *dependent*, and assume he thereby means *dominated by*.

⁵ There is, however, a problem with this amended definition of c-command, a problem that Czepluch does not address. As it stands, [32] permits a node to be c-commanded from two directions simultaneously, i.e. *C* is c-commanded by *D* according to [33a], at the same time as being c-commanded by *B* in accordance with [33b]. Perhaps the solution would be to require one of either (a) or (b) to take precedence over the other. I leave the matter open.

stituent, namely the VP itself. Yet we know from the facts of *do so* substitution and coordination that there may be constituent structure in the VP.

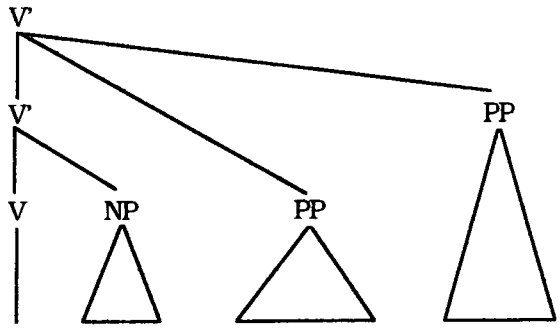
Czepluch's answer to this point is to allow just as much structure as is necessitated by circumstances. For the sentences in [34] he proposes the following possible structures, where [*do so*] is either a proform for *mend the car in the garage* or for *mend the car*.

[34] a.



John will mend the car in the garage on Monday
(and Bill will [*do so*] on Thursday)

b.



John will mend the car in the garage on Monday
(and Bill will [*do so*] in the yard on Thursday)

Czepluch (1997:66)

I take it to be a corollary of Czepluch's idea that, unless other factors necessitate extra structure, such as in [34], then the VP has flat structure.

7.6.2 Flexiflat structure

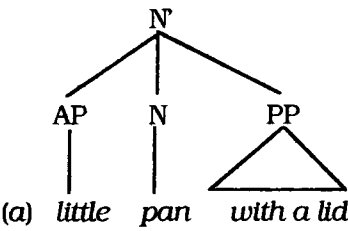
It is worth pointing out that it is *do so* substitution in [34] that has the effect of imposing extra structure. In other words, it is the interpretation (by the speaker, or by others) of a string that may necessitate extra structure. Let us call this sort of flat structure with built-in flexibility **flexiflat** structure.

A further illustration is provided by the following NP, which shows that flexiflat structure may not be confined to the VP.

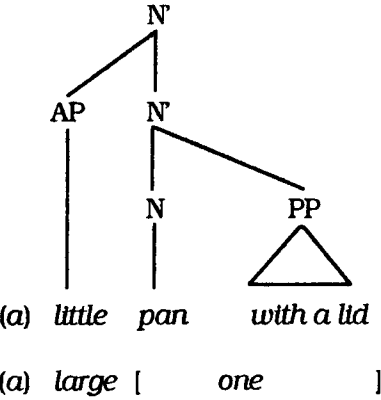
- [35] a. *We need a little pan with a lid.*
 b. *Here's a large one.*
 c. *Here's one without a lid.*

Let us suppose that, unless necessitated by other factors, [35a] has the flat structure in [36a]. The use of the proform *one* in [35b] and [35c] dictates the structures in [36b] and [36c] respectively.

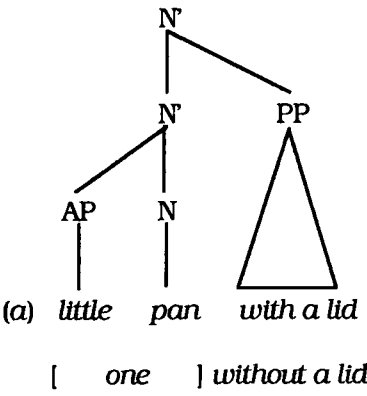
- [36] a.



- b.



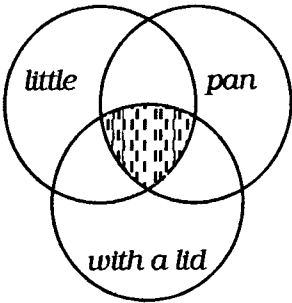
c.



While the tree structures in [36b] and [36c] conform to their respective constituent structures, the two trees differ also with respect to asymmetric c-command relationships. Note that in [36b] the AP asymmetrically c-commands the PP, whereas in [36c] it is the converse; the PP asymmetrically c-commands the AP. This is an unwelcome result. The trees in [36b] and [36c] are simply configurational versions of [36a] that are necessitated by different constituent structure. We do not want to allow the possibility of c-command relationships reversing: that begins to look as though constituent structure and asymmetric c-command are, in certain domains, incompatible with each other.

Note that there is no semantic difference between [little [pan with a lid]], [[little pan] with a lid] and [little pan with a lid]. This can be seen in the Venn diagram, where the shaded area represents the full phase. In similar fashion, no matter how one performs the addition $3 + 4 + 5$, as $(3 + 4) + 5$ or $3 + (4 + 5)$ the answer will always be 12.

[37]



We have already decided that if there is a conflict between constituency structure and binary branching, then it is binary branching that must be constrained. Perhaps we should now consider constraining the corollary of binary branching, namely asymmetric c-command. We have found that linear precedence is sufficient in certain circumstances to guarantee the effect of one node binding another node. Perhaps we should now dispense with the notion of asymmetric c-command in flat structures, and allow linear precedence alone to do the job.

This idea, that in flat structures linear precedence is sufficient to guarantee binding of one node over another, is in fact implicit in the model that I have outlined. We started with a flat structure without hierarchical asymmetries. The rule of linear precedence establishes that binding is from left to right. Only then do interpretative factors, such as *do so* substitution and coordination impose a (partial) configurational structure. This secondary structure cannot, however, affect the binding properties of the original flat structure. Thus linearity, where linearity operates, will always determine what binds what.

7.7 Conclusions

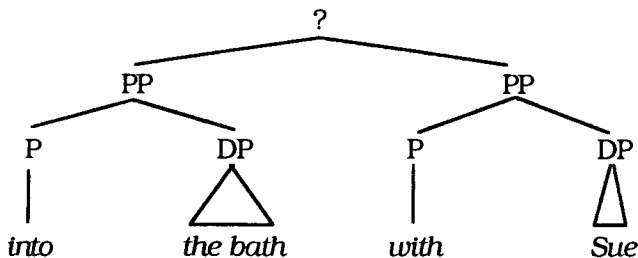
I have shown in this chapter that the VP-shell analysis of (Larson 1988) and others is suspect on a number of counts. The motivation for proposing a biclausal structure for a sentence such as *He rolled the ball into the gutter* is to enable the empirical facts of binding to be expressed in terms of asymmetric c-command, so that the direct object binds the DP complement of the preposition. The biclausal model corresponds to the facts of binding, but at a cost: it conflicts with the empirical facts of constituency structure. It seems that only a form of flat structure, where linear precedence is taken account of, is compatible with both constituency structure and the binding properties of c-command. Thus, Czepluch's (1997) Amended Definition of C-command, together with my proposal for flexi-flat structure, are able to overcome the problems of c-command inherent in the traditional monoclausal structure, without conflicting with the facts of constituency structure.

I gave further arguments against the VP-shell hypothesis, the strongest of which is the existence of the weak (transitive)/strong (intransitive) verb pairs. There is no mechanism in the VP-shell hypothesis that enables (or requires) a strong verb that originates and surfaces in a lower VP to turn into a weak verb when it raises into the higher VP. The argument that causative verbs originate in the lower VP and then raise to the higher VP is also undermined by the fact that there are causative verbs in the higher VP that require there to be a verb in the lower VP. *He made XP *(go) into YP* is a problem for those who argue that, as a causative verb, *made* originates in the same place that **(go)* surfaces in.

Having made a case for (flexi-) flat structure and for the idea that verbs surface in the VP in which they originate, I finish this chapter by giving the trees for three structures that I have discussed, namely (i) the verbless imperative (4.4.3), (ii) the ellipted imperative, and (iii) the Locative Alternation.

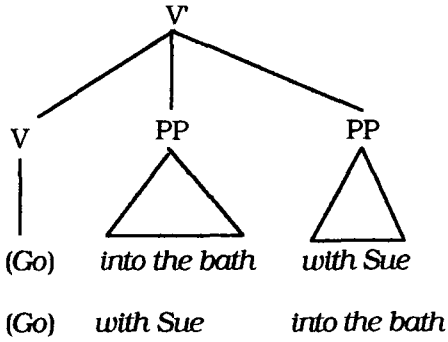
The tree that I propose for the verbless imperative has the structure in [38].

[38] Verbless Imperative

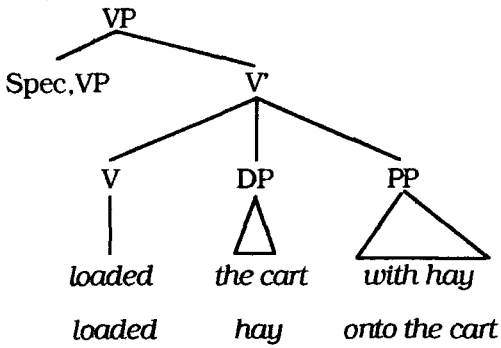


I hesitate to label the node to which the two PPs project; I concede that such a node poses a problem for the X-bar syntax, but no more of a problem, I think, than does the idea of Small Clauses (See Chapter 6).

Compare the structure in [38] with the tree structure for the ellipted imperatives in [39].

[39] Ellipted Imperatives

For the sentences of the Locative Alternation I propose the structure in [40].

[40] Locative Alternation

Note that what [40], for instance, shows is only that the verb *load* has two internal arguments in a (flexi-) flat configuration; the tree does not differentiate between Figure and Ground, or between the type of preposition heading the PP.

CHAPTER 8

THE FIGURE/GROUND SCHEMA AND THE INDO-EUROPEAN CASE SYSTEM

8.1 Introduction

In this chapter I introduce the templates for the *ent*-verbs, which, together with the templates for the *be*-verbs, allow us to formalize five locational features. I show how these five features are realized as P or as bare oblique cases, in conformity with Emonds' (1994) Alternative Realization and the Invisible Category Principle. I argue that the five oblique cases of Proto-Indo-European are alternative realizations of the P that host the five locational features.

8.2 More templates

I return now to the argument templates that I proposed in 7.4.4. In order to accommodate the German verbs prefixed by *ent*- in the Figure and Ground schema, we need the templates for the *ent*-verbs that are the counterpart of the templates that I proposed for the *be*-verbs. Before presenting the *ent*- templates I remind the reader of the templates that we have so far.

Recall that the basic template, given in [1], in which there is a Figure and a [+LOC] feature associated with a Ground, gives rise to the template in [2], in which the Figure is the subject of a [$\pm$ STATE] verb. I will remind the reader of what the templates stand for by giving the relevant structures associated with the sentence *He loaded the hay onto the cart*. Firstly we have the template for the structures with the Figure as the subject of a [$\pm$ STATE] verb.

- | | | | |
|-----|----------|---------------|----------|
| [1] | F | [$\pm$ LOC] | G |
| | (Figure) | [$\pm$ PATH] | (Ground) |

[2]	F	V ¹	[+LOC]	G
	(Figure)	[±STATE]	[±PATH]	(Ground)

- a. *The hay is on the cart.*
 Das Heu ist auf dem Wagen.
- b. *The hay goes onto the cart.*
 Das Heu geht auf den Wagen .

If we now add an Agent argument, we have two further templates. I give first in [3] the unmarked word order with the Figure preceding the Ground.

[3]	NP ³	V ²	F	(V ¹)	[+LOC]	G
	(Agent)	[+CAUSATIVE]	(Figure)	([±STATE])	[±PATH]	(Ground)
	<i>He</i>	<i>loaded</i>	<i>the hay</i>		<i>onto</i>	<i>the cart.</i>
	<i>Er</i>	<i>lud</i>	<i>das Heu</i>		<i>auf</i>	<i>den Wagen.</i>

The second template illustrates the situation when the [[+LOC] Ground] complex is foregrounded by advancing it to a position higher than the Figure. In this case the feature [+LOC] is realized in German as *be-* on the verb, and the grammatical preposition *mit* 'with' is inserted to give case to the Figure .

[4]	NP ³	V	[+LOC]	G		F
⇒	NP ³	<i>be-</i>	V		G	F
	(Agent)	[+LOC]	V		Ground	(P) Figure
	<i>He</i>		<i>loaded</i>		<i>the cart</i>	<i>with hay.</i>
	<i>Er</i>	<i>be-</i>	<i>lud</i>		<i>den Wagen</i>	<i>mit Heu .</i>

I now wish to present three further templates. They represent the inverse of the templates that I have presented so far. In order to make things as clear as possible, let

me simplify somewhat the templates that I have proposed so far, by introducing some straightforward symbols and reducing the information in the templates to a minimum.

- [5] a. Let $\bullet G = [+LOC, -PATH]$ (place where)
 b. Let $\rightarrow G = [+LOC, +PATH, +GOAL]$ (place where to)
 c. Let $\leftarrow G = [+LOC, +PATH, -GOAL]$ (place where from)¹

Using the symbols just given, the templates in [2] - [4] can be presented as follows:

- [6] a. F V $\bullet G$
The hay was on the cart.
Das Heu war auf dem Wagen.

- b. F V $\rightarrow G$
The hay went onto the cart.
Das Heu ging auf den Wagen.

- [7] a. A V F $\rightarrow G$
He loaded the hay onto the cart.
Er lud das Heu auf den Wagen.

¹ It is possible to use $\{\pm\}$ binary notation in conjunction with the single arrow $\rightarrow$:

- a. Let $[-\rightarrow G] = [+LOC, -PATH]$ (place where)
 b. Let $[\rightarrow G] = [+LOC, +PATH, +GOAL]$ (place where to)
 c. Let $[\rightarrow -G] = [+LOC, +PATH, -GOAL]$ (place where from)

In this notation $[\rightarrow -G]$ means 'to a place not the Ground', i.e. 'from the Ground'. The idea that *from* is the negative of *to* comes from Gruber (1976:53). For the sake of clarity of exposition, I will use the notation as in the main text. There are, however, as I show in Chapter 12, some *ent*-verbs whose prefix conveys the notion 'negation' or 'reversal of action', rather than simply the notion 'away from'.

b.	A	V	→G		F
⇒	A	→ V	G	P	F
	<i>He</i>	<i>loaded</i>	<i>the cart</i>	<i>with</i>	<i>hay.</i>
	<i>Er</i>	<i>be-lud</i>	<i>den Wagen</i>	<i>mit</i>	<i>Heu.</i>

8.2.1 The *ent*-templates

The *ent*- templates represent the inverse of the templates we have seen so far. The inverse of the →G templates has the Ground associated with the feature ←G, which has the meaning 'from, out of the Ground'. The basic template is given in [8] .

[8]	F	V	←G	
	<i>The hay</i>	<i>fell</i>	<i>off the cart.</i>	
	<i>Das Heu</i>	<i>fiel</i>	<i>von dem Wagen.</i>	

If we now add an Agent argument to [8], we derive the following two templates.

[9]	A	V	F	←G
	<i>He</i>	<i>unloaded</i>	<i>the hay</i>	<i>from the cart.</i>
	<i>Er</i>	<i>entlud</i>	<i>das Heu</i>	<i>von dem Wagen.</i>

Foregrounding of the Ground argument gives rise to the following.

[10]	A	V	←G		F
⇒	A	←V	G	P	F
	<i>Tom</i>	<i>unloaded</i>	<i>the cart</i>	<i>of</i>	<i>hay.</i>
	<i>Er</i>	<i>entlud</i>	<i>den Wagen</i>	<i>von</i>	<i>Heu.</i>

Further examples are given in [11].

- [11] a. F V ←G
Er floh von der Polizei.
 'He fled from the police.'
- b. A V F ←G
Er brachte die kinder aus der Schule.
 'He brought the children out of the school.'
- c. A ←V G P F
Er entband die Frau von einem Kind.
 'He delivered the woman of a child.'

I will postpone presenting a complete analysis of sentences containing the feature ←G until Chapter 10. Until then we have to deal with a number of theoretical issues that pertain to the realization of abstract features.

8.3 The five abstract features in the Figure/Ground schema

8.3.1 Prepositions as hosts for the features

In [4], [10] and [11c], when the Ground is foregrounded and the feature →G or ←G is realized as a prefix, it was necessary to insert a preposition, *mit* 'with' and *von* 'of' in order that the Figure could be given case, i.e. the Figure argument must somehow be given a role to play in the sentence. In the unmarked case the Figure receives case from the verb: Nominative if the Figure is the subject, Accusative if the Figure is the direct object. It is only in [4], [10] and [11c] that the Figure is neither subject nor object. Thus, when the Ground is foregrounded and receives Accusative case from the verb, the Figure is left stranded, with no means to indicate the role that it is to play. Insertion of a preposition defines the role of the Figure.

Let us suppose that the prepositions *mit* 'with' and *von* 'of' are not just empty grammatical morphemes, but realizations of features associated with the Figure.

What might these features be? They appear on the Figure when the foregrounded Ground carries the [+LOC] feature $\rightarrow G$ or $\leftarrow G$. The features on F are, then, related to the two Ground features, but represent, so to speak, the other side of the coin. If the features on the Ground are [+LOC] (+L), let us call the corresponding features on the Figure [-LOC] (-L), and let us represent them as $[-L\rightarrow]$ (associated with $\rightarrow G$) and $[-L\leftarrow]$ (associated with $\leftarrow G$).

The following table summarizes what we have so far.

[12] Base templates

a.			F	V	$\bullet G$
b.			F	V	$\rightarrow G$
c.			F	V	$\leftarrow G$
d.	A	V	F		$\rightarrow G$
e.	A	V	F		$\leftarrow G$
f.	A	V	$\rightarrow G$		$[-L\rightarrow]F$
g.	A	V	$\leftarrow G$		$[-L\leftarrow]F$

The table in [12] shows that there are five discrete abstract features. In English these five features are realized by the following prepositions:

- [13] $\bullet G$ **on** the cart
 $\rightarrow G$ **onto** the cart
 $\leftarrow G$ **off** the cart
 $[-L\rightarrow]$ **with** hay
 $[-L\leftarrow]$ **of** hay

A PP is not, however, the only means, whereby the features in [13] may be realized. In the next section I show that in morphologically rich languages the features may be realized by bare oblique cases.

8.3.2 Oblique cases as realizations of features

It is well known that in morphologically rich languages such as German there are verbs which subcategorize a non-accusative case. For instance the German verbs *folgen* 'to follow', *helfen* 'to help', *dienen* 'to serve' require a dative object. Why this should be has always remained a mystery to traditional grammarians. The answer to the question why it is that there are verbs that take a complement in an oblique (≠ Accusative) case is provided by the Figure/Ground schema and the way it interacts with morphological cases. Note first the relationship between the simple and prefixed verbs in [14].

- [14] a. *Er (F) folgte den Dieben*_{DAT} (G)
'He followed the thieves'.
- b. *Er (F) verfolgte die Diebe*_{ACC} (G) [+ANIMATE object]
he *ver*-followed the thieves
'He pursued the thieves.'
- Er (F) befolgte die Regeln*_{ACC} (G) [-ANIMATE object]
he *be*-followed the rules
'He followed the rules'.
- c. *Der Soldat (F) diente dem König*_{DAT} (G)
'The soldier served the king.'
*Der Soldat (F) diente für den König*_{ACC} (G)
'The soldier served for the king.'
- d. *Der Verkäufer (F) bediente den Kunden*_{ACC} (G)
the salesman *be*-served the customer
'The salesman served the customer.'

Once again we see that the prefixed verbs take the Ground as direct object in the accusative and that the simple verb cannot have the Ground as an accusative object. Why, though, is *den Dieben* in [14a] not the complement of a preposition, since *folgen* is a CLASS II verb like *lachen* in [15]? From the discussion of CLASS II verbs in 3.3.1 we expect an alternation of the type shown in [15].

- [15] a. *Er (F) lachte über mein Einkommen (G).*
 'He laughed about (=at) my income.'
- b. *Er (F) belachte mein Einkommen (G).*
 he *be*-laughed my income
 'He laughed at my income.'

In [15] the [+LOCATION] feature on the preposition *über* 'about' is realized as the *be*-prefix on *belachte*. Since *folgen* + DAT and *dienen* + DAT alternate with their respective prefixed counterparts + ACC, it appears that a bare dative case is playing the role of a [+LOCATION] PP.

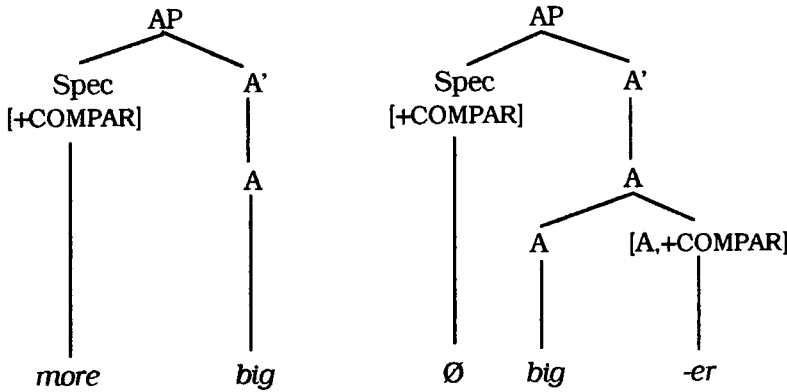
This is in line with Emonds' (1994:617) view. Emonds argues that the morphological dative case on indirect object NPs and on NP complements to adjectives in Classical Greek, Latin and German must be ascribed to the presence of an empty introductory P and that the case-mark 'dative' must be formally represented as an index or feature P on the NP sister of P. The mechanism whereby the feature hosted by P can be realized as dative on the NP is the principle of Alternative Realization; that the P may be zero is sanctioned by the Invisible Category Principle.

8.3.2.1 Alternative Realization and the Invisible Category Principle

First proposed by Emonds (1994), he shows how the idea works with reference to verbal inflection in English, the PLURAL feature on nouns and the comparative forms of the English adjective.

The comparative (COMPAR) of English adjectives is realized in one of two ways, either by means of the word *more* or by means of the affix *-er* on the A itself.

[16]



Spec,A is the host category for the feature (F) COMPAR. The feature may be realized in Spec,A by the morpheme *more* or Spec,A may remain empty if the feature is realized as the affix *-er* on the adjective itself. Emonds proposes two principles to enable this to operate, Alternative Realization (AR) and the Invisible Category Principle (ICP). These are given in [17], (the 1994 versions).

[17] a. Alternative Realization

Suppose F is a syntactic feature of a bar notation host category C. A purely syntactic lexical entry (with no semantic features) may realize F as some $E \neq C$ provided some E^j constitutes a sister to $[C,F]$.

b. Invisible Category Principle

If all features F of a host category C except perhaps C itself are alternatively realized by overt productive morphology on the head of C's phrasal sister, C may be $\emptyset$.

Thus, AR allows a feature to be realized elsewhere than on its host; if AR takes place, the ICP allows the host category to remain empty.

AR and the ICP account for Dative case morphology on the complements of the verbs *folgen*, *dienen*, *helfen*: a bare Dative complement is the alternative realization of the $[-\rightarrow G]$ feature that is canonically realized by a preposition. Since all the features of the preposition are alternatively realized, the preposition itself is empty.²

8.3.2.2 Bare Genitive and Dative complements

I show in this section that a PP which is required, for instance, by a CLASS I simple verb for the Figure may be realized by a bare genitive. Recall from 3.3.1 that the CLASS I verbs have the Figure and Ground internal to the VP. In the following examples the genitive NP is the Figure, and is, therefore, in a zero-headed PP, while the Ground is the accusative object of the prefixed verb.

- [18] a. *Ich_i bemächtigte mich_i (G) eines Autos_{GEN} (F)*

I be-might-ed myself of-a car

'I gained possession of a car.'

- b. *Ich_i bediente mich_i (G) eines Messers_{GEN} (F)*

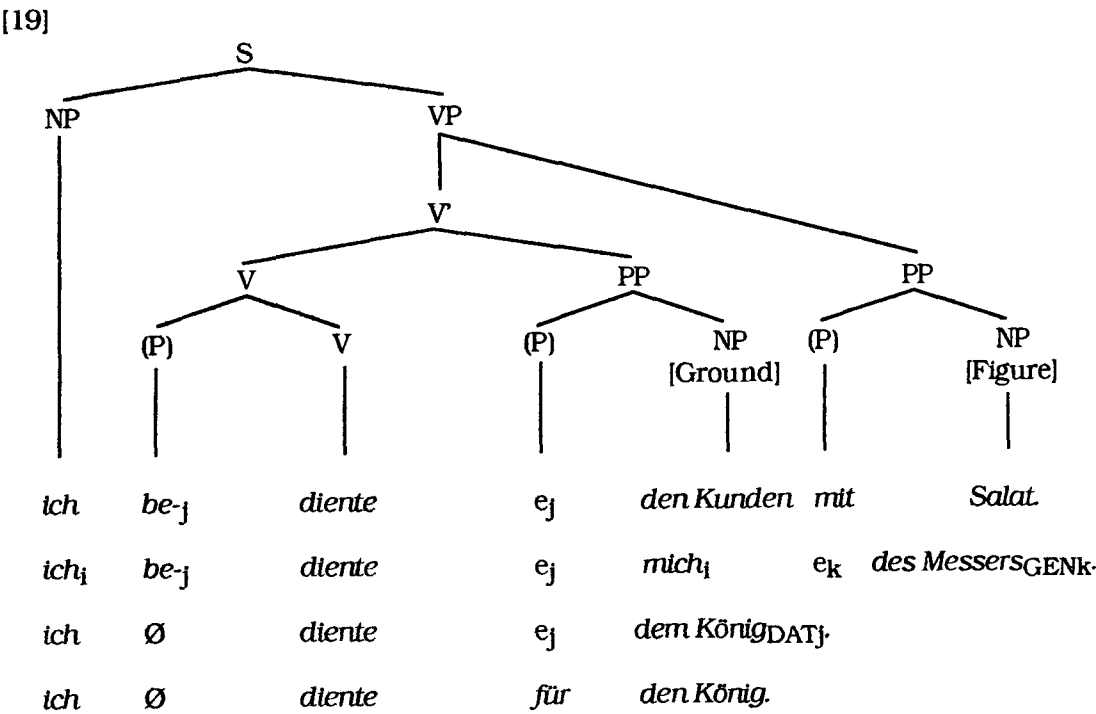
I be-served myself of-a knife

'I made use of a knife.'

The idea is conveyed by the tree below, which shows the structure that I propose for various ways in which the verb *dienen* 'serve' can occur. Note firstly that there are two VP-internal PPs. The preposition heading the PP containing the Ground argument may be alternatively realized as the *be*-prefix on the verb (in which case the Ground is the accusative direct object of the verb), or it may be realized as Dative case on the Ground NP (in which case the head P is null), or it may be realized by the preposition *für* 'for'. The preposition heading the PP containing the Figure ar-

² Emonds (p.c.) points out that the ICP, as it stands, says only that a category C **may** be $\emptyset$; it is silent about when the category C **must**, as in this case, be empty.

gument may be realized as the grammatical formative *mit* 'with' or as Genitive case on the Figure NP.



The same analysis can be extended to a number of *ent*- and *ver*-verbs.

- [20] a. *Ich_i enthielt mich_i (G) des Lachens_{GEN} (F)*
I *ent*-held myself of-the laughing
'I refrained from laughing.'
- b. *Ich_i versicherte mich_i (G) der Korrektheit_{GEN} (F) der Gleichung*
ich *ver*-sure-ed myself of-the correctness of the equation
'I assured myself of the correctness of the equation.'

8.4 The Proto-Indo-European case system

The question that now arises is whether the genitive and dative cases in the examples above are 'just idiomatic' or part of a more comprehensive pattern. Do these two cases 'mean' anything? Is their occurrence to any extent predictable? I think that the

answer to both questions is yes. Before I show what I mean, I think I ought to place my proposal in the context of what writers have so far written about the Indo-European case system.

8.4.1 *Traditional grammarians*

There is a wealth of literature, particularly on the Classical languages, that deals with 'use of cases'. The traditional method of analysis has always been classification according to perceived semantics. Some traditional classifications of, for example, the Latin Genitive list more than thirty distinct uses. These uses are given names such as: the Appositive Genitive, or Genitive of Specification; the Genitive of Quality; the Genitive with Adjectives of Fulness, of Participation, and of Power, of Knowledge and Ignorance, of Desire and Disgust; the Genitive with verbs of Memory, etc. (Gildersleeve and Lodge 1965:230ff.)

Some writers have attempted to reduce the list of uses of the Latin Genitive. de Groot (1956) proposes that there are just eight distinct uses. Benveniste (1971:121) shows that de Groot's eight different uses can be yet further reduced to just one. In the examples in [21] a verb such as *tolerare* 'tolerate' takes an accusative complement. The adjective *tolerans* 'tolerant' and the noun *tolerantia* 'tolerance' are unable to take an accusative complement; their complements are given case in the genitive. The nominative subject of the verb *ridet* 'laughs' becomes a genitive when it appears with the noun *risus* 'laugh'. The genitive case in the structure [NP NP_{GEN}] comes to signal the notion of possessor, as in *liber pueri* 'the boy's book'.

- [21] a. *tolerare frigus*_{ACC} *tolerans frigoris*_{GEN} *tolerantia frigoris*_{GEN}
 'tolerate cold' 'tolerant of cold' 'tolerance of cold'
- b. *puer*_{NOM} *ridet* *risus pueri*_{GEN}
 'the boy laughs' 'the boy's laugh'

c.

*liber pueri*_{GEN}
'the boy's book'

Benveniste proposes that:

... the function of the genitive is defined as the result of a transposition of a verbal syntagm into a nominal syntagm; the genitive is the case that, between two nouns, assumes for itself alone the function that in an utterance with a personal verb falls to either the nominative or the accusative. All other uses of the genitive ... are derived from this, as subclasses with a specific semantic value, or as varieties of a stylistic nature.

Benveniste(1971:127)

Benveniste's analysis of the Latin Genitive, which relates it syntactically to the nominative and the accusative, is a considerable advance on traditional classifications.

There have been other attempts to relate the various cases to each other in some sort of 'system'. Over sixty years ago Hjelmslev, writing on Greenlandic Eskimo, had the intuition that cases represented features: a case signifies 'a single abstract notion from which one can deduce the concrete uses' (1935:85). He also maintained that the meaning of a particular case cannot be determined in isolation, but only from a consideration of the oppositions within the case system.

In Greenlandic Eskimo four of the cases illustrate the opposition between *rapprochement* 'bringing nearer' and *éloignement* 'taking away'.

[22]	Ablative	<i>from</i>
	Allative	<i>to</i>
	Locative	neither <i>from</i> nor <i>to</i>
	Prosecutive	both <i>from</i> and <i>to</i> (meaning 'through')

Hjelmslev distinguishes between another opposition, 'coherence' (involving penetration or contact), and 'incoherence' (involving mere proximity). With the addition of $[\pm\text{coherent}]$ we have the matrix in [23], which contains an additional four cases under $[-\text{coherent}]$

[23]

	- coherent	+ coherent
[+ from, - to]	Ergative	Ablative
[- from, + to]	Equative	Allative
[- from, - to]	Nominative	Locative
[+ from, + to]	Instrumental	Prosecutive

I am unable to judge whether this matrix fits the uses of case in Greenlandic Eskimo. While it seems plausible, likely even, that the cases under $[\text{+coherent}]$ are instantiations of the features in the lefthand column, I can see little likelihood that the same features are borne by the cases under $[-\text{coherent}]$.

Jakobson (1936,1971) observes that there are a number of syncretisms in the Russian declensional paradigms. On the basis of these syncretisms, he develops the notion of 'opposition'. Thus, because there is some syncretism between Nominative and Accusative (masculine inanimate singular, neuter singular, inanimate plural) Jakobson assumes there to be an opposition between the two cases. He further divides the cases into oppositions of unmarked/marked, and full/peripheral cases. Nominative and Accusative are *Vollkasus* 'full cases'. Nominative is unmarked, opposed to it is the Accusative, which is always subordinated to it, and which signals direction or goal. The Instrumental and Dative are opposed to the Nominative and Accusative as *Randkasus* 'peripheral cases' . The Dative is aligned with the Accusative in that both express the goal of an event. The Instrumental is the unmarked *Randkasus*, just as the Nominative is the unmarked *Vollkasus*. Jakobson's alignment of the cases is given in [24], where markedness is shown by the position in

the table; any case or cases to the right or below another case is marked or subordinate to that case. Jakobson claims that Russian has two Genitive cases and two Locative cases: Genitive II is the partitive Genitive (as opposed to the Genitive of possession, etc.), Locative II is found only after certain prepositions denoting location.

[24]

Jakobson's (1936) Russian case system							
<i>Vollkasmus</i>	(nom	~	acc)	~	(gen I	~	gen II)
	<i>f</i>		<i>f</i>		<i>f</i>		<i>f</i>
<i>Randkasmus</i>	(Inst	~	dat)	~	(loc I	~	loc II)

The first criticism that we might make of Jakobson's case system is that it includes two cases that have no real existence. Genitive II is a partitive genitive; only a very few masculine singular nouns have a form for the partitive genitive that is distinct from the normal genitive case. Similarly, locative II is restricted to a small number of masculine singular nouns. There is scant justification for positing two genitive and two locative cases.

- [25]
- a.

*vkus saxara*_{GEN.I}

'the taste of sugar'

*kusok saxaru*_{GEN.II}

'a lump of sugar'

*vkus šokolada*_{GEN}

'the taste of chocolate'

*kusok šokolada*_{GEN}

'a piece of chocolate'

b.

*pisat' o sade*_{LOC.I}

'write about the garden'

*guljat' v sadu*_{LOC.II}

'walk in the garden'

*pisat' o gorode*_{LOC}

'write about the town'

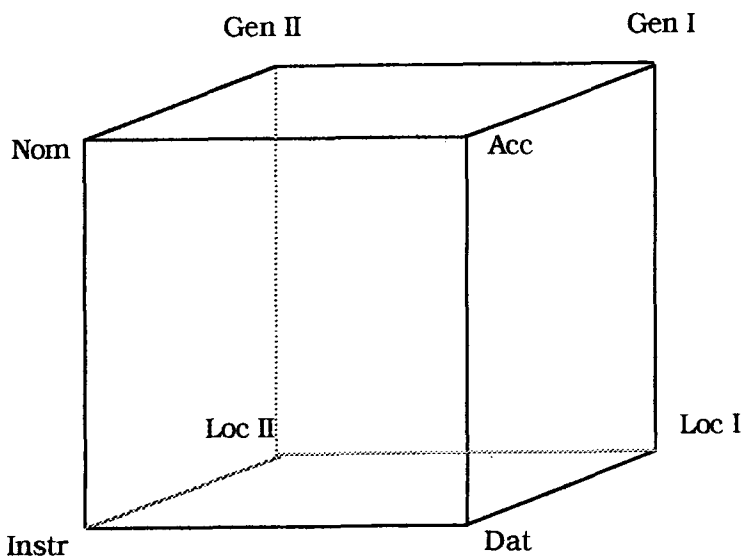
*guljat' v gorode*_{LOC}

'walk in the town'
- 236

A second criticism of Jakobson's case system is that it depends on a series of oppositions. It is difficult to envisage precisely what these oppositions signify. Are they semantic? If they are semantic, then they are so at a very abstract level. If they are lexical, they seem only taxonomic. We might also wonder whether Jakobson's analysis of the Russian case system is unique to Russian, or whether it has any cross-linguistic validity. It would be odd if the case system of one Indo-European language, Russian, bore no relation to that of another Indo-European language, say Latin.

In 1958 Jakobson presented his system in the form of a cube. The corners of the cube represent the eight cases, and the edges of the cube between the corners represent the features $[\pm\text{direction}]$, $[\pm\text{marginal}]$, $[\pm\text{quantification}]$.

[26]



Blake's view of Jakobson's system is summed up as: 'I think it would be fair to say that Jakobson's characterization of the Russian cases in terms of features is less than perspicuous and there is less than adequate demonstration of how the feature analysis can be exploited' (1994:41).

Neidle (1982:397) presents Jakobson's Russian case system in the form of a feature matrix, given in [27]. The feature $[\pm\text{quantifying}]$ is equivalent to $[\text{partial involvement}]$, and $[\pm\text{ascriptive}]$ is equivalent to $[\pm\text{directional}]$.

[27]

Neidle's Russian case system			
	±marginal	±quantifying	±ascriptive
Nominative	-	-	-
Accusative	-	-	+
Genitive I	-	+	+
Genitive II	-	+	-
Locative II	+	+	-
Locative I	+	+	+
Dative	+	-	+
Instrumental	+	-	-

The same criticisms can be made about Neidle's feature matrix, as I made about Jakobson's system, on which Neidle bases her feature matrix. We do not know whether her matrix is based on semantic, syntactic, or other considerations. Knowing that Genitive I, for instance, is -marginal, +quantifying, +ascriptive does not predict when Genitive I will occur. Emonds (1985:237) criticizes analyses that depend on sets of distinctive features on the grounds that such features are not categories that occur elsewhere in the grammar; they are *ad hoc*.

In generative linguistics morphological case has not received as much attention as other elements of language, such as word order, empty categories, etc. Chomsky (1981:ch3) supposes that the fundamental properties of Case-assignment are as in [28].

- [28] (i) NP is nominative if governed by AGR
- (ii) NP is objective if governed by V with the subcategorization feature:
 __ NP (i.e. transitive)
- (iii) NP is oblique if governed by P
- (iv) NP is genitive in [NP__X']

- (v) NP is inherently Case-marked as determined by properties of its
[__N] governor

Chomsky (1981:170)

Chomsky further refers to the case assigned under (i) to (iv) as 'structural case' and to the case assigned under (v) as 'inherent case'.

There are a number of problems with [28] that become apparent as soon as we examine data in a language that has morphological case marking. Firstly, stipulation (iii), that NP is oblique if governed by P, is problematic in view of the fact that P can take accusative (objective) case. Secondly, the case that P requires its complement to have appears to be covered under (v), since P is a NP governor; thus it appears that all case assigned by P is inherent case. Then what about structural genitive case that is assigned by *of*, or German *von*?

Blake (1994:34) cites Nichols (1983) writing on the Russian case system. Nichols takes the extraordinary view that in Russian there is no difference in syntactic relations between the accusative complement of *ljubit'* 'to love', the instrumental complement of *interesovat'sja* 'to be interested in', the dative complement of *udiviljat'sja* 'to be surprised at' and the prepositional complement of *serdit'sja* 'to get angry with', which takes a preposition *na* 'on(to)', which in turn governs the accusative. Nichols describes all of these complements as the 'first object' (1983:171).

Now this is, I think, extraordinary in that, in writing about syntactic relations, Nichols chooses to ignore the key to the syntactic relations provided by her examples. The three verbs *interesovat'sja*, *udiviljat'sja*, and *serdit'sja* necessarily subcategorize an oblique case or a PP, because they are reflexive. The Russian reflexive clitic *-sja* (a reduced form of the anaphor *sebjja*_{ACC}) is always the accusative direct object of the verb. This at least explains why a second complement cannot be an accusative object. The answer to the question why the complements of these verbs are realized by the Instrumental, Dative, and P + Accusative must wait until I have elaborated my own hypothesis.

A precedent for Nichols' view is perhaps provided by Kuryłowicz (1964:193), also cited by Blake (1994:34). Kuryłowicz takes the ablative case marking on the Latin *gladius* 'sword' in *gladio utor* 'I am using a sword' to be 'voided of its semantic contents' and to have become 'an allomorph of the ending of the accusative (of direct object), a simple sign of syntactical subordination. A writer who takes ablative morphology to be an allomorph of accusative morphology has abandoned any attempt to unravel the mysteries of morphological case.

There have, however, been writers who have pointed in what I consider to be the right direction: see Emonds (1985:ch.5) for a discussion of case morphology in Classical Greek, Latin, German and Sanskrit; Babby (1976, 1980, 1985, 1987) for illuminating discussions of case in Russian and other Slavic languages; Zaenen, Maling & Thráinsson (1985), Van Valin (1991) on Icelandic case; Vainikka (1993) on Finnish case; Czepluch (1982) on the German Dative; Holmberg & Platzack (1995) on case in Scandinavian languages.

An early view of the Indo-European case system is provided by Whitney (1898):

The accusative is the *to*-case, marking that toward which the action of the verb is immediately directed, and hence becoming also the case of the direct object; the ablative is the *from*-case; the locative, the *at*- or *in*-case; the instrumental, that of adjacency or accompaniment, then of instrument or means - the *by*-case, in both senses of *by*. Then the dative is the *for*-case, and the genitive the *of*-case, that of general relation or concernment. The nominative, finally, is the case of the subject ...

(Whitney 1898:205-6)

The meaning of the cases given by Whitney is very close to the meaning that I ascribe to them, although the basis for our proposals is different: Whitney's meanings are based on the perceived semantics of case usage; the meanings that I ascribe to the cases derive from the function of the five oblique cases in the Figure/Ground schema.

8.4.2 The cases in the Figure/Ground schema

It is commonly assumed that Proto-Indo-European (PIE) had eight morphological cases (Woodcock 1959:xxd). If we remove the vocative from the list, on the grounds that the vocative is, by its nature, outside syntax, then we are left with seven syntactic cases. A significant part of my proposal is that these seven PIE cases are underlyingly present in the synthetic languages we are considering.

I propose that the seven cases can be subdivided into two groups, 'free' cases and Figure/Ground-related cases. The free cases are closer to the 'structural' cases of Chomsky. I call them 'free', since they are not bound to, or related to, or in any way associated with, the distinction between Figure and Ground. The Figure-Ground-related cases are, as their name suggests, related to, or associated with, one of either the Figure or the Ground. One case, the *GENITIVE*, may be free or F/G-related. In [29] I give the PIE cases and their status. (I give the names of the cases in italic small capitals to indicate that they are to be understood as PIE underlying cases.)

[29]

Free Cases	F/G-related Cases
<i>NOMINATIVE</i>	
<i>ACCUSATIVE</i>	
<i>GENITIVE</i>	<i>GENITIVE</i>
	<i>DATIVE</i>
	<i>INSTRUMENTAL</i>
	<i>LOCATIVE</i>
	<i>ABLATIVE</i>

That *GENITIVE* occurs both as a free case and as a F/G-related case can be seen from the following examples. The preposition *of* after the first nominal in each phrase is the free *of*, the English equivalent of the Latin Genitive described by Benveniste (1971), mentioned earlier in this section. This free *of* is required to give case to the NP

that would have been in the Accusative, if the NP had been the complement of a verb *He loaded {the hay/the cart}.....* The *of* in bold face in the last example is, I claim, a F/G-related Genitive that is required in this example because *hay* is the Figure. Note that the first P is the free *of* regardless of whether its complement is a Figure or a Ground, whereas the second P differs in each case.

- [30] {the loading/a loader} of hay onto carts
 {the loading/a loader} of carts with hay
 {the unloading/an unloader} of hay from carts
 ?{the unloading/an unloader} of carts **of** hay³

Let us suppose that the five oblique cases of Proto-Indo-European are alternative realizations of the five features associated with the Figure and the Ground (9.3.1), and let us suppose furthermore that these five cases are underlyingly present in Latin, Russian and German. I list the five cases in [31] in italic small capitals alongside the features that they represent.

- [31] •G *LOCATIVE*
 →G *DATIVE*
 ←G *ABLATIVE*
 [-L→] *INSTRUMENTAL*
 [-L←] *GENITIVE*

The cases given in [31] are not all fully differentiated in the various languages. Latin, Russian and German have all retained distinct Genitive and Dative cases (directly corresponding to the PIE *GENITIVE* and *DATIVE*). Latin has coalesced the three remaining cases *LOCATIVE*, *INSTRUMENTAL*, *ABLATIVE* into one case, the Ablative.

³ J. Emonds (p.c.) questions the grammaticality of the fourth example. I am not sure, and put a question mark. The point at issue is unaffected; *of* is sometimes free, sometimes F/G- related.

Russian has retained a distinct Instrumental (= *INSTRUMENTAL*), and a distinct Locative (= *LOCATIVE*), but the function of *ABLATIVE* has been taken over by the Genitive, either as a bare Genitive, or more usually by means of a preposition taking the Genitive. German has retained only the *GENITIVE* and *DATIVE* as bare cases; apart from carrying the feature *DATIVE*, the German Dative case is also an amalgam of *INSTRUMENTAL*, *ABLATIVE*, *LOCATIVE* (cf. Schmidt 1984:46). I show the incidence of bare oblique cases in the three languages in the table in [32]. (I will continue to use initial capital and lower case for the morphological realization of the underlying PIE case, e.g. *DATIVE* is realized as Dative in German.)

[32]

BARE OBLIQUE CASES			
Indo-European	Latin	Russian	German
<i>GENITIVE</i>	Genitive	Genitive	Genitive
<i>DATIVE</i>	Dative	Dative	Dative
<i>INSTRUMENTAL</i>	Ablative	Instrumental	
<i>LOCATIVE</i>	Ablative		
<i>ABLATIVE</i>	Ablative	Genitive	

8.4.2.1 Speculation on the advent of P

Let us suppose that at some early period the PIE language realized the five features in [31] solely by means of the five oblique cases. At some point prepositions, derived from 'adverbials', came to be inserted, in the first place, perhaps as a refinement of the feature, i.e. to make the feature more explicit⁴. At a later stage the need for

⁴ The idea that prepositions derived from adverbials is to be found in Whitney (1898):
The oldest of them (the prepositions in Indo-European languages, RM) were originally ... adverbs, modifiers of verbal action, only aiding to determine the noun-case which that action should take as its further adjunct.

(1898:94)

prepositions became more acute when syncretism and the gradual loss of cases began to result in ambiguities.

8.4.2.2 *P + Acc as a realization of DATIVE*

I have yet to comment on the fact that, although the feature [$\rightarrow$ G] is underlyingly represented by *DATIVE*, it is more usually realized by a preposition that takes Accusative case. A preposition taking Accusative is the norm in Latin, German and Russian for expressing motion towards an object.

[33]	<i>in urbem</i> _{ACC} <i>venit.</i>	Latin
	in town came-3.s	
	<i>Priexal v gorod</i> _{ACC} .	Russian
	came-3.s in town	
	<i>Er kam in die Stadt</i> _{ACC} .	German
	he came in the town	
	'He came into the town.'	

Note that *ACCUSATIVE* does not appear in the table of oblique cases; both *NOMINATIVE* and *ACCUSATIVE* are free cases reserved for other things, i.e. subject and direct object, respectively.

Let us suppose that when prepositions began to reinforce the bare cases, the prepositions would simply be an addition, i.e. the prepositions would not alter the

Prepositions, in our sense of the term, are of yet more recent origin, created a separate part of speech by the swinging away of certain adverbs from apprehended relation to the verb, and their connection in idea with the noun-cases which their addition to the verb had caused to be construed with it.

(ibid.:208)

Woodcock holds a similar view (1959:3). See the quotation from Woodcock in the next section.

case that they were reinforcing. Thus, *ABLATIVE* in Latin can be a bare Ablative or a preposition also taking the Ablative case; *LOCATIVE* in German is realized by a preposition taking the Dative case, since the German Dative corresponds to *LOCATIVE*.

A problem arises when prepositions are called in to reinforce the feature [→G]. I claim that the bare case form for this feature is *DATIVE*. The *DATIVE* case, however, seems to resist association with a preposition. In Latin, for instance, there are no prepositions that take Dative; Russian has just two prepositions that take the Dative, *k* 'towards' and *po* 'along'. Of the German prepositions that take Dative, only two plausibly correspond to *DATIVE*, viz. *zu* 'to' and *nach* 'towards'. The others correspond to one or more of the other oblique cases. This can be seen from the following table. The numeral superscripts refer to the notes below the table.

[34]

German P + Dat	Underlying PIE case and meaning of German P				
	<i>GENITIVE</i>	<i>DATIVE</i>	<i>INSTRUMENTAL</i>	<i>LOCATIVE</i>	<i>ABLATIVE</i>
<i>aus</i>					'out of'
<i>außer</i>				'beside'	
<i>bei</i>				'with' ¹	
<i>mit</i>			'with' ²	'with' ³	
<i>nach</i>		'towards'			
<i>von</i>	'of' ⁴		'by' ⁵		'from' ⁶
<i>seit</i>				'since'	
<i>zu</i>		'to'			

Notes:

1. *Er ist **bei** seinem Vater.*

'He is **with** his father. (= he is where his father is)
2. *Er wandert **mit** seiner Familie.*

'He hikes **with** his family.'

3. *Er ißt **mit** einem Löffel.*
'He eats **with** a spoon.'
4. *Er entlud den Wagen **von** Heu.*
'He unloaded the cart **of** hay.'
5. *Der Film wurde **von** Faßbinder gedreht.*
'The film was made **by** Faßbinder.'
6. *Der Brief kam **von** seinem Freund.*
'The letter came **from** his friend.'

It seems clear that the feature *DATIVE* is incompatible with prepositions other than a restricted number with some sort of meaning equivalent to 'towards'.

In fact the original significance of the Dative is much disputed. According to Woodcock (1959:39), some grammarians maintain that all Latin uses of the Dative can be derived from an original sense of 'direction towards a goal'. Woodcock rejects this idea and points out that:

One would expect our earliest texts to show a preponderance of nouns denoting concrete things or places in the Dative, particularly after verbs of motion. This is not so. Throughout Latin the Dative is preponderantly used of nouns or pronouns denoting persons. The history of the truly local cases (Acc and Abl) suggests that, if all the uses of the Dative developed out of an original goal-notion, prepositions would have been called in, to distinguish the various senses. But the Dative in Latin is never used with a preposition.

Woodcock (1959:40)

What happens, then, when *DATIVE* is reinforced by prepositions? If *DATIVE* is, for some reason, not available, what about some other oblique case? The other oblique cases all have a clearly defined meaning and are therefore, I suggest, not available to substitute for *DATIVE*. I propose that the only recourse is to co-opt a free case, *ACCUSATIVE*. Note that P + Accusative is general in the Indo-European languages for the *DATIVE* feature →G.

Woodcock (1959) offers a rather different view of the emergence of →G prepositions that take Accusative. Firstly, he repudiates the idea put forward by some earlier writers that the Latin Accusative is an amalgamation of two original PIE cases, a 'grammatical' case and a local case. He then speculates that at some early stage in the language all verbs were intransitive, and that it would often be the case that an Accusative adverbial, indicating some sort of direction or goal, would be added to the verb phrase. At a later stage this Accusative would come to be regarded as the Accusative complement of a now transitive verb. Woodcock illustrates the process as follows:

The intransitive verb *cedere* 'retire' came to be used transitively in the sense 'yield, give up'. Then *cedit urbem* would have been ambiguous between meaning 'He retires to the city' or 'He surrenders the city'. In such circumstances it became necessary to add another word, an adverb of place, to the Accusative, in order to distinguish the former sense from the latter. Words like *ad*, *in*, *ab*, *ex*, *de* were originally such adverbs of place. When it had become necessary for them regularly to accompany an Accusative or Ablative, to express a certain sense, it began to be felt that a word in the Accusative or Ablative must always accompany them, and they ceased to be used as independent adverbs. They had become prepositions.

Woodcock (1959:3)

Now it is indeed the case that *He came to the city* can be rendered in Latin by means of the Accusative, with or without a preposition⁵.

- [35] (*ad*) *urbem*_{ACC} *venit*
 to city came.3.s
 'He came to the city.'

⁵ I think, however, that the use of the bare Accusative to denote direction towards a goal may well have been originally reserved for inanimate objects, i.e. NPs that could plausibly be viewed as locations. If the Ground was not a plausible location, then *DATIVE* may have been the case used.

There are a number of verbs in Latin, Russian and German that take Dative case. The verbs in the following table have a Figure subject and a Ground complement in the Dative.

[36]

Verbs taking Dative complements				
meaning	Latin	Russian	German	Icelandic ⁶
'believe'	<i>credo</i>	<i>verit'</i>	<i>glauben</i>	<i>trúa</i>
'trust'	<i>fido</i>	<i>doverjat'</i>	<i>trauen</i>	<i>treysta</i>
'command'	<i>impero</i>	<i>prikazat'</i>	<i>befehlen</i>	<i>skipa</i>
'obey'	<i>pareo</i>	<i>sluŝat'sjaREFL</i>	<i>gehorschen</i>	<i>hlýða</i>
'serve'	<i>servio</i>	<i>služit'</i>	<i>dienen</i>	<i>þjóna</i>
'advise'	<i>suadeo</i>	<i>sovetovat'</i>	<i>raten</i>	<i>ráðleggja</i>

The complements of the verbs in [36] are likely to be [+human] Grounds. It surely cannot be a coincidence that the four languages, one Romance, one Slavic, and two Germanic, interpret the relationship between someone believing, trusting, obeying, etc. someone else, as being in the Figure/Ground schema. Secondly, it is also perhaps remarkable that *DATIVE* has survived in all four languages as a bare Dative case with these verbs, particularly since the only verbs in the table that are cognate with the corresponding verb in one of the other languages are the two Germanic languages, German and Icelandic (cognates indicated by the symbol '), i.e. there are no cognates across the boundaries between Germanic, Romance and Slavic.

Note also that the alternation between *DATIVE* and P + Accusative can be found in all three languages.

[37]	'I believe my father'	'I believe in my father'	
	<i>credo patri</i> _{DAT}	<i>credo in patrem</i> _{ACC}	Latin

⁶ I am grateful to Ute Bohnacker (p.c) for the Icelandic data.

<i>verju otsu</i> _{DAT}	<i>verju v otsa</i> _{ACC}	Russian
<i>ich glaube meinem Vater</i> _{DAT}	<i>ich glaube an meinen Vater</i> _{ACC}	German

That there is a division of labour between the Latin Accusative and Dative in representing the feature $\rightarrow G$ according to whether G is a location or human is supported by a similar division of labour between the Latin Ablative and Dative in representing the feature $\leftarrow G$. With the following verbs the NP representing the person from whom the book is taken is in the Dative case.

[38] {adimo, demo, extimo, eripio, aufero, detraho} tibi_{DAT} librum_{ACC}

'I take, withdraw, snatch ... the book from you.'

Woodcock (1959:44)

According to Woodcock (1959:44) the Ablative with preposition is the normal construction in Classical Latin when it is a thing or a place, and not a person or personified thing, from which the withdrawal takes place.

There is nothing in German or Russian comparable with the Latin selection of case according to the value of the feature $[\pm\text{human}]$ on the NP. Whatever the means whereby the Accusative came to be used after prepositions denoting 'motion towards', it is an observable fact that this construction is the norm in all three languages, and I will continue to maintain that $P + \text{Accusative}$ is a realization of *DATIVE*.

When we look at German, we find numerous examples $P + \text{Accusative}$ occurring in an alternation with a bare Dative. In the following examples the feature *DATIVE* may be realized in German as Dative case on the NP, or as a preposition taking Accusative case.

[39] a. *Er schrieb seinem Freund*_{DAT}.

'He wrote (to) his friend.'

a'. *Er schrieb an seinen Freund*_{ACC}.

'He wrote to his friend.'

- b. *Er lieferte der Firma_{DAT} die Waren*
 he delivered the firm the goods
 'He delivered the goods to the firm.'
- b'. *Er lieferte die Waren an die Firma_{ACC}.*
 'He delivered the goods to the firm.'

Note further that in accordance with preposition incorporation (4.2.1), there is an alternative realization of [39b']. When the PP *an die Firma* is foregrounded, the preposition *an* is realized by its allomorph, the *be-* prefix. Thus we have [40] as an alternative to [39b] and [39b'].

- [40] *Er belieferte die Firma mit Waren.*
 he *be*-delivered the firm with goods
 'He supplied the firm with goods.'

Note the fact that a bare Dative, a preposition taking the Accusative, and the *be-* prefix, are all realizations of the *DATIVE* feature →G. The realization of the five features as bare cases or as prepositions is summarized in the table in [41].

[41]

Indo-European	Latin	Russian	German
<i>GENITIVE</i>	Genitive	Genitive	Genitive P + Dative
<i>DATIVE</i>	Dative P + Accusative	Dative P + Accusative	(P +) Dative ¹ P + Accusative
<i>INSTRUMENTAL</i>	Ablative	Instrumental	P + Dative
<i>LOCATIVE</i>	(P +) Ablative P + Accusative ²	P + Locative P + Instrumental	P + Dative
<i>ABLATIVE</i>	(P +) Ablative	(P +) Genitive	P + Dative

Note:

1. I show an optional P here, since German has *zu* 'to' that can alternate with a bare Dative:

Er gab seinem Bruder das Buch.

'He gave his brother a book.'

Er gab das Buch zu seinem Bruder.

'He gave the book to his brother.'⁷

There is no preposition in Latin or Russian that corresponds with this usage of *zu*.

2. A number of Latin [+LOC] prepositions take the Accusative only, whether they have a [+PATH] reading or a [-PATH] reading. Examples are: *apud* 'near', *infra* 'beneath', *post* 'after'.

⁷ *DATIVE* can also be realized in German by *an* and the Accusative:

(i) *Er gab das Buch an seinen Bruder.*

'He gave the book to his brother.'

(ii) *Er schrieb den Brief an seinen Bruder.*

'He wrote the letter to his brother.'

8.4.2.3 Russian oblique case complements

Returning now to the Russian reflexive verbs that Nichols (1983:171) describes as having a 'first object'. Recall that Nichols considers there to be **'no difference in syntactic relations'** (my emphasis) between the accusative complement of a verb such as *ljubit* 'to love', and the instrumental complement of *interesovat'sja* 'to be interested in', the dative complement of *udivljat'sja* 'to be surprised at' and the prepositional complement of *serdit'sja* 'to get angry with'. Let me put these verbs into a context and we can see what Nichols intends. I place the 'first object' of each sentence in square brackets.

- [42] a. *On ljubil* [*ženščinu*ACC].
 'He loved the woman.'
- b. *On udivil-sja* [*moemu povedeniju*DAT].
 he surprised self my behaviour
 'He was surprised at my behaviour.'
- b. *On serdil-sja* [*na moego brata*ACC].
 he angered self onto my brother
 'He was angry at my brother.'
- d. *On interesoval-sja* [*tennisom*INSTR].
 he interested-self tennis
 'He was interested in tennis.'

I must admit that I cannot see what is achieved by claiming that the NPs in square brackets are all first objects. It does nothing to explain why these first objects are in different cases, and is technically wrong in that the Russian reflexive clitic *-sja* is an Accusative anaphor, and therefore has prior claim to the title of 'first object'.

Let me now give my analysis of the constructions involving these reflexive verbs. Firstly, let it be noted that the three reflexive verbs cited by Nichols have non-reflexive counterparts. In [43] I give the constructions with the non-reflexive verbs. Note that I claim that [43a] and [43b] have a Ground subject and a Figure direct object, whereas [43c] has a Figure subject and a Ground direct object.

- [43] a. G V F
Moë povedenie_{NOM} udivil ego_{ACC}.
 'My behaviour surprised him.'
- b. G V F
Moj brat_{NOM} serdil ego_{ACC}.
 'My brother angered him.'
- c. F V G
Tennis_{NOM} intersoval ego_{ACC}.
 'Tennis interested him.'

I think that I should, before proceeding, defend my attribution of Figure and Ground status to the arguments in [43]. In other words, why do the first two sentences have Ground subjects, whereas the third sentence has a Figure subject? It might even be argued that the arguments in [43] are not in the Figure/Ground schema, at all, on the grounds that these sentences do not exemplify Talmy's Figure and Ground specification (see 3.2), in that there is no moving or conceptually movable object that we can call the Figure, and no real frame of reference that we can call the Ground.

In the realm of concrete objects it is usually clear enough which argument is the Figure and which the Ground. In the realm of abstractions, however, it may not be so clear. If a particular abstract notion is perceived to belong in the Figure/Ground schema, then the arguments involved have to be assigned their sta-

tus; the syntax imposes the requirement that the Figure and the Ground arguments be identified. If it is very unclear which argument is which, an arbitrary choice must be made⁸. It is sometimes the case that the argument that is given Figure status in one construction is given Ground status in another version of the construction. The verb *anger* is a case in point: Is the causer of the anger, or the person who experiences the anger, the Figure? English permits the verb *anger* and its derived form *be angry* to occur in [44a], where *Tom* is the Figure, and [44b], where *Tom* is the Ground.

- [44] a. F G
 Tom angers Sue.
 G F = *INSTRUMENTAL*
 Sue is angry [with Tom].
- b. G F
 Tom angers Sue.
 F G = *DATIVE*
 Sue is angry [at Tom].

In constructions with the verb *scare* and its derived form *be scared* the Figure can be only the person doing the scaring.

⁸ Working in a somewhat different framework, Brekke (1988) distinguishes between ' α -Experiencer predicates', where the subject NP is the Experiencer (e.g. *like, hate, fear, loathe*), and ' β -Experiencer predicates', where the Experiencer is the complement of the verb (*please, scare, disgust, anger*). As it stands, Brekke's distinction is *ad hoc*. Clearly, the advantage of the Figure/Ground schema is that (i) it relates the difference between the two types of verbs to a fundamental linguistic concept, (ii) it virtually predicts that there will be two groups of verbs, depending on whether the Figure or the Ground argument is realized as subject.

c. F G

Tom scares Sue.

G F = *GENITIVE*

Sue is scared [of Tom].

*Sue is scared {*with/*at} Tom.*

I now return to the Russian constructions in [43]. The reflexive counterparts to [43] are given in [45]. In the sentences with reflexive verbs both Figure and Ground are VP-internal. Whichever argument comes immediately after the verb gets Accusative case; the other argument gets F/G-related case, *DATIVE* for the Ground, *INSTRUMENTAL* for the Figure. Thus in [45a] and [45b] the Ground is *DATIVE*, realized by Dative in [45a], and P + Accusative in [45b]. In [45c] the Figure, required to be *INSTRUMENTAL* is realized by the Instrumental case.

[45] a. A V F G = *DATIVE*

On_i udivil -sja_i moemu povedeniju_{DAT}.

he surprised self my behaviour

'He was surprised at my behaviour.'

b. A V F G = *DATIVE*

On_i serdil -sja_i na moego brata_{ACC}.

he angered self onto my brother

'He was angry at my brother.'

c. A V G F = *INSTRUMENTAL*

On_i interesoval -sja_i tennisom_{INSTR}.

he interested-self tennis

'He was interested in tennis.'

8.5 Summary

In Latin *ABLATIVE* and *LOCATIVE* are both realized by the Ablative. The bare Ablative (= *ABLATIVE*) of early Latin came to be reinforced by the preposition *a, ab* 'from', and *e, ex* 'out of'. The bare Ablative (= *LOCATIVE*) came to be reinforced by prepositions such as *in* 'in, on', *sub* 'under'.

Russian has retained a discrete form for *INSTRUMENTAL* (= Instrumental). The feature [-L→] is realized in Russian by a bare Instrumental; there is no Russian preposition conveying the feature [-L→] corresponding to German *mit* and English *with*. *LOCATIVE* in Russian is always realized by a preposition taking an oblique case: *u* 'in', *na* 'on' take the Locative, *nad* 'above', *pered* 'in front of', *za* 'behind', *pod* 'under' take the Instrumental. *ABLATIVE* in Russian is realized by a preposition taking the Genitive case: *iz* 'out of', *ot* 'from', *s* 'from off'.

German has retained three bare oblique cases: *GENITIVE* (realized by Genitive), *DATIVE* (realized by Dative), *ABLATIVE* (realized by Dative). The two remaining features *INSTRUMENTAL* and *LOCATIVE* are obligatorily realized by prepositions taking the Dative case.

CHAPTER 9

CLASSIFYING THE $[\pm L]$ ENT-VERBS

9.1 Introduction

In Chapter 3 we saw that there is an alternation, repeated in [1], between a $[+L]$ *be*-prefixed verb taking a Ground direct object and a $[-L]$ simplex verb taking a Figure direct object. I claimed that this alternation can be accounted for if we suppose that the *be*- prefix is an allomorph of (in this case) the preposition *auf* 'on'. I further proposed that both the preposition and the *be*- prefix carry the location feature ($\rightarrow G$).

- [1] a. *Er $[-L]$ lud die Steine auf den Wagen.*
 'He loaded the stones onto the cart.'
- b. *Er $[+L]$ belud den Wagen mit Steinen.*
 'He loaded the cart with stones.'

In this chapter I show that the *ent*- prefix is, in a sense yet to be clarified, the inverse of the *be*- prefix, and carries, therefore, some form of the feature ($\leftarrow$). In contrast to the *be*- prefix, the *ent*- prefix is deficient in respect of its ability to host features, and, as a consequence, the *ent*- prefix occurs in three environments: on a $[+L]$ verb, on a $[-L]$ verb, and on a $[OL]$ verb¹. In this chapter I discuss the German $[\pm L]$ *ent*- verbs that represent the inverse of the simplex/*be*-verb system. I defer discussion of the $[OL]$ system of prefixes that includes $[OL]$ *ent*- until the next chapter.

¹ The $[OL]$ prefixes are treated in detail in the next two chapters. Briefly, I use the notation $[OL]$ for prefixes that, in contrast with the $[+L]$ and $[-L]$ prefixes, make no specification as to the type of argument they can take as direct object.

9.2 Two (of the three) types of *ent*-verbs

9.2.1 *Ent*-verbs may be [$\pm$ L]

The sentences in [2], with *entladen* 'unload', show the inverse of [1], which has the simplex/*be*-verb pattern for 'to load'.

- [2] a. *Er* [$-$ L]*entlad die Steine vom Wagen.*
 'He unloaded the stones from the cart.'
 b. *Er* [$+$ L]*entlad den Wagen von Steinen.*
 'He unloaded the cart of stones.'

Note the difference in [2], where both verbs have the *ent*- prefix. The problem is how to account for the fact that *ent*-, which is intuitively the inverse of *be*-, behaves differently from *be*-, in that *ent*- can take either a Figure or a Ground argument as direct object, whereas *be*- may take only a Ground direct object.

This is a seemingly unwelcome outcome, since I have shown that it is a function of the *be*-prefix, an allomorph of the location P *auf* 'on', attached to a simplex verb, to allow the Ground to be the direct object. In other words, in the context of 'movement of X to Y' German has a morphological means of encoding +LOCATION on the verb, whereas in the reverse context of 'movement of X away from Y' there is no morphological difference between the +LOCATION verb and the -LOCATION verb.

We can, however, resolve this problem by assuming that an *ent*-verb that takes the Ground as direct object is covertly marked as being +LOCATION. We can appeal to a general principle of German grammar that prohibits double prefixation.

9.2.2 The ban on double prefixation in German

This principle can be seen to operate in the formation of the past participle in German verbs. In the unmarked case the past participle of a German verb is formed by prefixing the verb stem with *ge*- and suffixing with either *-en* or *-t*, as in [3a]. If the

verb is already prefixed, this prefix blocks the addition of *ge-* on the past participle, as in [3b].

[3]

a.	<i>fragen</i>	'to ask'	<i>gefragt</i>	'asked'
	<i>trinken</i>	'to drink'	<i>getrunken</i>	'drunk'
b.	<i>benutzen</i>	'to use'	(* <i>ge</i>) <i>benutzt</i>	'used'
	<i>gestehen</i>	'to admit'	(* <i>ge</i>) <i>gestanden</i>	'admitted'
	<i>vergehen</i>	'to pass'	(* <i>ge</i>) <i>vergangen</i>	'passed'

We might now represent the relationship between the simplex verb, the *be*-verb and the two *ent*-verbs in the following matrix:

[4]

	-L	+L
+PATH, +GOAL	Ø	<i>be-</i>
+PATH, -GOAL	<i>ent-</i>	(* <i>be</i>) <i>ent-</i>

The matrix in [4] shows that *be-*, which is always associated with [+L], i.e. taking a Ground direct object, is blocked from appearing on a verb that is already prefixed. While [4] might seem plausible at first sight, there is, however, something wrong with it. The *be-* prefix is an allomorph of a location preposition; *be-* is, in fact, cognate with *bei* 'by'. This means that its essential 'ingredient' is the directional feature $\rightarrow$ rather than [+L] that specifies that the verb takes a Ground direct object. It makes no sense to try to put $\rightarrow$ onto a verb already marked $\leftarrow$.

Let us rather suppose that *be-* is an amalgam of (+L) and ($\rightarrow$), but that *ent-* hosts only the directional feature. If *ent-* is not specified for [$\pm$ L], then a *ent*-prefixed verb can take either Figure or Ground direct objects. I show this proposal in the following matrix. The prefix *be-* equates with the composite feature (+L, $\rightarrow$), whereas

the prefix *ent-* equates only with the feature ($\leftarrow$). The features (-L) and (+L), when associated with ($\leftarrow$) are zero morphemes.

[5]

F dir. obj.	G dir. obj.
(-L, $\rightarrow$)	(+L, $\rightarrow$)
($\emptyset$)	(<i>be-</i>)
(-L) ($\leftarrow$)	(+L) ($\leftarrow$)
($\emptyset$) (<i>ent</i>)	($\emptyset$) (<i>ent</i>)

The matrix in [5] has a consequence that I will fully address in Chapters 10 and 11. For the moment note that since *ent-* itself carries no value for [$\pm$ L], then there is nothing in principle to prevent *ent-* also occurring as a prefix on intransitive verbs.

9.3 The Five Classes of [$\pm$ L] *ent*-verbs

We are now in a position to analyse the syntax of the *ent*-verbs that have Figure/Ground arguments. We find that the same CLASS system operates that I proposed for the *be*-verbs in 3.3. It will be instructive to deal separately with each CLASS and show how the syntax of the *ent*-verbs relates to that of the *be*-verbs. I precede each group of sentences with the relevant part of TABLE I from CHAPTER 3. The Ground is shown in bold, the Figure is underlined. In the righthand column, under PP/oblique, I add the PIE underlying case, as proposed in 8.4.2.

CLASS I

CLASS I verbs have an Agent subject; the Figure and the Ground are VP-internal.

	SUBJECT	VERB	OBJECT	PP/oblique
CLASS I a	Agent	+L	Ground	<u>Figure</u> = GENITIVE
b	Agent	-L	<u>Figure</u>	Ground = ABLATIVE

The first example is the Locative Alternation.

- [6] a. *Er entlad **den Wagen**_{ACC} von Heu_{DAT}.*
 'He unloaded the cart of hay.'
- b. *Er entlad das Heu_{ACC} vom **Wagen**_{DAT}.*
 'He unloaded the hay from-the cart.'

In [a] *entladen* is a [+L] verb that takes the Ground as the direct object; the Figure is *GENITIVE*, the realization of (-L, ←-). In [b] the verb *entladen* is [-L] and takes the Figure as the direct object; the Ground is *ABLATIVE*, the realization of (+L, ←-).

While [6] is clearly an example of the Locative Alternation, other examples of the Locative Alternation with *ent-* are rare. One other such verb is *entfremden* 'alienate'. In [a] the verb is (+L) with a Ground direct object; in [b] the verb is (-L) with a Figure direct object:

- [7] a. *Er entfremdete **seinen Freund**_{ACC} seiner Frau_{GEN}*
 he *ent*-alienated his friend of his wife
 'He alienated his friend from his wife.'
- b. *Er entfremdete **seinem Freund**_{DAT} seine Frau_{ACC}*
 he alienated to his friend his wife
 'He alienated his friend from his wife.'

It seems to be the case that, while there is nothing in principle to prevent *ent*-verbs from alternating between [+L] and [-L], as shown in [6] and [7], the majority of German *ent*-verbs have just one value for [±L], either [+L] or [-L]. In [8] I give examples of both types. In each example the gloss refers to the unstarred version, which shows the Ground in bold, and the Figure underlined.

[8] a CLASS I (+L) ent-verbs

*Er enthob {**den Minister**_{ACC} seines Postens_{GEN}/*

**dem Minister_{DAT} seinen Posten_{ACC}}*

he *ent*-raised the minister of his post

'He relieved the minister of his post.'

*Er entledigte {**den Pfarrer**_{ACC} seines Amtes_{GEN}/*

**dem Pfarrer_{DAT} sein Amt_{ACC}}*

he *ent*-freed the parson of his office

'He divested the parson of his office.'

*Er entband {**die Frau**_{ACC} von einem Kind/*

**der Frau_{DAT} ein Kind_{ACC}}*

he *ent*-bound the woman of a child

'He delivered the woman of a child.'

*Er enthielt {**sich**_{ACC} des Alkohols_{GEN}/**sich_{DAT} den Alkohol_{ACC}}**

he *ent*-held self of the alcohol

'He {kept himself/refrained} from alcohol.'

b. CLASS I (-L) ent-verbs (Dative on the Ground = ABLATIVE, glossed as 'from')

*Er entrang {*den Feind_{ACC} seiner Waffe_{GEN}/*

dem Feind_{DAT} seine Waffe_{ACC}}

he *ent*-wrested (from) the enemy the weapon

'He wrested the weapon from the enemy.'

*Er entnahm {*das Buch_{ACC} eines guten Zitates_{GEN}/*
***dem Buch**_{DAT} ein gutes Zitat_{ACC}}*

he *ent*-took (from) the book a good quotation
'He took a good quotation from the book.'

*Er entzog {*meinen Freund_{ACC} der Erlaubnis_{GEN}/*
***meinem Freund**_{DAT} die Erlaubnis_{ACC}}*

he *ent*-drew (from) my friend the permission
'He withdrew permission from my friend.'

CLASS II

It seems that all the CLASS II *ent*-verbs are -L, i.e. when the Figure is the subject, the Ground is in a PP, either with an overt preposition or as a bare Dative. This means that a CLASS II *ent*-verb has the same syntax as its simplex, bearing in mind that a bare Dative (= *ABLATIVE*) is semantically equivalent to a PP headed by *von* 'from' or *aus* 'out of'.

	SUBJECT	VERB	OBJECT	PP/oblique
CLASS II a	<u>Figure</u>	+L	Ground	
b	<u>Figure</u>	-L		Ground = ABLATIVE

- [9] a. *Er entstammt **einer guten Familie**_{DAT}.*
he *ent*-stems (from) a good family
*Er stammt **von einer guten Familie**_{DAT}.*
he stems from a good family
'He comes from a good family.'

Other CLASS II -L verbs: *entellen* 'hurry away', *entstehen* 'arise', *entspringen*, 'arise',
entströmen 'pour out', *entfliehen* 'flee', *entgehen* 'avoid', *entfallen* 'drop, fall',
entgleiten 'slip', *entschlüpfen* 'escape', *entlaufen* 'run away',

CLASS III

CLASS III *ent*-verbs are necessarily -L, since the Ground is the subject. The only *ent*-prefixed verb that plausibly belongs here is *entbehren* 'to be lacking'. The Figure is realized as a bare Genitive.

	SUBJECT	VERB	OBJECT	PP/oblique
CLASS I a	Ground	-L	Figure	
b	Ground	-L		Figure = GENITIVE

- [10] *Das Auto entbehrte jedes Komforts* GEN.
the car *ent*-Xed of every comfort
'The car lacked every comfort.'²

I think it unlikely that the verb *enthalten* 'to contain' belongs in CLASS III.

- [11] *Die Flasche enthält einen Liter Wein.*
the bottle *ent*-holds a litre wine
'The bottle contains a litre of wine.'

² The verb *entbehren* differs from the other *ent*-verbs so far discussed in that the prefix means not 'out of, away from', but represents negation of the simplex verb to which it is affixed. Thus *entbehren* means 'not bear, not carry' (cf. (Drosdowski 1989:432). Further examples of *ent*- serving as negation are discussed in Chapters 10 and 11.

While we can argue that the bottle is clearly the Ground, the wine being the Figure, the verb *enthalten* is semantically a long way from being a 'removal' verb³.

CLASS IV

	SUBJECT	VERB	OBJECT	PP
CLASS IV	Agent	+L <u>Figure</u>	Ground	

Denominal CLASS IV *ent*-verbs that incorporate the Figure are well attested in German.

[12] a. *Der Mechaniker entölte die Maschine.*
the mechanic *ent*-oil-ed the engine
'The mechanic degreased the engine.'

b. *Der Wind entblätterte die Bäume.*
the wind *ent*-leaves-ed the trees
'The wind blew the leaves off the trees.'

CLASS IV denominal *ent*-verbs are probably the only productive *ent*-verbs in German. *Entwarzen* 'to de-bug' is a recent addition to the lexicon.

[13] *Der Techniker entwarzte den Computer.*
the technician *ent*-bugged the computer
'The technician de-bugged the computer.'

³ In this respect it is noteworthy that nominalizations associated with the meaning of *enthalten* 'to contain' do not employ the prefix *ent*-. *Behälter* 'container', *Inhalt* 'contents'.

Other CLASS IV +L verbs: *entwaffnen* 'disarm', *entgräten* 'fillet, bone', *entkräften* 'weaken', *entjungfern* 'deflower', *entehren* 'dishonour', *entwalden* 'deforest', *entwurzeln* 'uproot', *entrostet* 'de-rust', *entblättern* 'defoliate'.

CLASS V

	SUBJECT	VERB	OBJECT	PP
CLASS V	Agent	V+G	Figure	

I can find no *ent*-verbs which plausibly belong in CLASS V.⁴ Recall that the hypothesis which I outlined in Chapter 3 predicts that there should be no verbs which incorporate the Ground, for the following reasons:

- (i) The +L verb, but not the -L verb, may incorporate.
- (ii) The +L verb must have the Ground as direct object.
- (iii) The Ground cannot simultaneously be incorporated on the verb and be the verb's direct object.

In summary, we have seen that almost all the CLASS I *ent*-verbs are lexicalized as either +L or -L; there are extremely few that occur as +L and -L pairs, such as *entladen* and *entfremden*. CLASS II and CLASS III *ent*-verbs occur only as -L verbs. CLASS IV *ent*-verbs, which incorporate the Figure, are the only productive ones.

At this point, having shown that the Figure/Ground distinction enables us to establish the verb CLASSES, both for the *be*-verbs (Chapter 3), and now for the *ent*-verbs, I would briefly like to emphasize the superiority of the Figure/Ground distinction over other frameworks.

⁴ It may well be the case for English, too, that there are no (?) Ground-incorporating verbs of the type *unbottle*, *debottle*:

(i) ?He {unbottled/debottled} the wine.

Note that the division of the prefixed verbs into CLASSES is just a device for saying where the Figure and Ground arguments occur in a sentence. Thus in CLASS I, for instance, both arguments are in the VP; CLASS IV verbs incorporate the Figure argument, etc.

Putting this in a slightly different way, the verb CLASSES that the Figure/Ground distinction establishes dispenses entirely with the need for θ -roles, such as Agent, Patient, Theme, Experiencer, etc. The verb CLASSES also, of course, avoid the semantic difficulties associated with identifying whether an argument is, for instance, an Experiencer or a Patient. The subject of a CLASS I verb (that has Figure and Ground VP-internal) is necessarily an Agent (or Causer), as is the subject of a CLASS IV verb (with an incorporated Figure argument, and a Ground Direct object). In later chapters, purely for the sake clarity of exposition, I will continue to use the terms Agent and THEME.

9.4 Productivity of [$\pm$ L] *ent*-verbs

9.4.1 Productivity of CLASS IV *ent*-verbs

It seems that, in contrast to the *be*-system, the *ent*-system is much less productive, with the exception of CLASS IV (denominal) verbs. Why should this be? I have already pointed out that many of the *ent*-verbs, apart from those in CLASS II, are regarded as literary, archaic or formal. This, however, is a reflection of their lack of vitality, not a reason for their lack of vitality. I now offer three reasons for the productivity of CLASS IV and the fossilized state of the other *ent*-verbs.

The CLASS IV *ent*-verbs are productive in modern German. Recall that the CLASS IV *ent*-verbs incorporate the Figure argument. That Figure-incorporating *ent*-verbs are productive is not surprising when we realize that they represent the only way that German has of incorporating a noun onto a 'removal' verb. The only other way of expressing the meaning of [14a] is by periphrasis as in [14b,c].

- [14] a. *Er entkernte den Apfel.*
'He decored the apple.'
- b. *Er entfernte den Kern von dem Apfel.*
'He removed the core from the apple.'
- c. *Er {schnitt/nahm} den Kern {von/aus} dem Apfel.*
'He {cut/took} the core {from/out of} the apple.'

The ability of *ent-* to incorporate the noun Figure argument seems enough to guarantee its productivity.

9.4.2 Lack of productivity in CLASSES I, II, and III

In contrast with the productive CLASS IV *ent*-verbs, the *ent*-verbs in the other CLASSES are less productive. It must be said at this stage that the *ent*-system is not as productive for CLASS I verbs as the *be*-system, if one can talk about degrees of productivity. It is difficult to find examples where a simplex verb can take *be-* and also *+L ent-* and *-L ent-*. Even the alternations *laden*, *beladen*, *-Lentladen*, *+Lentladen* might be questioned by some native speakers who would prefer, instead of an *ent*-verb, a separable verb, *aus-laden*, or *ab-laden*, both meaning 'to unload'. It seems to be the case that the majority of CLASS I *ent*-verbs have become lexicalized as either *+L* or *-L*. Thus *-Lentnehmen* has no *+L* counterpart:

- [15] a. *Er -Lentnahm **dem Buch**_{DAT} ein Zitat_{ACC}*
'He took a quotation from the book.'
- b. **Er +Lentnahm **das Buch**_{ACC} eines Zitates_{GEN}*

There are a number of plausible reasons why CLASS I *ent*-verbs are less favoured in the modern language than their simplex/*be-* counterparts.

(i) Many *ent*-verbs survive only with a meaning that is a metaphor of the literal meaning of the simplex verb; the verb *entwerfen* 'to design' derives from *werfen* 'to throw'. In addition, many of these verbs have a distinctly formal, literary or archaic aura: *entrücken* 'to remove, transport, translate'.

(ii) [+L] and [-L] *ent*-verbs tend to take arguments as bare Datives and bare Genitives respectively, and thus may be perceived to be against the trend towards analytical constructions in the modern language.

(iii) The fact that +L *ent*- blocks additional prefixation means that a simplex verb prefixed by *ent*- is potentially ambiguous between being [+L] or [-L]. This ambiguity is, of course, resolved by the way the verb's arguments are realized; if a verb has a bare Dative argument, this is a clear indication that the verb is [+L], a bare Genitive is a clear indication that the verb is [-L]. However, once a *ent*-verb is assigned a value for L, this could be sufficient to block the appearance of a *ent*-verb with the other value of L.

(iv) It is noteworthy that in both English and German, the Locative Alternation seems to be more acceptable with 'supply' verbs rather than with 'removal' verbs. There seems to be no other explanation for the asymmetry of such verbs in English as *invest* and *divest*. *Invest* is both [+L] and [-L], whereas *divest* is only [+L].

[16] *The council invested the leader with full powers.*

The council invested full powers in the leader.

The council divested the leader of full powers.

**The council divested full powers from the leader.*

(v) The verbs in CLASSES I and II have the same syntax as simplex verbs, i.e. the Ground is expressed as a PP, either headed by an overt preposition or by Alternative Realization, as a bare Dative. The sentences in [a], which have *ent*-verbs, have a less literal reading, and are more likely to be found with abstract noun complements, than the corresponding sentences containing the simplex verbs in [b],

where the complements are generally more mundane. Apart from permitting a bare Dative, the *ent*-prefix is virtually redundant.

[17] a. *Er entfloh der Polizei*_{DAT}.

he *ent*-fled the police

'He escaped the police.'

*Er entkam der Gefahr*_{DAT}.

he *ent*-came the danger

'He {got away from/eluded} the danger'.

b. *Er floh von der Polizei*.

'He fled from the police.'

Er kam aus der Wohnung.

'He came out of the house.'

The potential redundancy of the prefix and the preference in Modern German for analytic forms over synthetic forms, i.e. the use of a simplex verb and overt preposition rather than a prefix, may be enough to reduce the productivity of the prefix. Note, too, that the *ent*- prefix is not just syntactically redundant, but also that it may be lexically redundant, in the sense that its lexical content 'away from' merely duplicates part of the lexical content of the simplex verb *fliehen* 'flee'.

(vi) The *ent*-system is in competition with another, much more productive, system. This other system is that of the particle verbs (the so-called separable verbs). Note that an alternative to *entladen* is the particle verb *ab+laden*.

[18] a. *Er entlud den Wagen*.

he *ent*-loaded the cart

- b. *Er lud den Wagen ab.*
 he loaded the cart off
 'He unloaded the cart.'

9.5 Summary

In this chapter I have shown that *ent*-verbs may be [+L] or [-L], the former taking a Ground direct object and corresponding to *be*-, the latter not taking a Ground direct object. I have shown that the same verb CLASSES can be established for the *ent*-verbs as I established for the *be*-verbs according to where the Figure and Ground arguments are realized. The Figure/Ground distinction and the verb CLASSES enable us to account for the way that arguments are realized without recourse to θ -roles.

I discussed the *ent*-verbs in terms of their productivity, and pointed out that *ent*-prefixed simplex verbs are much less productive than denominal *ent*-verbs. One reason probably has to do with the fact that *ent*-prefixed simplex verbs frequently take bare oblique case arguments, which may contribute to the feeling that these verbs have a literary, formal, and even archaic flavour. A second reason is that the *ent*-verbs are competing with a more vital system, that of the particles.

There is a subset of *ent*-prefixed verbs that I have not dealt with in this chapter. These are the [OL] *ent*-verbs. They will be the subject of the next chapter.

CHAPTER 10

THE [OL] PREFIXES AND THE HIDDEN GROUND

10.1 Introduction

We saw in Chapter 10 that [$\pm$ L] *ent*-verbs can take either the Figure or the Ground as direct object. In other words the *ent*-verbs that we have so far met are marked as [-L] or as [+L]. There are, however, some *ent*-verbs that behave somewhat differently. The following sentence illustrates the use of an *ent*-verb that has only one argument.

- [1] *Plötzlich entbrannte ein Kampf.*
 suddenly *ent*-burned a fight
 'Suddenly a fight flared up.'

Is [1] in the Figure/Ground schema? It seems not to be, since there is only one argument, and the verb does not allow a second argument. Figure and Ground Specification (3.2.3) requires there to be both a Figure and a Ground in the Figure/Ground schema; if there is a Figure, there must be a Ground, and vice versa. This is the essence of the Figure/Ground system as proposed by Talmy (1978). It would be awkward to be obliged to say that the construction with the *ent*-verb in [1] is not in the Figure/Ground schema. Surprisingly, perhaps, it turns out that the single argument sentence in [1] is fully consistent with the Figure/Ground hypothesis that I am pursuing. I have shown that [+L] *ent*-verbs take a Ground argument, and [-L] *ent*-verbs take a Figure argument. I will now claim that there are *ent*-verbs, as well as verbs prefixed by *ver*- and *er*-, that are unspecified for a value of [L]. I will call them [OL] verbs.

I will show that with these [OL] verbs there is a hidden, or implied Ground. In fact, the Ground is the Figure itself. This idea is not envisaged by Talmy (1978), but is, I think, a natural development of his original concept. In contrast to the *be*- and

[±L] *ent-* prefixes, where the Ground is an overt argument distinct from the Figure, and serves as a frame of reference against which the motion of the Figure is viewed, in the case of the [OL] prefixed verbs the frame of reference for the motion of the Figure is the Figure itself. Thus, the [OL] prefixed verbs are associated with change of state. I will show in this chapter how [OL] denominal verbs, representing change of state of the Figure, are formed (reserving deadjectival verbs for the next chapter).

I also discuss a development of the features (→) and (←) that provides the [OL] prefixes with certain additional semantic associations, such as 'pejorative', 'inchoative'.

Firstly I need to explain and account for the feature [OL].

10.2 The [OL] feature

Recall that, according to the feature matrix I presented in Chapter 10, here repeated in [2], the *ent-* prefix hosts only the feature (←), i.e. the [±L] feature is a zero morpheme.

[2]

F dir. obj.	G dir. obj.
(-L, →)	(+L, →)
(Ø)	(be-)
(-L) (←)	(+L) (←)
(Ø) (<i>ent</i>)	(Ø) (<i>ent</i>)

Thus, an *ent-*verb can, as we have seen, be either [+L] or [-L]. It is logical to suppose that the prefix on the verb *entbrannte* in [1] also carries the feature (←), but that it differs from the [+L] and [-L] prefixes in that its accompanying zero morpheme has a different value of [L]. Let us call this zero morpheme [OL].

Now, [+L] is the feature associated with the Ground, and a verb marked [+L] must take the Ground as direct object. Similarly, [-L] is associated with the Figure,

and a verb marked [-L] takes a Figure direct object. What then, does [OL] signify? Logically [OL] should mean that there is no specification as to the direct object, in other words a [OL] verb specifies nothing about its direct object. Now, we know from Figure and Ground Specification (3.2.2) that the direct object cannot be the Ground, since the Ground can be the direct object only of a [+L] verb. This means that [OL] permits the verb to take a Figure direct object, or no direct object. Thus, a [OL] verb can have a single argument, as in [1].

The question now is: how can there be a single argument in the Figure/Ground schema?

10.2.1 The hidden Ground

I propose that the single argument in [1] is a Figure. I will claim that, in a sense to be made explicit, the Figure in [1] comprises its own Ground.

The essence of the Figure/Ground schema is that it comprises the relationship of an object (the Figure) to another object (the Ground) that constitutes a frame of reference. Now, suppose that we have an object that moves. We know that it moves because it has changed its position with respect to the Ground; the object might move closer to, or away from the Ground. This has been the core of the Figure/Ground hypothesis that I have outlined so far, and which is manifested by the *be-* prefix and the [$\pm$ L] *ent*-verbs.

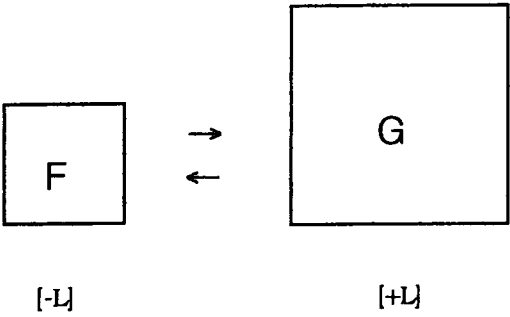
In the unmarked case the Figure and the Ground are realized as two distinct objects, and as two separate arguments. There are, however, cases when, through co-indexing, the Figure and the Ground refer to the same object.

- [3] a. *He retreated to a monastery.*
 b. *He₁ retreated into himself_i.*

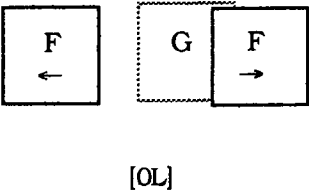
The potential for co-indexation of the Figure and Ground derives an important variation on the relationship between Figure and Ground. So far I have

viewed movement in terms of a Figure moving with respect to an external Ground. But we can also view an object that moves as having moved, not with respect to any external Ground, but rather as having moved from its original position. In this view the location of the Figure, before it moves, acts as the Ground or the frame of reference for the movement. The diagrams in [4] will summarize what I mean. Diagram [4a] shows a Figure, marked [-L], moving toward or away from a Ground, marked [+L]. This is the familiar Figure/Ground relationship that we find with *be*-verbs and their *ent*-antonyms. Diagram [4b] shows a Figure, marked [OL] moving from its original location, shown by dotted outline, in one of two directions, shown by the arrows. My proposal is that [4b] is a representation of the *ent*-verbs and other [OL] verbs that are the subject of this chapter.

[4] a.



b.



We can now see why the [OL] prefixes are marked thus; they have no value for [L], because they do not need to distinguish between a Figure and a Ground argument.

Another way of looking at [4] may help to make things clearer. Suppose that X is giving Y directions how to reach Z. X might say something like [5a], where each imperative refers to a Ground (*main road, chemist's, park*). Or X might employ deictic adverbials, as in [5b].

- [5] a. *Go to the main road, cross the road, go past the chemist's, go through the park, etc.*
- b. *Turn left, go forward twenty yards, turn right, take the third left, etc.*

In [5b] there is no Ground corresponding to the Grounds *main road, chemist's* in [5a]. The Ground in [5b] is where Y is standing at the point when he interprets what X is telling him to do. Thus, [5a] is an example of [4a], while [5b] is an example of [4b].

10.2.2 The [OL] features

The diagram in [4b] shows that movement of the Figure from its original location may be in one of two directions, shown by the arrows. I show in [6] how I consider these two directional features are to be interpreted, and the prefixes that I associate with them.

[6]

→	<i>ver-</i> , (<i>ge-</i>), (<i>be-</i>) 'forth, onwards'
←	<i>er-</i> , <i>ent-</i> 'out, back' ¹

The assignment of prefixes and English glosses to the features in [6] is based on German and English data rather than on theoretical considerations.

The prefixes in parentheses, *ge-* and *be-*, are no longer productive in the [OL] system, and the verbs that they form are remnants of the earlier system. (For *ge-* see Chapter 1, for [OL] *be-*verbs see 3.3.3.2.) Thus the main prefix to carry the feature (→) is *ver-* in modern German. The prefix *er-* is frequently an antonym of *ver-*.

The table in [7] shows how the two [OL] directional features fit into the scheme of prefixes. Note that there are two composite morphemes: under the first column, labelled [-L], is a zero morpheme representing (-L, →). This is the zero morpheme on a simplex verb, e.g. *laden* 'load', which takes a Figure direct object.

¹ As noted in footnote 1 in 8.2, *ent-* can convey the notion 'reversal of action, negation', as well as motion 'out, back, away'

Under the second column, labelled [+L] is the prefix *be-* that represents the composite feature (+L, →). Elsewhere in the table there are no composite morphemes; the prefixes represent only the directional feature, the [L] feature being represented as a zero morpheme.

[7]

±L		OL
(-L, →)	(+L, →)	→
Ø	<i>be-</i>	{ <i>ver-, ge-, be-</i> }
←	←	←
<i>ent-</i>	<i>ent-</i>	{ <i>ent-, er-</i> }

I give an example of each of the five [OL] prefixes.

- [8] a. *Der Baum besteht seit hundert Jahren.*
the tree *be-*stands since hundred years
'The tree has stood for a hundred years.'
(= stands on, continues to stand)
- b. *Er geleitete die Gruppe durch den Wald.*
he *ge-*led the group through the forest
'He escorted the group through the forest.'
(= led the group onwards)
- c. *Er verreihte auf ein paar Wochen.*
he *ver-*travelled on a few weeks
'He went away / abroad for a few weeks.'
(= journeyed forth)
- d. *Er entführte ein Mädchen.*
he *ent-*led a girl
'He seduced / kidnapped / eloped with a girl.'
(= led astray, away from where she had been)

- e. *Die Daten ergaben gute Resultate.*
 the data *er*-gave good results
 'The data produced good results.'
 (= gave out, gave forth)

Summarizing so far, I have shown that the [OL] prefixes *ent-*, *er-*, *ver-* are associated with a 'hidden' Ground that is the location or state of the Figure, with respect to which this Figure alters its location or state. I also introduced the features ($\rightarrow$) for *ge-*, *ver-*, *be-*, and ($\leftarrow$) for *ent-* and *er-*.

The realization of these features by means of the prefixes gives rise to some subtle semantic differentiation. In the next section I discuss a number of the main [OL] verb types.

10.3 *Ver-*, *er-*, and *ent-*verbs

10.3.1 *Ver-* and *er-* as antonyms

The prefixes *ver-* and *er-* are frequently antonyms. The modern German verb *kaufen* means 'to buy', as in *Er kaufte einen Ring* 'he bought a ring'. Originally it had the meaning 'trade, deal, do business'. This meaning can still be seen in *Kaufmann* 'trader, dealer, merchant', not, however, 'buyer'.² The prefixed verbs in [9] show clearly that on some verbs *ver-* and *er-* are antonyms with the features ($\rightarrow$) and ($\leftarrow$). Thus, selling is an activity in which something is traded forth, whereas buying is equivalent to trading in the opposite direction.

- [9] a. *Er verkaufte einen Ring.*
 he *ver*-traded a ring
 'He sold a ring.'

² The English cognate of *kaufen* can be seen in *Cheapside*, part of the town where goods were bought and sold.

- b. *Er erkaufte seine Freiheit.*

he er-traded his freedom

'He bought his freedom.'

- [10] a. *Er heiratete eine junge Frau.*

'He married a young woman.'

- b. *Er verheiratete seine Tochter mit einem jungen Mann.*

he ver-married his daughter with a young man

'He gave his daughter in marriage to a young man.'

- c. *Er erheiratete eine bedeutende Mitgift.*

he er-married a significant dowry

'His marriage brought him a significant dowry.'³

10.3.2 [OL] prefixes denote 'change of state'

So far I have said that the prefixes in the [OL] system denote movement of the Figure from its original position. I want to propose that there is a development of this idea, a more abstract notion of movement from an original position, where position is not so much spatial location, but rather a 'state'. In this view 'movement' of the Figure from its original 'state' equates with 'change of state', 'alteration'.

³ Ute Bohnacker (p.c.) informs me that modern usage allows *verheiraten* 'ver-marry', 'give in marriage' to be used in the sense of the simplex verb *heiraten* 'marry'.

- (i) *Er verheiratete sie.*

he ver-married her

'He married her.'/'He gave her in marriage.'

Similarly, the verb *verloben* 'get engaged' has acquired a second syntactic usage or meaning:

- (ii) *Er verlobte sie.*

he ver-Xed her

'He got engaged to her/betrothed her (to someone else).'

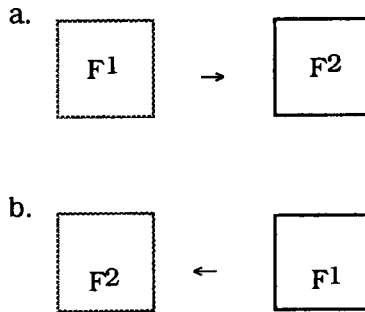
Er verlobte sich mit ihr.

he ver-Xed himself with her

'He got engaged to her.'

In the case of a number of verbs the (OL) *ent-* prefix conveys through its (←) feature the idea not of 'out', 'away from a location', but rather 'return to the previous state' or 'reversal, undoing of an action'. Thus, *ent-* frequently encodes the idea of 'negation of an action'⁴. This is illustrated schematically in [11], where [11a] shows advancement of the Figure (F²) from a previous state F¹ (Ground), and [11b] shows return of the Figure to its previous state.

[11]



This use of *ent-* corresponds to the English prefix *un-*. Compare the [a] sentences with the [b] sentences in [12] and [13].

[12] a. *Er entfaltete die Flagge.*

he *ent*-folded the flag

'He unfolded the flag.'⁵

b. *Er faltete die Flagge (zusammen).*

he folded the flag (together)

'He folded the flag (up).

⁴ Recall that in 8.2 I said that the feature (←G) could well be interpreted as (→-G), meaning 'to a place that is not the Ground' (= 'out of the Ground'). Similarly, the (OL) feature (←) can be interpreted as '(back) to a state that the Figure is not in at present'.

⁵ The verb *entfalten* is a good example of the ambiguity of the feature (←). *Entfalten* seems to contain both the notion of 'folding, opening out' and negation, or cancellation of the simplex verb. I return to this idea in Chapter 11.

- [13] a. *Er entrollte den Teppich.*
 he *ent*-rolled the carpet
 'He unrolled the carpet.'
- b. *Er rollte den Teppich zusammen.*
 he rolled the carpet together
 'He rolled the carpet up.'⁶

The *ent*-verbs in the [a] sentences denote a return to the previous state, or the undoing of the action that led to the present state.

10.3.3 [OL] verbs with an Agent or Causer argument

I showed in the templates in (7.4.4) that when the Figure and Ground are VP-internal the third argument (the subject) is necessarily an Agent or Causer; given that the Figure and the Ground arguments are already present in the sentence, there is no other function for the third argument than that of Agent or Causer. This, I think, sharpens Chomsky's original formulation of Agent Specification, as it accounts for when an argument **must** be the Agent:

[14] Agent Specification

'Thus one rule (probably universal) will stipulate that for verbs of action, the animate subject may be interpreted as the agent.'

(Chomsky 1972:75)⁷

What happens when the verb carries a [OL] prefix? Recall that I claim that, in

⁶ Some of the difficulties presented by German prefixes and particles can perhaps be appreciated when one considers that *aufrollen*, that should mean only 'roll up, wind up', can also mean its opposite.

- (i). *Er rollte das Kabel auf.*
 he rolled the cable on
 'He wound the cable up.'
 'He unwound the cable.'

⁷ As pointed out by Emonds (1991:400), Chomsky's Agent Specification does not rule out a Figure subject being the Agent.

accordance with Figure and Ground Specification, there is a Figure and a hidden Ground (representing a previous state) associated with [OL] verbs. Thus, since the Ground is 'hidden' the subject of a single argument [OL] verb must be the Figure. The corollary of this is that if a [OL] verb has two overt arguments, one must be the Figure, and the other must be an Agent (or Causer). Thus, once again we see that the notion Agent (or Causer) falls out naturally from the constraints of the hypothesis.

In the following sentences an *ent*-verb takes two arguments. In each case the *ent*-verb is zero-marked as being (OL) and takes the Figure as the direct object. The subject argument brings about the change of state implied by the verb.

[15] *Er entfaltete die Flagge.*

he *ent*-folded the flag

'He unfolded the flag.'

Die Rede entfachte einen Streit.

the speech *ent*-fanned an argument

'The speech stirred up an argument.'

Mein Trotz entflammte seinen Zorn.

my obstinacy *ent*-flamed his anger

'My obstinacy inflamed his anger.'

Der Krieg entzündete viel Haß.

the war *ent*-kindled much hatred

'The war incited much hatred'

Die Wunde entstellte sein Gesicht.

the wound *ent*-placed his face

'The wound disfigured his face.'

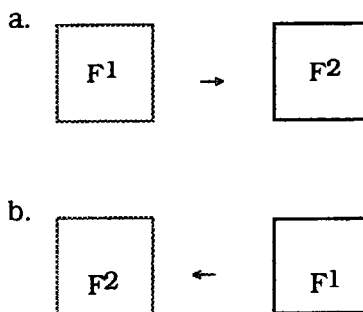
Note that the subjects of these sentences represent the Agent or Causer. This is a consequence of the fact that the subjects are 'third arguments' in sentences that have an overt Figure argument and a 'hidden' Ground. In each case the 'hidden' Ground is the prior state of the Figure obtaining before the event brought about by the Agent or Causer.

10.4 Denominal *ver*-verbs

In the last section I showed that 'change of state' can be viewed in terms of the Figure moving away from a previous location, and that this previous location acts to all intents and purposes as the Ground (the frame of reference against which we know that an object has moved). I discussed some examples of verbs that are formed by prefixation of a [OL] prefix to a simplex verb. The effect of prefixation is to add a directional notion to the resulting prefixed verb. So, from *führen* 'lead' we get *entführen* 'lead away, lead astray, abduct, hijack'. *Führen* can also take the *ver*- prefix: *verführen* 'lead on, tempt, seduce'.

In this section I want to show that the conception of 'change of state' applies not just to prefixed simplex verbs, but to denominal [OL] verbs as well. The first point to consider is how the abstract representation in [4b], repeated here as [16], is to be interpreted in the case of denominal verbs.

[16]



It would be fully in conformity with what I have so far proposed, if we were to take [16] to be the representation of what happens when an object (dotted outline) turns **into** another object. [16b] would then represent the case if an object turns **back** into

what it had been originally.

The verb in [17] is *vereisen* 'ver-ice, ice up', formed by prefixation of *ver-* and the noun *Eis* 'ice'. The sense of the sentence is that the streams and the windows have turned to ice.

- [17] *Die {Bäche/Fensterscheiben} sind vereist.*
 the streams/windows are ver-iced
 'The streams/windows have iced up.'

The abstract template for such a sentence is given in [18].

- [18] F¹ → F²
 (state¹) (state²)

In [19] I show how this template is to be interpreted. The Ground is represented by the state of the streams before they are iced up. The Figure is the state of the streams when they are iced up.

- [19] *Bäche*¹ → *Bäche*²
 (- *Eis*) (+ *Eis*)

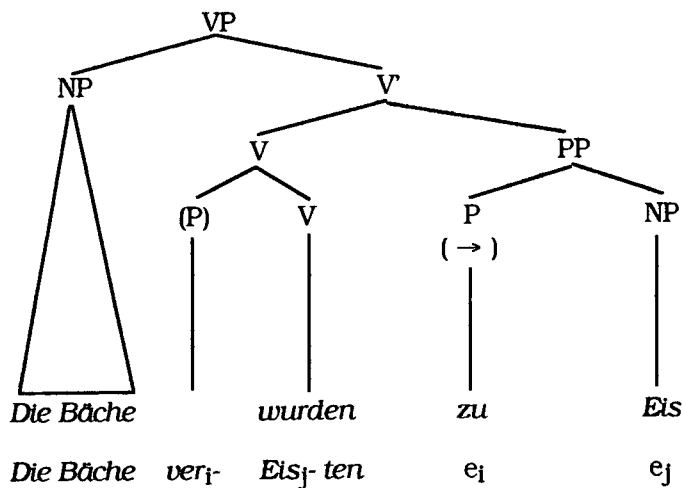
The addition to the template in [18] of a change of state verb such as *werden* 'become' derives the following sentence.

- [20] *Die Bäche wurden zu Eis.*
 the streams became to ice
 'The streams turned to ice.'

In order to derive the sentence with the denominal verb *vereisen*, the preposition *zu*

(representing the feature ($\rightarrow$) is realized by its allomorph, *ver-*, adjoined to a null verb. The noun *Eis* is then substituted into the null verb.

[21]



The same process gives rise to denominal *ver*-verbs which have Agent subjects. Note once again that the 'third argument' must be an Agent (or Causer), since it can be neither the Figure nor the Ground.

[22]

Er verfilmte {den neuen Roman/Anna Karenina}.
he *ver*-filmed the new novel/Anna K.
'He filmed the new novel/Anna K.'

The Ground in [22] is the novel, the Figure is the incorporated noun *Film*. The paraphrase of [22] is 'He turned the new novel/Anna Karenina into a film'. The template for [22] is:

[23]

Agent	V	F ¹	$\rightarrow$	F ²
		Anna K.		Anna K.
		(Roman)		(Film)

The template in [23] gives rise to the construction where [→] is realized as a P with the Ground as its complement.

- [24]

Er machte den neuen Roman zu einem Film.
he made the new novel to a film
'He turned the new novel into a film.'

If the constituent *zu einem Film* is foregrounded, adjunction of the feature → as the prefix *ver-* and substitution of the Figure² argument into the null verb slot gives the denominal *ver-*verb construction.

- [25]

Agent	V	[→	F ²]	F ¹
<i>Er</i>	<i>[ver₁- Film₁ -te]</i>	<i>e₁</i>	<i>e_j</i>	<i>den neuen Roman.</i>
he	<i>ver-filmed</i>			the new novel

'He filmed the new novel.'

Let me at this point emphasize the difference between the *ver-* denominal verbs that I have just discussed, and the *be-*verbs that I dealt with in Chapter 3 and Chapter 4.

We saw that in the case of the *be-*verbs the Figure argument moves towards the Ground argument (the [±L] *ent-*verbs describe movement of the Figure away from the Ground). In other words the [±L] prefixes are involved with the literal motion of one concrete object with respect to another concrete object.

I have shown that the [OL] prefixes are involved with the motion (literal or figurative) of an object with respect, not to an outside frame of reference, but to its own origin.

The distinction between these two sets of verbs can be summed up as follows: [±L] is involved with 'transfer' of the Figure with respect to the Ground; [OL] is involved with 'change of state' with respect to the Figure.

In some cases German denominal verbs relate to the Figure/Ground schema in a number of different ways. The verb *verzuckern* 'ver-sugar' is an example. [26] shows that this verb has three distinct meanings 'turn to sugar', 'add sugar, put sugar in', and 'sprinkle, cover, decorate with sugar'. These three meanings arise from three different structures.

- [26] a. $[\text{OL}]_{\text{ver-Zucker}_N} \text{ v} = \text{'go from not-N to N'}$
Der Honig ist verzuckert.
 the honey is ver-sugared
 'The honey has crystallized.' (= turned to sugar)
- b. $[\text{+L}]_{\text{ver-Zucker}_N} \text{ v} = \text{'transfer N to NP' (ver- equivalent to be-)}$
Er verzuckerte den Pudding mit Honig
 he ver-sugared the pudding with honey
 'He sweetened the pudding with honey.'
- c. $[\text{+L}]_{\text{ver-Zucker}_N} \text{ v} = \text{'cover NP with N'}$
Er verzuckerte den Pudding mit Honig
 he ver-sugared the pudding with honey
 'He poured honey over the pudding.'

The use of *verzuckern* in [26a] is a good example of an inchoative change of state. On the other hand *verzuckern* in [26b] is behaving like a CLASS IV *be*-verb, and has the meaning 'supply sweetening', in [26c] it is a *ver*-verb meaning 'cover with sweetener'. This third type of *ver*-verb is dealt with in the next section.

10.4.1 Verbs denoting 'cover'

There is a set of verbs such as *verchromen* 'chrome', *vergolden* 'gild, paint gold, gold plate', *verzinnen* 'tin', where the sense is 'apply a covering layer of some substance'.

- [27] *Er {verchromte/vergoldete/verzinnte} die Stange.*
 he *ver*-chromed / *ver*-gilded / *ver*-tinned the pole
 'He chromed / gilded, tinned the pole.'

At first sight these *ver*-verbs look as though they are behaving like CLASS IV (denominal) *be*-verbs, which have the basic meaning 'transfer N to NP, supply NP with N'. However, a comparison with *bewaffnen* 'be-weapon, arm' will show that the verbs in [27] do not share the syntax of *be*-verbs.

- [28] *Er bewaffnete seinen Freund.*
 he *be*-weaponed his friend
 'He armed his friend.'

The verb *bewaffnen* is clearly a 'transfer' or 'supply' verb; the weapon is being transferred to the friend, or the friend is being supplied with a weapon. There is no sense of supplying with chrome in *verchromen*. Instead, I claim that, although both *bewaffnen* and *verchromen* are denominal verbs, into which the head nouns have incorporated by substitution, they have substituted for different types of verb. I show this in schematic form in [29].

- [29] a. *be*- _____ (supply)v *Waffe* 'weapon'
 b. *ver*- _____ (cover)v *Chrom* 'chrome'

Let me illustrate what I mean by showing how the verb *decken* 'cover' has given rise to a quite complex series of derived forms. Firstly note how the simplex verb *decken* is used.

- [30] a. *Er deckte den Tisch.*
 he covered the table
 'He laid the table.'

- b. *Der Dachdecker deckte das Dach mit Schiefer.*
 the roofcoverer covered the roof with slate
 'The roofer roofed the roof with slate.'
- c. *Ein Krieger weiß sich zu decken.*
 a warrior knows self to cover
 'A warrior knows how to protect himself.'

I regard the instances of *decken* in [30] to be outside the Figure/Ground schema, and to have a Theme direct object. The activities described by the verb *decken* in [30] are all of a type; they are, plausibly, either common, daily activities, or activities associated with a person who characteristically performs them. The essential point to note is that there is no sense of motion towards table, roof, or self, nor is there any sense of change of state.

Compare [30] with the pair of sentences in [31] that are clearly in the Figure/Ground schema.

- [31] a. *Er deckte ein Tuch über den Tisch.*
 he covered a cloth over the table
 'He put a cloth over the table.'
- b. *Er bedeckte den Tisch mit einem Tuch.*
 he *be*-covered the table with a cloth
 'He covered the table with a cloth.'

The pair of sentences in [31] follow the pattern of the Locative Alternation of CLASS I verbs. Thus *be*-decken in [31b] is a prefixed form of the simplex verb *decken*. Both verbs convey the idea of 'supply', or 'transfer'. Both sentences have the meaning 'He placed a cloth over the table'.

There is, however, another possible analysis of [31b]. The verb *bedecken* could equally well be a denominal verb, formed by incorporation of the Figure argument *Decke* 'cloth, covering' into a null verb. In this case, *mit einem Tuch* would have the

status, not of (Figure) argument, but of adjunct.

[32] a. transfer of cloth to table

Er [be- [deck] -te] den Tisch mit einem Tuch.

Ground Figure

b. transfer of protective covering to table

Er [be- [Decke_i] -te] den Tisch e_i (mit einem Tuch).

Figure Ground (Figure) (adjunct)

In the case of the next example only one structure is possible, that in [32a], with a prefixed simplex verb.

[33] *Er hatte den Tisch mit allerlei Papieren bedeckt.*

he had the table with all-sorts papers *becovered*

'He had covered the table with all sorts of papers.'

The sense of [33] is not that the desk was being supplied with a covering, but that he had put so many papers on the desk that the papers covered the desk.

Now compare [32b] with [34], which contains a *uer*-verb.

[34] *Er verdeckte den Tisch mit einem Tuch.*

he *uer*-covered the table with a cloth

'He concealed the table with a cloth.'

If *be*- always implies transfer of the Figure to the Ground, as I am suggesting, what does *uer*- imply? In [34] I think the idea is concealment of the table by means of the cloth. The prefix *uer*- here has the feature ($\rightarrow$), which can be read as 'before', i.e. the cloth is placed between the viewer and the table, thus concealing the table.

3. Adjunction of (->) to verb in the form of ver-

*Er ver₁-deckte e₁ den Tisch Gold
 he ver- covered the table gold

There are now two ways in which 3 can be made grammatical:

4. Either: (i) Insertion of grammatical P to give case to Figure

Er ver₁-deckte e₁ den Tisch *(mit) Gold
 he ver- covered the table with gold
 'He covered/concealed the table with gold.'

Or: (ii) Substitution of the Figure N for the verb decken

*Er ver₁-Gold₁-ete e₁ den Tisch e_j
 he ver- gold- ed the table
 'He gilded the table.'

Summarizing, we have seen that the [OL] prefixes are able to describe a change of state, whereby a Figure becomes, or is caused to become a different version of the Figure. In the case of *Die Bäche sind veretst* 'The streams iced up', the state of being without ice (the old Figure = Ground) becomes the state of being with ice (the new Figure). A number of ver-verbs, both from simplex verbs as well as denominal ver-verbs, convey the idea of concealment. This is what differentiates *bedecken* 'be-cover, put on a (protective) cover' and *verdecken* 'ver-cover, conceal by covering, hide from view'. This group of 'concealment' ver-verbs also comprises numerous verbs formed by incorporation of a substance such as a metal. Thus, verbs like *vergolden* 'ver-gold, gild' and *verchromen* 'ver-chrome, chrome-plate' encode the idea of changing the Figure from being in a state without gold etc. to a state of being with gold, this layer of gold having the effect of concealing the original object.

10.5 Secondary features

So far the only directional features that I have introduced have been(→) and (←). As we have seen, these two features occur in the context of [±L] verbs as well as [OL] verbs. In this section I want to introduce two variants of (→) and (←). I will call the variants *secondary* features. I give the new secondary features in [38].

[38]

Primary OL		Secondary OL	
→	<i>ver-</i> , (<i>ge-</i>), (<i>be-</i>) 'forth, onwards'	↓	<i>ver-</i> 'down'
←	<i>ent-</i> , <i>er-</i> 'out, back'	↑	<i>er-</i> 'up'

I think that it most likely that the secondary features developed as an extension of the primary features.

Let me illustrate why I consider there to be secondary features at all. That there is an 'up' and a 'down' in addition to 'forth' and 'out of' can best be seen in examples of English particle verbs.

10.5.1 English particle verbs and the four [OL] features

Before looking further at the German prefixed verbs, I give some examples of particle verbs in English that support the idea that the particles encode up to four directional features. Consider the following:

- [39]
- *go on* 'continue', *set forth*, *talk away*, *call on*
 - ← *come out* (as gay), *rub out*, *run away*, *ooze out* , *catch out*
 - ↓ *fall down*, *tick off*, *run off*, *calm down*, *cool down*
 - ↑ *flare up*, *run up* (a dress), *ring up*, *own up*, *look up* (a word),
swell up, *cough up*, *warm up*, *dry up*

The verb *run* is particularly rich in the number of directional particles it can be used with:

- [40] → *The ceremony ran on beyond its allotted time.*
 ↑ *Mother ran up a new dress in no time.*
 ↓ *Father always runs my friends down.*
 ↓ *The secretary ran off more copies.*
 ← *The milk has run out.*
 ← *The cat ran away.*

There is no reason that a particular simplex verb will be compounded with all the directional possibilities. There are gaps for various semantic, lexical and pragmatic reasons. The simplex verb *catch* is limited to the following:

- [41] → *This fashion will not catch on.*
 ↑ *The bus caught us up.*
 ↓ **catch down*
 ↓ **catch off*
 ← *The teacher caught me out.*
 ← **catch away*

I am not claiming that such directional specifications as *on*, *out*, *down*, *up* are necessarily to be interpreted literally; but rather that the language makes available a number of similar, but subtly different options. In the following example there is precious little sense of literal directionality, i.e. the literal sense of the particle is submerged in the composite meaning of the verb/particle compound:

- [42] *It turns me off when it turns out that something turns up that I have to turn down.*

In the following example the prepositions, despite their very different literal

meanings, convey the same meaning in the context. All that they essentially mean is (→).

[43] Come {over, down, up} and see us sometime.

At this point I think it important to stress that we are dealing with a structure (whether a prefixed verb or a particle verb) in which the feature borne by the prefix or particle does not so much impose a meaning on the verb, but rather permits, within limitations, a range of possible meanings. Thus the meaning 'reject, decline' that *turn down* has, and the meaning 'occur, appear' that *turn up* has, are meanings (from a possibly wide range of meanings) that have become attached to these particle verbs.

Returning now to the German prefixed verbs, I give examples of an intransitive and a transitive verb for each prefix.

[44]	→	intr. <i>gedeihen</i> 'thrive', 'get on'
		trans. <i>gebären</i> 'give birth to', 'bring forth'
	←	intr./trans. <i>entflammen</i> 'flare up, inflame'
		trans. <i>entfalten</i> 'unfold'
	↓	intr. <i>verblühen</i> 'wither'
		trans. <i>verhüllen</i> 'cover up'
	↑	intr. <i>erblühen</i> 'bloom'
		trans. <i>erfinden</i> 'invent', 'come up with'

There is, I think, some way in which the meanings of some of these verbs correspond, however loosely, with the direction given. So, *gedeihen* means 'to go on', 'get on', *gebären* means 'bring forth', *erblühen* means 'bloom', which can be thought of as an upwards event, while its opposite, *verblühen* 'wither', is a downwards event.

Note in [45] that *ver-* and *er-* may also be antonyms with respect to the features (↓) and (↑), just as they are antonyms with respect to the primary

features..

- [45] a. *Die Pflanze verblühte.*
 the plant *ver*-bloomed
 'The plant withered.'
- b. *Die Pflanze erblühte.*
 the plant *er*-bloomed
 'The plant bloomed.'

These two verbs differ only in the choice of prefix. It seems clear that *ver*- conveys the idea of a downwards (bad) change of state to ruin, while *er*- conveys the notion of an upwards (good) change of state to fruition.⁸

10.5.2 Associated Meanings of the Four [OL] Prefixes

In the previous section I showed how the four [OL] prefixes under discussion are associated with one of four notionally directional features. It is also the case, I think, that each of the four prefixes have acquired, by dint of the literal meaning of their PATH reading, and the more abstract notion of 'change of state', some degree of associated semantic content.

⁸ Since we can find many instances where *ver*- and *er*- are antonyms, we might expect the distinction between them to be fairly robust, and we would not expect *ver*- and *er*- to alternate as synonyms. It comes as a surprise, then, that in Middle High German a common alternative to *vergessen* 'forget' was *ergessen*. The reason may well be that neither prefix was felt to contribute any meaning to these verbs, and as a result the verbs have become lexicalized. Modern German dialects also show variations in choice of prefix. Compare the Standard German in (i) with the Swabian dialect in (ii):

- (i) *Ich glaube, ich erlebe es nicht mehr.*
 I think I experience it not more
 'I don't think I'll see that again.'
- (ii) *I glaub, i (v)erleb's nemme.*

Similarly, Swabian accepts *verschrecken* alongside Standard German *erschrecken*. For variations between German and Dutch see Chapter 11.

10.5.2.1 Inchoative verbs

The prefixes *ent-*, *er-*, *ver-* are found on many verbs that traditional grammars describe as inchoative, and describe not just a change of state, but rather more a coming into being, or what we might call 'naissance'. We also talk of something arising out of something. It is as though the notion 'inchoative' has developed from the literal sense of direction, and has become attached to the prefix by association.

The inchoative association is particularly strong with denominal and, as I show in Chapter 12, deadjectival [OL] prefixed verbs. Recall from 11.4 that I analyse a denominal verb such as *verelsen* 'ver-ice, ice up' as meaning 'go from being not-N to N'. This change of state from not-N to N is, I think, at the heart of what we think of as inchoative. Thus, *ver-* is not primarily an inchoative feature; rather *ver-* comes to have inchoative connotations through its ability to derive change of state verbs. In [46] the directional feature carried by *er-* suggests that the plant is growing upwards, or out of itself.

- [46] *Die Pflanze erblühte zu voller Schönheit.*
 the plant *er*-bloomed to full beauty
 'The plant bloomed forth to its full beauty.'

In [47], on the other hand, there is hardly any hint of a directional feature that might be borne by the *er-* prefixes on the first two verbs⁹. On the other hand, it is very clear that these three *er*-verbs are inchoative.

- [47] *Als er das Gespenst erblickte, erschrak und erblasste er.*
 when he the ghost *er*-saw, *er*-frightened and *er*-paled he
 'When he caught sight of the ghost, he took fright and turned pale.'

⁹ I show in Chapter 11 that a deadjectival verb like *erblassen* 'turn pale' is a change of state verb derived by means of the feature (→) on the *er-* prefix.

In [47] the *er*-prefixed verbs have the inchoative sense of 'bring something into being'. Thus *erdichten* means 'write and bring forth a story'; *eröffnen* means 'perform the act of opening and bring into being an exhibition'¹⁰.

- [48] a. *Er dichtet.*
 he composes
 'He writes poetry.'
- a'. *Er erdichtete eine Geschichte über seine Herkunft.*
 he *er*-composed a story about his origins
 'He made up a story about his origins.'
- b. *Er öffnete die Tür.*
 'He opened the door.'
- b'. *Er eröffnete die Ausstellung.*
 he *er*-opened the exhibition
 'He opened the exhibition.'

If there is a directional feature on *er*- in these verbs, then it is (←) or (↑). We can see the same sort of thing happening in English.

- [49] *He thought for a while.*
He thought up an excuse.

¹⁰ Similarly, there is a group of *er*-verbs with the general sense of 'perform V and so acquire NP':

- (i) *Er erbettelte viel Geld.*
 he *er*-begged much money
 'He got a lot of money by begging.'
- (ii) *Er erkaufte seinen Erfolg mit seiner Gesundheit.*
 he *er*-bought his success with his health
 'He sacrificed his health for success.'

The particle *up* in [49] conveys the idea of 'bringing into being' and, therefore, gives the verb inchoative force.

10.5.2.2 The pejorative feature on *ver-*

It is plausible that, by association of ideas, the literal notions of 'upwards' and 'downwards' have acquired respectively the notions 'good' and 'bad'; in *rise and fall* 'rise' is 'good', 'fall' is 'bad'. This may be at the heart of what traditional grammars of German point out as being the so-called 'pejorative' connotations of the prefix *ver-* (Duden 1959:384, Hammer 1979:381), also mentioned by Lieber and Baayen (1993:57) and for Dutch *ver-* (de Haas and Trommelen 1993:72,76). Some typical examples are given in [50].

- [50] a. *verarschen* 'mess (someone) about', *verpfuschen*, *vermurksen*, *vermasseln* 'make a mess of', *verderben* 'spoil', *verbauen* 'jerry-build', *verhauen* 'botch (an exam)'
- b. *sich verfahren* 'get lost', *sich verfransen* 'lose one's way, get in a muddle', *sich vergreifen* 'play a wrong note', *sich verhaspeln* 'get in a muddle', *sich verhauen* 'hit the wrong key, play a wrong note'

It seems reasonable to propose that the verbs in [50] have a pejorative reading because the feature (↓), carried by *ver-*, has acquired the connotation 'bad'. This is the only plausible explanation for the lexical differentiation between the German verbs meaning 'drink' and 'eat' according to whether their subjects are human or animal.

- | | | | | |
|------|----|----------------|----------------|----------|
| [51] | a. | <i>trinken</i> | <i>essen</i> | [+human] |
| | | 'drink' | 'eat' | |
| | b. | <i>saufen</i> | <i>fressen</i> | [-human] |
| | | 'drink' | 'eat' | |

c.	<i>saufen</i>	<i>fressen</i>	[+human]
	'booze'	'guzzle'	

In the unmarked case *trinken* and *essen* are used with human subjects; *saufen* and *fressen* (a reduced form of *ver+essen*) are used with animal subjects. *Saufen* and *fressen*, probably because of their association with animal subjects, have acquired pejorative connotations when used with human subjects. Note how the addition of *ver-* to a neutral verb, *essen*, conveys the idea 'wolf down'.

It must also be said that the majority of *ver*-verbs have no perceivable pejorative associations. Some of them, such as *verschönern* even suggest the opposite of pejorative¹¹.

[52]	<i>verschönern</i>	<i>ver</i> -beautiful	'improve the appearance of'
	<i>veranschaulichen</i>	<i>ver</i> -visual	'visualise'
	<i>verfestigen</i>	<i>ver</i> -firm	'solidify'
	<i>verantworten</i>	<i>ver</i> -answer	'be responsible for'
	<i>versechsfachen</i>	<i>ver</i> -sixfold	'multiply by six'

Summarizing what I have said about the secondary [OL] features, I have shown that it is plausible to propose that from (→) and (←) there developed the secondary features (↑) and (↓) that convey the notions 'up' (associated with *er-*) and 'down' (associated with *ver-*) respectively. I showed how the system of English particle verbs exploits the wide range of PATH particles to convey lexical and subtle semantic differences. By association, some of the prefixes have acquired additional connotations; because of its association with 'down', *ver-* is able to convey a pejorative sense, while its antonym *er-* can frequently convey the idea of

¹¹ It is noteworthy that those writers (Hammer 1971, Neeleman and Schipper 1992, Lieber and Baayen 1993) who ascribe a (possible) pejorative meaning to *ver-* have no comment to make about this awkward fact.

improvement through its association with the sense of 'up'. Because the [OL] prefixes frequently denote a change of state, they are naturally associated with inchoative force.

10.6 Semantic overlap

What I have said so far about the [OL] prefixes might well have given the impression that the directional features and the prefixes that carry them are precisely distinguishable. I have just shown, for instance, that *ver-* and *er-* are frequently antonyms, and one can hardly be more precise than that. In fact, however, the [OL] system is not nearly as precise as I may have suggested. Let me show what I mean by comparing the forms of verbs that convey the idea of 'growth' in some way. A burgeoning plant might be thought to be growing upwards, and that's that. But it might also be thought to be growing 'out of itself', or growing 'forth', 'forwards on its way to maturity'. So we should be able to expect that any of the three features (↑), (←) and (→) might be appropriate. This is borne out to some extent.

[53]	<i>Die Pflanze gedeiht.</i>	→	
	'The plant thrives.'		
	<i>Die Pflanze besteht seit einer Woche.</i>	→	
	the plant <i>be-</i> stands since a week		
	'The plant is still growing after a week.'		
	<i>Die Pflanze erblüht.</i>	↑	←
	the plant <i>er-</i> blooms		
	'The plant blooms.'		
	<i>Dadurch erwuchs Mißtrauen.</i>	↑	
	there-through <i>er-</i> grew mistrust		
	'That caused mistrust'		

Eine neue Stadt entstand aus den Trümmern. ←

a new town *ent*-stood out of the ruins

'A new town arose from the ruins.'

Das Kind wuchs in Berlin auf. ↑

the child grew in Berlin up

'The child grew up in Berlin.'

The semantic similarities between the prefixes *be-*, *ge-*, *er-*, *ent-* and the particle *auf* in these sentences exemplify both the difficulty of pinning down these morphemes to one clear meaning, as well as illustrating the ability of a language to exploit a simple feature to create a wealth of subtly different shades of meaning.

10.7 Some parallels and differences between German and Russian prefixes

The Locative Alternation in Russian is usually associated with a change of prefix. The verb *risovat'* 'draw' is Imperfective; its Perfective counterpart is formed by means of prefixation of *na-*. *Risovat'* and *narisovat'* have the same argument structure, as can be seen in [54].

- [54] a. *On risoval kartiny*_{ACC} *na stenu*_{ACC}.
 he IMPERF.drew pictures on wall
 'He used to draw/was drawing pictures on the wall.'
- b. *On narisoval kartiny*_{ACC} *na stenu*_{ACC}.
 he PERF.drew pictures on wall
 'He drew pictures on the wall.'

A change of prefix usually brings about a change of semantics or argument structure. Thus, the verb *rasrisovat'* in [55] takes the Ground argument as direct object, and the direct object of [54] is now in the Instrumental case, the equivalent of

a PP headed by *mit* 'with' in German. [55a] is, then, the familiar Locative Alternation of [54b], and is the equivalent of the German *be-* construction in [55b].

- [55] a. *On razrisoval stenu.ACC kartinami.INSTR.*
 he PERF.drew wall pictures
 'He drew pictures all over the wall.'
- b. *Er bemalte die Wand mit Bildern.*
 he *be*-painted the wall with pictures
 'He painted pictures all over the wall.'¹²

It might appear that [55a] is an exact parallel with the German *be-* construction. However, there are two important differences between Russian and German prefixation that are worth pointing out for the record. These differences as I see them, are: (i) The Russian prefixes perfectivise; the German prefixes do not, (ii) the Russian prefixes do not relate in a systematic and predictable way with the location prepositions that take Ground complements; the German prefixes are allomorphs of location prepositions. The generalization is:

[56] Foregrounding of the Ground argument

- a. In Russian: the Ground argument is foregrounded by making it the complement of the verb, which has been perfectivized by the idiomatic addition of a prefix.
- b. In German: the Ground argument is foregrounded by incorporation of the location feature hosted by the head of the PP containing the Ground into the verb.

¹² I use *bemalen* to translate *razrisovat'* since *bezeichnen* (literally 'be-draw') has become lexicalised as meaning 'signify'.

The Russian examples marked (S&Z) in the next part of this section are taken from (Spencer and Zaretskaya 1998:18-20). The remaining examples and the German equivalents are mine. In the first two sets of examples the Russian prefixes *u-* 'away' and *za-* 'behind' parallel with German *be-*. The direct objects of the prefixed verb are the Ground.

- [57] a. *Ona u-vešala vse steny_{ACC} kartinami_{INSTR}.* (S&Z)

she U-hung all walls pictures

'She covered all the walls with pictures.'

- b. *Sie behängte all die Wände mit Bildern.*

she *be*-hung all the walls mit pictures

'She covered all the walls with pictures.'

- [58] a. *Ona za-sadila sad_{ACC} narcissami_{INSTR}.* (S&Z)

she ZA-planted garden daffodils

'She planted the whole garden with daffodils.'

- b. *Sie bepflanzte den Garten mit Osterglocken.*

she *be*-planted the garden with daffodils

'She planted the whole garden with daffodils.'

Apart from *u-* and *za-*, *ob-* also correlates with German *be-*. German has no lexical equivalent for Russian *obstirat* 'wash for' (**bewaschen*), but *bekochen* 'cook for' is structurally equivalent.

- [59] a. *Ona nas vse_x ob-stirala.* (S&Z)

she us all OB-laundered

'She did the laundry for all of us.'

- b. *Sie hat uns alle bekocht.*
 she has us all *be*-cooked
 'She cooked for us all.'

Note that the prefixes *u* 'away' and *za* 'behind' and *ob-* 'round' have no semantic connection with the location prepositions in [60]:

- [60] a. *Ona po-vesila kartiny **na** stenu.*
 she PERF.hung pictures on wall
 'She hung the pictures on the wall.'
- b. *Ona po-sadila narcissy **v** sad.*
 she PERF.planted daffodils in the garden
 'She planted daffodils in the garden.'
- c. *Ona sterala **dlja** nas vsex.*
 'She laundered for us all.'

That the purpose of the Russian prefixes in these examples is to perfectivise, rather than to convey directly the location feature of the preposition, can clearly be seen in the next example.

- [61] *Vorony ob-seli berězu_{ACC}.* (S&Z)
 crows OB-sat birch-tree
 'The crows covered the birch-tree (sitting on it).'

It is clear that the crows were sitting *in* or *on* the tree, although Russian *ob-* conveys no sense of 'in' or 'on'. Compare the German alternation in [62], where the preposition *in* is regularly alternatively realized by *be-*.

- [62] a. *Die Krähen saßen in der Birke.*
 the crows sat in the birch-tree
 'The crows were sitting in the birch-tree.'
- b. *?Die Krähen besaßen die Birke.*
 the crows *be*-sat the birch-tree
 'The crows occupied the birch-tree.'¹³

The sense of [61] is that the crows were sitting on all parts of the birch-tree, i.e. they had occupied the tree and taken it over. The sense that the crows had taken over the tree comes about through the PERFECTIVE aspect of the verb *obsest'*, conveyed by the prefix *ob-*, rather than through the alternative realization of a location preposition as a related prefix.

In the next examples the Russian prefixes *ob-* 'round', *iz-* 'out', and *pro-* 'past, through' occur in contexts where German frequently has *ver-*. Spencer and Zaretskaya observe that there are groups of verbs in Russian that take 'unselected objects' (Spencer and Zaretskaya 1998:18) and convey the idea of 'damage' [63], or 'exhaustion' [64-66]¹⁴. Similarly in German, *ver-* may have pejorative connotations, and may also convey the notion 'exhaust, use up'.

- [63] a. *Kot ob-gadil ves' kover.* (S&Z)
 cat OB-soiled all carpet
 'The cat has crapped all over the carpet.'

¹³ This German example may be a bit forced. *Bestitzen* ('*be*-sit') means 'own, possess'; related to it is *besetzen* ('*be*-set') meaning 'occupy'. The idea is that sitting *in* a chair is equivalent to occupying, possessing the chair.

¹⁴ By 'unselected object' Spencer and Zaretskaya mean that *gorjučee* 'fuel' in [63], for instance, is not an argument of the verb *letat* 'fly', but becomes the direct object of *izletat* by virtue of the prefix.

- b. *Die Katze hat den Teppich verschmutzt.*
the cat has the carpet *ver*-dirtied the carpet
'The cat has crapped all over the carpet.'

- [64] a. *My iz-letali vse gorjučee.* (S&Z)

we IZ-flew all fuel
'We ran out of fuel (in a plane).'

- b. *Wir haben zehn Liter Benzin verfahren.*
we have ten litres petrol *ver*-driven
'We have used up ten litres of petrol.'

- [65] a. *My pro-ezdili \$1000.* (S&Z)

we PRO-travelled \$1000
'We got through \$1000 (travelling).'

- b. *Wir haben \$1000 verfahren.*
we have \$1000 *ver*-driven
'We got through \$1000 (travelling).'

- [66] a. *On pro-pil vsyu svoju zarplatu.* (S&Z)

he PRO-drunk all his wages
'He drank his way through all his wages.'

- b. *Er hat sein ganzes Einkommen vertrunken.*
he has his whole income *ver*-drunk
'He drank his way through his income.'

Prefixation and aspectival usage in Russian is a complex issue that is outside the scope of this study. The examples I have given will serve to illustrate some of the similarities and differences between Russian and German prefixation, and highlight a possibly fruitful area for future research.

10.8 Inconsistency in the use of the prefixes

It would be wrong to give the impression that in German there is always an exact and precise correlation between features, prefixes, and meaning. That is not the case; it will become clear that these prefixes do not always behave in a consistent manner. The most likely reason is probably that the features (the arrows in the matrix) that the prefixes are supposed to represent are no more than subtle variations on the notion [PATH].

Note that *rauben* 'rob' behaves like a [-L] *ent*-verb such as *entringen* 'wrest', in that it takes an Accusative direct object and the Ground is in the Dative (=ABLATIVE).

- [67] a. *Er raubte mir_{DAT} einen Ring_{ACC}.*
 he robbed to-me a ring
 'He robbed me of a ring'
- b. *Er entrang mir_{DAT} meine Pistole_{ACC}.*
 he *ent*-wrestled to-me my pistol
 'He wrested my pistol off me.'

When the Ground is the direct object, *rauben* takes the *be*- prefix, but behaves syntactically like a [+L] *ent*-verb such as *entkleiden* 'divest' or *entheben* 'relieve'.

- [68] a. *Er beraubte mich_{ACC} eines Ringes_{GEN}.*
 he *be*-robbed me of a ring
 'He robbed me of a ring.'
- b. *Er entkleidete mich_{ACC} meines Amtes_{GEN}.*
 he *ent*-clothed me of my office
 'He divested me of my office.'
- Er enthob mich_{ACC} meiner Pflichten_{GEN}.*
 he *ent*-raised me of my duties
 'He relieved me of my duties.'

Compare the syntax in [68a] with that of a 'normal' *be*-verb such as *bedienen*, which requires the Figure to be in the PP *mit* + Dative (= *INSTRUMENTAL*).

- [69] *Er bediente mich*_{ACC} *mit dem Hauptgericht*_{DAT}.
 he *be*-served me with the main course
 'He served me with the main course.'

It seems that the features in the Figure/Ground schema are not sufficiently strongly differentiated to prevent a verb such as *berauben* 'berob' and its companion *bestehlen* 'be-steal' having the clausal syntax, and the meaning of 'deprivation', of a [-L] *ert*-verb.

At the end of this section I am aware that I have discussed only a small number of the [OL] verb types in German. It is likely that many verbs have subtly changed their meaning in the course of time, and their original meaning having been lost, we can only guess at the processes that brought the verb into being in the first instance. One such verb might be *versprechen* 'promise'. We might suppose that the prefix conveys the sense of one of the features ($\rightarrow$) ($\uparrow$) ($\leftarrow$), i.e. the meaning of *versprechen* might be 'speak forth, speak up, speak out'. In the context of people being asked to volunteer their services, people who 'speak out' are thereby pledging themselves. Thus, *versprechen* becomes interpreted as a performative verb with the meaning 'promise'.

10.9 Summary

This chapter introduced a crucial development of the Figure/Ground concept, namely the 'hidden' Ground. In contrast to the situation in which a Ground argument provides the framework of reference for a Figure argument, the 'hidden' Ground is the location or state of the Figure argument itself prior to some change of location or state.

The concept of the hidden Ground enables us to account for a range of verbs

prefixed by *er-* and *ver-*, both formed by prefixation to a simplex verb and prefixed denominal verbs. I showed how the features realized by the prefixes are able to convey concepts such as 'concealment', pejorative connotations, inchoativity. We can now see that the Figure/Ground schema and the mechanism of feature realization unify what hitherto have been regarded as disparate phenomena: the behaviour of denominal verbs and prefixed simplex verbs formed by [HL] *be-* and *ent-* prefixation, and [OL] *ent-*, *ver-*, *er-*, *ge-*, *be-* prefixation.

There is a group of *ver-* and *er-* verbs that I have yet to discuss. They are the deadjectival [OL] verbs. Verbs that derive from adjectives, such as English *harden*, *embolden*, and their German equivalents *verhärten*, *ermutigen* have been thought by a number of writers to be problematic with respect to such matters as headedness, transitivity *versus* intransitivity, whether there is an Agent subject, etc.

I would consider it a serious defect of the Figure/Ground schema, the templates, and directional features, if the *ver-* and *er-* deadjectival verbs could not be accounted for within the system, and by the same means that have been employed to account for the other uses of the [OL] prefixes. It will be seen, however, that the system that I have so far presented is fully capable of generating deadjectival verbs. Moreover, it does so in a rather surprising way. The key to the deadjectival verbs that has eluded so many other writers that have tackled these verbs is implicit in the system that I have outlined. When a phenomenon is viewed from the correct perspective, the problems that were thought to exist simply disappear. The *ver-* and *er-* deadjectival verbs are the subject of the next chapter.

CHAPTER 11

DEADJECTIVAL PREFIXED VERBS

11.1 Introduction

A number of writers have observed that *ver-* and *er-* are frequently found prefixed to deadjectival verbs. I want in the first part of this chapter to outline my proposal concerning the mechanics of deriving prefixed verbs from adjectives. It will be seen that the derivation of such verbs falls out naturally from what I have so far said with respect to (OL) verbs. In the second part of the chapter I will discuss the approach to deadjectival verbs of a number of other recent works, notably Neeleman and Schipper (1992), Lieber and Baayen (1993).

Let me start by recapitulating what we have seen so far in the system of [L] features in the Figure/Ground schema.

(i) We have seen that a head noun, the Figure, can incorporate by substitution into the verb.

(ii) We have seen that the directional features that I have represented by arrows can appear (a) as a prefix on the verb, as a preposition, as a particle, and (b) as oblique case morphology on a noun argument.

11.2 Adjectives in the Figure/Ground schema

Firstly, I need to show that adjectives properly belong in the Figure/Ground schema. Consider the following sentences that contain an adjective.

- [1] a. *Tom is tall.*
 b. *Tom is taller today.*
 c. *Tom is taller than Sue.*

If we can say that Tom is tall, then there must be a frame of reference against which Tom's height can be judged. In this case Tom's height is deemed to be great with re-

spect to the average height for boys of his age. Similarly in the comparative degree one state (Tom's height) is being judged against another state (Tom's height before today, and Tom's height in comparison with that of Sue). What we have here is another manifestation of the Figure/Ground schema, this time with adjectives. The Figure will be the state that is being judged against some frame of reference (the Ground).

There may be multiple Figure/Ground relations, whereby the state of the relationship between a Figure and Ground is compared to the state of the relationship between the same Figure and Ground at a different time, or to a different Figure and Ground. In other words the state of the relationship between a Figure and a Ground may itself be a Figure or a Ground. The paraphrases to the sentences below will clarify the matter. The subscripts refer to Figure and Ground.

- [2] a. *Tom is faithful to Sue.*
 [[Tom's faithfulness_F] to [Sue_G]] is complete
- b. *Tom is more faithful to Sue than he used to be.*
 [[Tom's faithfulness now_F] to [Sue_G]_F] is greater than
 [[Tom's faithfulness before_F] to [Sue_G]_G]

While in [2a] there is a simple Figure/Ground relationship, [2b] shows that a Figure/Ground relationship that obtains at one point in time can be compared with the same Figure/Ground relationship obtaining at another time. In this case the former is itself the Figure and the latter the Ground.

In the next two examples one Figure/Ground relationship (acting as Figure) is compared with a different Figure/Ground relationship (acting as Ground).

- c. *Tom is more faithful to Sue, than to Pam.*
 [[Tom's faithfulness_F] to [Sue_G]_F] is greater than
 [[Tom's faithfulness_F] to [Pam_G]_G]

- d. *Tom is more faithful to Sue, than Sue is to Ben.*
 [[Tom's faithfulness _F] to [Sue_G]_F] is greater than
 [[Sue's faithfulness _F] to [Ben_G]_G]

11.3 The P in change of state predicates

I will claim that there is in change of state predicates an overt or null P that takes an NP or AP complement. Emonds (1985: ch 6) proposes that since the categories V and P parallel each other in that both categories contain transitive and intransitive elements, and since there are copular V's, we should expect to find copular P's. For English he identifies *as* as the P associated with the copular V *be*, and *into* as the P associated with *become*. The examples in [3] will illustrate the idea.

- [3] a. *He came to the party **as** a monkey.*
 b. *He turned **into** an ogre.*

Emonds (1985: 264)

'As a monkey' conveys the notion that 'he *was* a monkey' (in a certain sense), while 'into an ogre' clearly conveys the idea of '*becoming* an ogre'. Emonds argues at length and compellingly that 'non-comparative *as*' (his term) is to be unified with the category P. The reader is referred to Chapter 6.

I showed in Chapter 11 that an NP in German change of state predicates can be in a PP headed by *zu* 'to'.

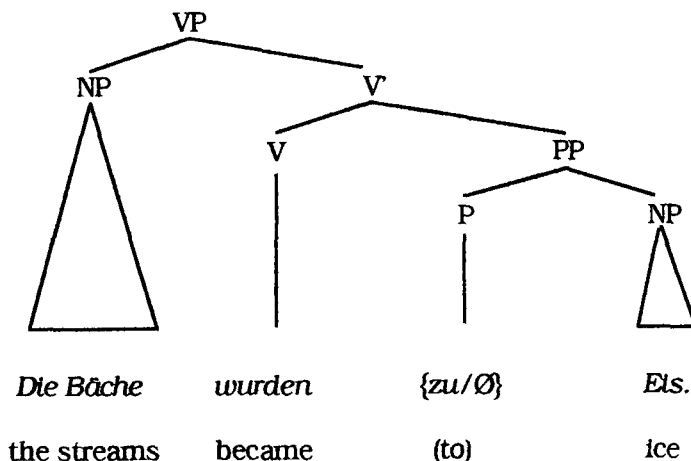
- [4] *Die Bäche wurden (zu) Eis.*
 the streams became to ice
 'The streams turned to ice.'

In German, but not English, change of state constructions involving NPs an optional P is found with *werden* 'become', and *machen* 'make'.

- [5] a. *Alles wird wieder (zu) Staub.*
 all becomes again to dust
 'Everything becomes (*to) dust again. (= Everything returns to dust.)
- b. *Er machte seinen Kollegen {zu seinem/seinen} Stellvertreter.*
 he made his colleague to his representative
 'He made his colleague (*to) his representative.'

The tree structure that I propose for [4] is as follows:

[6]



With verbs other than *become* and *make* English, too, has an overt P.

- [7] *Er verarbeitet Leder zu Handtaschen.*
 he ver-works leather to handbags
 'He works leather into handbags.'
- Er zermahlte den Tabak zu Pulver.*
 'He ground the tobacco to powder.'

Er beförderte seinen Kollegen zum Major.

he promoted his colleague to-the major

11.3.1 Change of state P as a case morpheme on NPs

Further evidence that a language may have a P in change of state predicates is provided by languages in which the complement of copular verbs is in a bare oblique case. In Russian the Instrumental case is associated with copular constructions. I take the Instrumental case ending on nouns and adjectives in Russian to be an Alternative realization of the change of state P¹.

- [8] a. *On rožděn artistom_{INSTR}.*
 he born artist
 'He was born to be an artist/he is a born artist.'
- b. *On stal čēm_{INSTR-to}.*
 he became something
 'He became something.' (= He amounted to something.)
- c. *Narod vybral ego korolem_{INSTR}.*
 people chose him king
 'The people chose him as king.'

Note that the examples with an Instrumental NP in [8] parallel the German construction with *zu*.

¹ Recall that in 8.3.2 I claimed that bare Dative and bare Genitive case marking on NPs is the Alternative Realization of a location feature that may otherwise be hosted by a preposition (or by a prefix on the verb).

- [9] a. *Er ist zum Künstler geboren.*
 he is to-the artist born
 'He was born to be an artist/he is a born artist.'
- b. *Er wurde (zu) etwas.*
 he became (to) something
 'He became something.' (= He amounted to something.)
- c. *Das Volk (er)wählte ihn zum König.*
 the people chose him to-the king
 'The people chose him as king.'

11.3.2 Change of state P with adjectives

I showed at the beginning of this chapter that not only nouns but adjectives, too, can feature in the Figure/Ground schema. Since the Ground NP is canonically in a PP headed by a location preposition, we would expect this to be the case for adjectives too. The two examples given below are structurally identical except for the fact that the Ps in [a] have noun complements, whereas the Ps in [b] have adjective complements.

- [10] a. *He went from pauper to millionaire.*
 b. *The situation went from bad to worse.*

I now give further evidence that adjectives in change of state predicates are typically complements of P.

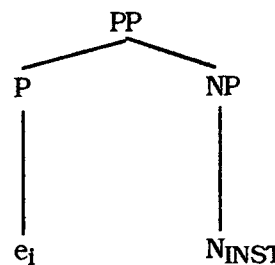
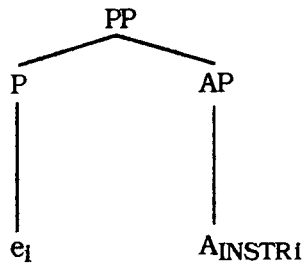
Russian predicative adjectives differ from German predicative adjectives in a significant respect; the former but not the latter exhibit case morphology (and ϕ -features). I interpret this fact as evidence that Russian has a change of state P for ad-

jectival constructions that must be realized (as Instrumental on the sister of P), whereas German does not.

- [11] a. *On stal bogatym*_{INSTR.masc.Sg.} *Ona stala bogatoj*_{INSTR.fem.Sg.}
 b. *Er wurde reich.* *Sie wurde reich.*
 'He became rich.' 'She became rich.'

In the Russian construction [11a] the adjective agrees with the pronoun subject in gender and number, as well as exhibiting Instrumental case. In the German example [11b] the adjective *reich* shows no case, number, or gender morphology.

Now, the use of the Instrumental in [11a] parallels the use of the Instrumental in change of state constructions with NPs. This suggests that Russian change of state constructions involve a P in both noun and adjective environments. German, on the other hand, allows an overt change of state P only in noun environments.

- [12] a.  b. 
- | | | | | | | |
|--|----------|-----------|--------------|--|-------|--------------|
| | Russian: | e_i | N_{INSTRi} | | e_i | A_{INSTRi} |
| | German: | <i>zu</i> | N | | Ø | A |

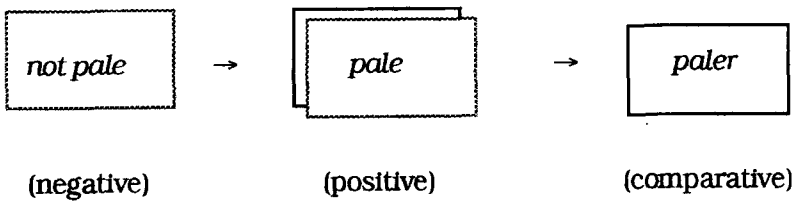
Having established that there is a null P in change of state constructions involving APs in German, I want now to consider (i) what this P represents, and (ii) how this P can be realized.

11.3.3 The meaning of change of state P

I showed in 10.4 that *zu* in change of state predicates involving NPs is a realization of the [OL] feature ($\rightarrow$). It is natural to assume that the P in [1b], realized in Russian by Instrumental, and in German by a null P, is the same feature, ($\rightarrow$). The meaning of ($\rightarrow$) is '(from one state) to (another state)'.

Since adjectives describe states, and deadjectival verbs describe changes of state, let us see how we can envisage such changes of state. The diagram illustrates what I have in mind. A change of state can be viewed as a change from negative to positive, or from a particular state to a higher degree of that state, in other words something can become pale, or if pale to start with, it can become more pale.

[13]



The example in [14a] is an example of a change of state from 'not-A to A', and [14b] is an example of a change of state 'from A to more-A'.

- [14] a. *Als er das Gespenst erblickte, wurde er blaß.*
 when he the ghost *er*-saw, became he pale
 'When he saw the ghost, he became pale.'
- b. *Der Teppich wurde im Laufe der Jahre blasser.*
 the carpet *became* in the course of the years paler
 'The carpet faded in the course of the years.'

The example in [14a] suggests a sudden change of state, from being **not pale** to becoming pale. The sense of [14b], on the other hand, is that the carpet gradually over the years lost its colour, i.e. it became **more colourless** as time passed.

11.4 Realization of change of state P as a prefix

11.4.1 Change of state P and positive degree adjectives

Just as I showed in Chapter 10 that the feature (→) on a P with a NP complement may be realized by a [OL] prefix, I will now show that P with an AP complement may also be realized by a [OL] prefix, i.e. in German deadjectival verbs prefixed by *uer-* or *er-*, the prefix is a realization of the feature (→). The copular sentences in [14] are synonymous with their respective sentences containing deadjectival verbs in [15].

- [15]

a.

Als er das Gespenst erblickte, erblaßte er.

when he the ghost *er*-saw, *er*-paled he

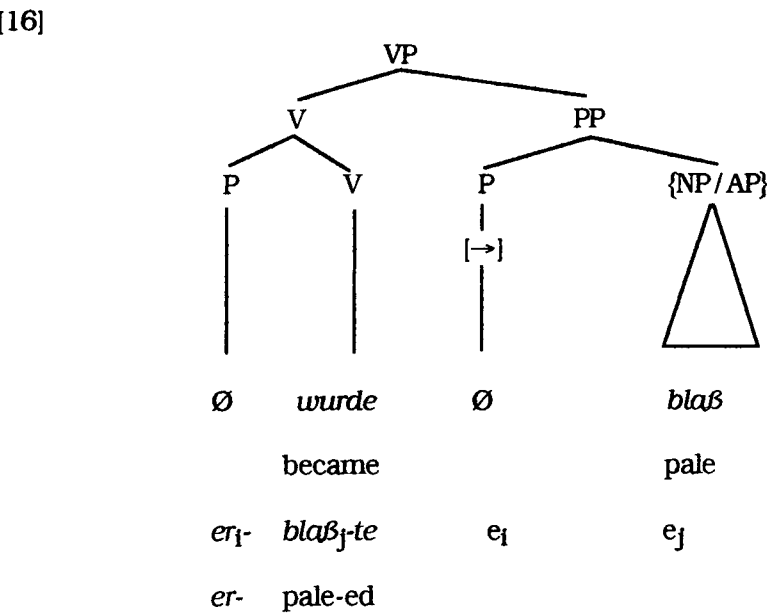
'When he saw the ghost, he blanched.'
- b.

Der Teppich verblaßte im Laufe der Jahre.

the carpet *uer*-paled in the course off the years

'The carpet faded in the course of the years.'

The relevant structure of [14a] and [15a] is given in [16].



What [16] claims is firstly that *er-* is an allomorph of the feature ($\rightarrow$), which is hosted by a P sister to the AP, but which is not realized overtly in its canonical position. Secondly, [16] claims that the adjective *blaß* has incorporated into the verb by substituting for the verb itself. The structure in [16] is that of a *er-* deadjectival verb with the meaning 'go from not-A to A'.

The structure in [16] also allows another type of derivation. [17b] gives an example with *(er-)töten* 'kill', in which the adjective *tot* 'dead' is substituted into the verb. Suppose that the adjective is prevented from substituting into the verb because the verb slot contains lexical material that may not be deleted. In that case the adjective remains *in situ*. In [17c] the verb *schießen* 'shoot' prevents incorporation of *tot*.

- [17] a. ?*Er machte den Feind tot.*
 he made the enemy dead
- b. *Er (er-)töt-ete den Feind.*
 he (er-) dead-ed the enemy
 'He killed the enemy.'
- c. *Er (*er-)schoß den Feind tot.*
 'He shot the enemy dead.'

In [17d] we have the verb *erschießen* 'shoot dead'.

- d. *Er *(er-)schoß den Feind (*tot).*
 he *er*-shot the enemy
 'He shot the enemy dead.'

Let me make it clear what I think *er-* stands for in [d]. It is **not** an allomorph of *tot*, even though they appear to alternate; I consider *er-* here to be a realization of the feature ($\rightarrow$) that is covert with adjectival predicates. Note that in [17c] *er-* is ungrammatical because *tot* occurs in the predicate, and is therefore the complement of the

covert change of state P. Only when the adjective is incorporated into the verb is the change of state P alternatively realized as the prefix *ier-*.

The curious situation in [17b], where *er-* is optional, is readily explicable. *Er-* is grammatical because *tot* has incorporated into the verb. However, because *er-* has acquired the connotations of 'to death', the presence of *er-* on a verb meaning 'kill' is semantically superfluous.

That the *er-* prefix adds to the simplex verb the notion 'to death' or 'from not-dead to dead' can be seen in the following pairs of verbs:

[18]	<i>schlagen</i>	'hit, beat'	<i>erschlagen</i>	'beat to death'
	<i>drosseln</i>	'throttle'	<i>erdrosseln</i>	'strangle to death'
	<i>stechen</i>	'stab, pierce'	<i>erstechen</i>	'stab to death'
	<i>trinken</i>	'drink'	<i>ertrinken</i>	'drown'(intrans.)
	<i>tränken</i>	'water (animals)'	<i>ertränken</i>	'drown' (trans.)

11.4.2 Change of state P with comparative degree adjectives

The example in [14b] contains the adjective *blaß* 'pale' in the comparative degree, *blasser* 'paler'. The corresponding deadjectival verb in [15b] is *verblassen* 'ver-pale, fade'. I think there is good reason to associate *ver-* with the change of state predicates that have the meaning 'go from A to more-A'. The proposal is that *ver-*, as a [OL] prefix, carries the feature (→), but (in contrast to the prefix *er-*, that is an allomorph of change of state P) this feature is an allomorph of the adjectival feature [COMPARATIVE].

It is a standard assumption that [COMPARATIVE] is a feature in the Specifier position of AP and that this feature can (in German must) be realized by a suffix on the adjective². There is a clear parallel here between the realization of (→) features involving nouns and (→) features involving adjectives. Thus, (→) can appear (i) as a

² Emonds proposes that the English *-er* suffix on adjectives is an Alternative Realization of the feature [COMPARATIVE], that may instead be realized by the morpheme *more* in its canonical position, Spec,AP.

prefix on denominal verbs, (ii) as P with a NP complement, (iii) as a case suffix on the NP. Similarly, (→) can appear (i) on deadjectival verbs, (ii) as [COMPARATIVE] in Spec,AP, (iii) as a [COMPARATIVE] suffix on the adjective.

11.4.3 The meaning of [COMPARATIVE]

Having claimed that [COMPARATIVE] is simply the realization of [→] on adjectives, I can now say what [→] means in the context of the comparative degree. *Taller* means 'beyond tall, forth from tall'. The comparative construction *taller than X* means 'forth from X's state of tallness'. The feature [→] appears as the comparative suffix on the adjective, while the morpheme *than* encodes the idea 'from'. Recall from Chapter 8 that the PIE case that encodes the notion 'from' is *ABLATIVE*, and that Latin expresses this by Ablative, and Russian expresses it by Genitive. Ablative on the Ground NP in Latin, and Genitive on the Ground NP in Russian are possible ways of expressing *than*.

- [19] a. *nihil est amabilius virtute.*
 nothing is lovable_{COMPAR} virtue_{ABL}
 'Nothing is more lovable than virtue.'

Latin (Woodcock 1959:61)

- b. *Ivan umnee brata.*
 Ivan clever_{COMPAR} brother_{GEN(= ABLATIVE)}
 'Ivan is cleverer than his brother.'

Russian

The Russian superlative construction is instructive. The superlative degree in Russian is most commonly formed by means of *samyj*, which I gloss as a determiner, and the positive form of the adjective. The point I want to draw attention to is the form in which the Ground is realized, i.e. by means of the preposition *iz(o)* 'out'. The

combination of *tz(o)* + Genitive is, of course, the realization of *ABLATIVE* by means of a PP.

- [20] *Ivan samyj umnyj iz vsech.*
Ivan DET cleverPOS out allGEN
'Ivan is the cleverest.'

On the assumption that [COMPARATIVE] is a realization of ($\rightarrow$), let us now see what the structure of a sentence containing a predicative adjective in the comparative degree looks like. In the structure below I include the zero change of state P that I argued for with respect to 'from not-A to A' constructions.

- [21]
-
- ```

graph TD
 VP --> V1[V]
 VP --> PP[PP]
 V1 --> P1[P]
 V1 --> V2[V]
 P1 --> E1[Ø]
 V2 --> W[wurde]
 PP --> P2[P]
 PP --> AP[AP]
 P2 --> E2[Ø]
 AP --> Spec[Spec]
 AP --> A1[A]
 Spec --> E3[Ø]
 A1 --> B[blaß]
 A1 --> A2[A]
 A2 --> P[pale]
 A2 --> ED[-ed]

```
- Ø    wurde    Ø    e<sub>i</sub>    blaß    -er<sub>i</sub>  
          became                    pale    -er  
 ver<sub>i</sub>-    blaß<sub>j</sub> -te    Ø    e<sub>i</sub>    e<sub>j</sub>    e<sub>i</sub>  
 ver-    pale-ed  
 'faded'

I am claiming that in [21] the feature [  $\rightarrow$  ] is adjoined to the left of V, and the adjective is substituted into the verb slot. Both these operations are in accordance with the Head Adjacency Principle (see 4.3).

The semantic difference between *ver-* and *er-* is now accounted for: it lies not in the feature itself, but where the feature is generated. Thus, *ver-* realizes ( $\rightarrow$ ) when

this feature is generated in Spec,AP; *er-* realizes ( → ) when this feature is generated in a PP.

11.5 Deadjectival *uer-* and *er-*verbs

Most deadjectival verbs in German are in the *er-* or *uer-* groups. There are some adjectives that give rise to verbs in both groups. I will deal firstly with the intransitive deadjectival verbs, then the transitive. The first table in [22] gives examples of intransitive *er-* deadjectival verbs, the second table examples of intransitive deadjectival *uer-*verbs.

Intransitive change of state *er-* and *uer-*verbs have a Figure subject. The 'hidden' Ground represents the original state. *Er*-verbs are paraphrased as 'go from not-A to A'; *uer-*verbs are paraphrased as 'go from A to more-A'.

[22] *ER-* deadjectival verbs: intransitive

|               |         |                   |                     |
|---------------|---------|-------------------|---------------------|
| <i>blaß</i>   | 'pale'  | <i>erblassen</i>  | 'become pale'       |
| <i>bleich</i> | 'pale'  | <i>erbleichen</i> | 'become pale'       |
| <i>krank</i>  | 'ill'   | <i>erkranken</i>  | 'become ill'        |
| <i>grau</i>   | 'grey'  | <i>ergrauen</i>   | 'become greyhaired' |
| <i>starr</i>  | 'stiff' | <i>erstarren</i>  | 'become stiff'      |

*VER-* deadjectival verbs: intransitive

|               |          |                    |                   |
|---------------|----------|--------------------|-------------------|
| <i>blaß</i>   | 'pale'   | <i>verblassen</i>  | 'fade'            |
| <i>bleich</i> | 'pale'   | <i>verbleichen</i> | 'fade'            |
| <i>alt</i>    | 'old'    | <i>veralten</i>    | 'become obsolete' |
| <i>arm</i>    | 'poor'   | <i>verarmen</i>    | 'become poor'     |
| <i>blöde</i>  | 'stupid' | <i>verblöden</i>   | 'become stupid'   |

In comparing the two groups of verbs, it is apparent that the *er*-verbs encode the idea 'go from not-A to A' (where A is the adjective base), while the *uer*-verbs are best para-

phrased as 'become more A'. There is a sense in which a verb such as *erkranken* 'become ill' describes a complete change, i.e. going from health to illness, whereas verbs such as *veralten* 'become obsolete' and *verarmen* 'become poor' denote a scalar change. The same difference can be seen in *erbleichen* and *verbleichen* which are both formed from *bleich* 'pale'. The first is a change from 'not-pale to pale', 'become, turn pale'; the second is scalar, 'lose some colour, become less colourful, fade'.

Transitive *er*- and *ver*-verbs have a third argument (in addition to an overt Figure and a 'hidden' Ground). The third argument is, then, necessarily an Agent or Causer. The *er*- deadjectival verbs have the sense of 'cause to go from not-A to A'. The transitive *ver*-verbs have the sense of 'cause become more A'.

[23] ER- deadjectival verbs: transitive

|                |            |                    |                 |
|----------------|------------|--------------------|-----------------|
| <i>ganz</i>    | 'whole'    | <i>ergänzen</i>    | 'complete'      |
| <i>frisch</i>  | 'fresh'    | <i>erfrischen</i>  | 'refresh'       |
| <i>möglich</i> | 'possible' | <i>ermöglichen</i> | 'make possible' |
| <i>hell</i>    | 'bright'   | <i>erhellen</i>    | 'illuminate'    |
| <i>böse</i>    | 'wicked'   | <i>erbosen</i>     | 'infuriate'     |

VER- deadjectival verbs: transitive

|                 |                  |                      |                      |
|-----------------|------------------|----------------------|----------------------|
| <i>anders</i>   | 'different'      | <i>verändern</i>     | 'alter'              |
| <i>deutlich</i> | 'clear'          | <i>verdeutlichen</i> | 'elucidate, clarify' |
| <i>schöner</i>  | 'more beautiful' | <i>verschönern</i>   | 'beautify, improve'  |
| <i>mehr</i>     | 'more'           | <i>vermehrten</i>    | 'increase'           |
| <i>dick</i>     | 'thick'          | <i>verdicken</i>     | 'coagulate'          |

It is significant that *ergänzen* 'complete' is in the *er*- group, and that *verändern* 'alter' is in the *ver*- group. Intuitively it makes sense to think that to make something possible is to make something completely possible, rather than to make it merely more

possible. With the *uer*-verbs *verdeutlichen* and *verdicken* it is possibly more difficult to claim that they embody a scalar change rather than a 'not-A to A' change; elucidating or clarifying is, after all, making completely clear, rather than just clearer, and coagulating seems to embody the sense of completeness. However, language is not always logical, and, given two prefixes for converting adjectives to verbs, the language may opt for one rather than the other for reasons that have little to do with the idea of scalar change *versus* complete change.

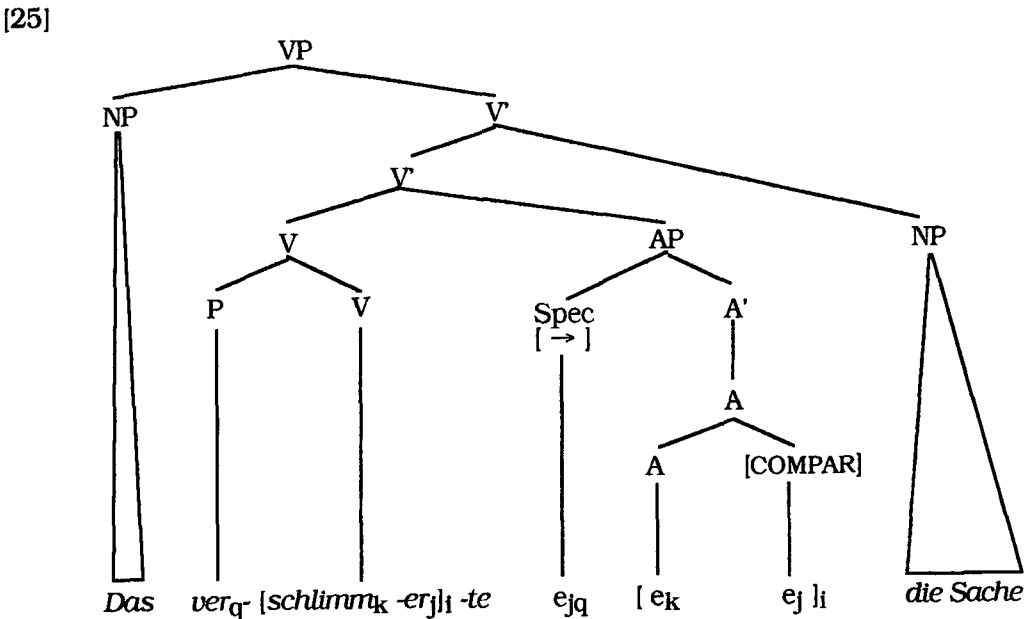
That *uer*- conveys the idea of a scalar change is borne out by the existence of a number of transitive *uer*-verbs that are conversions of the comparative form of the adjective, with the clear meaning 'make/become more A' (*verschönern* 'uer-more-beautiful, beautify, improve the appearance of', formed from the comparative *schöner* 'more beautiful' of the adjective *schön* 'beautiful'. Other examples of *uer*-verbs formed from the comparative of adjectives are given in the following table.

[24]

| positive | English | comparative | verb          | English    |
|----------|---------|-------------|---------------|------------|
| lang     | 'long'  | länger      | verlängern    | lengthen   |
| schlimm  | 'bad'   | schlimmer   | verschlimmern | 'worsen'   |
|          |         | minder      | vermindern    | 'lessen'   |
|          |         | mehr        | vermehrten    | 'increase' |
| klein    | 'small' | kleiner     | verkleinern   | 'reduce'   |
| groß     | 'large' | größer      | vergrößern    | 'enlarge'  |

Now, according to the analysis that I am proposing for *uer*-verbs, the prefix *uer*- is an allomorph of the feature [ → ], which is also the feature [COMPARATIVE] in Spec,AP. Since the comparative morpheme *-er* on adjectives is the Alternative Realization of [COMPARATIVE], we should not, strictly speaking, find the feature [ → ] realized in the verb both by the prefix *uer*-, and by the comparative morpheme *-er*.

There is, however, nothing in the formulation of Alternative Realization that specifically prevents reduplication of a feature. I will take it that *ver-* and *-er* in the examples just given are both allomorphs of [COMPARATIVE].<sup>3</sup> I give the structure in [25].



11.5.1 A comparison of German, Dutch, and Swedish deadjectival verbs

I will finish this section with a comparison between deadjectival verbs in German Dutch and Swedish. The Dutch data is taken from Mulder (1992a), the Swedish data is provided by Ute Bohnacker (p.c.). In the tables below the sign † indicates that the comparative degree of the adjective forms the basis of the derived verb.

German has both *ver-* and *er-* prefixes. It seems to be the case that *ver-* is the preferred prefix for deadjectival verbs. Anomalies are: *beschweren* 'make more difficult' (the *be-* prefix is not typically used for deadjectival verbs); *erneuern* 'renew' (the adject-

<sup>3</sup> In Russian the feature [ -> ] is regularly realized as a prefix on the verb as well as by a location preposition.

(i) On v+bežal v komnatu<sub>ACC</sub>.  
he in+ran in room  
'He ran into the room.'

tival base is a comparative *neuer* 'newer', yet the *er-* prefix is associated with the change of state 'from not-A to A', rather than with 'more A'.

[26]

|             |                         | German                                     |
|-------------|-------------------------|--------------------------------------------|
| 'difficult' | schwer                  | {be-/*ver-/er-/*ent-}schweren <sup>4</sup> |
| 'hard'      | hart                    | {*be-/ver-/er-/ent-}härten                 |
| 'short'     | kurz                    | {*be-/ver-/*er-/*ent-}kürzen               |
| 'cool'      | kühl                    | {*be-/ver-/*er-/ent-}kühlen                |
| 'long'      | länger <sup>†</sup>     | {*be-/ver-/*er-/*ent-}längern              |
| 'thin'      | dünn                    | {*be-/ver-/*er-/*ent-}dünnen               |
| 'thick'     | dick                    | {*be-/ver-/*er-/*ent-}dicken               |
| 'warm'      | warm                    | {*be-/*ver-/er-/?ent-}wärmen               |
| 'skinny'    | mager                   | {*be-/*ver-/*er-/*ent-}magern              |
| 'worse'     | schlechter <sup>†</sup> | {*be-/ver-/*er-/*ent-}schlechtern          |
| 'less'      | minder <sup>†</sup>     | {*be-/ver-/*er-/*ent-}mindern              |
| 'better'    | besser <sup>†</sup>     | {*be-/ver-/*er-/*ent-}bessern              |
| 'more'      | mehr <sup>†</sup>       | {*be-/ver-/*er-/*ent-}mehrern              |
| 'old'       | alt                     | {*be-/ver-/*er-/*ent-}alten                |
| 'new'       | neuer <sup>†</sup>      | {*be-/*ver-/er-/*ent-}neuern               |
| 'young'     | jung                    | {*be-/ver-/*er-/*ent-}jüngen               |
| 'poor'      | arm                     | {*be-/ver-/*er-/*ent-}armen                |

Neither Dutch nor Swedish have retained a productive equivalent to German *er-*. In Dutch there are only three extant verbs prefixed by *er-*: *zich erbarmen* 'have mercy on', *erkennen* 'er-know, recognize', *ervaren* 'experienced' (the adjectival use of the past participle of a lost verb). None of these three *er*-verbs is deadjectival.

In the table below note that the preferred prefix for deadjectival verbs is *ver-* in Dutch, *för* in Swedish. Both morphemes are cognate with German *ver-*.

<sup>4</sup> Ute Bohnacker informs me that *verschweren* 'make more difficult' is acceptable in Swabian dialect. Neither Heyne (1906) nor Collins (1991) list *verschweren*.

|             | Dutch                 |                             | Swedish             |                         |
|-------------|-----------------------|-----------------------------|---------------------|-------------------------|
| 'difficult' | moelijk               | {be-/*ver-/*ont-}moelijken  | svår                | {*be-/för-/*av-}svåra   |
| 'hard'      | hard                  | {*be-/ver-/ont-}harden      | hård                | {*be-/för-/*av-}hårdna  |
|             |                       |                             | hård                | {*be-/för-/av-}hårda    |
| 'short'     | kort                  | {be-/ver-/*ont-}korten      | kort                | {*be-/för-/av-}korta    |
| 'cool'      | koel                  | {be-/ver-/*ont-}koelen      | kall                | {be-/för-/av-}kyla      |
|             |                       |                             | sval                | {*be-/för-/av-}svalna   |
| 'long'      | lang                  | {*be-/ver-/*ont-}lengen     | lång                | {*be-/för-/*av-}långa   |
| 'thin'      | dun                   | {*be-/ver-/*ont-}dunnen     | tunn                | {*be-/för-/*av-}tunna   |
| 'thick'     | dik                   | {*be-/ver-/*ont-}dikken     | tjock               | {*be-/för-/*av-}tjockna |
| 'warm'      | warm                  | {*be-/ver-/*ont-}warmen     | varm                | {?be-/för-/*av-}värma   |
| 'skinny'    | mager                 | {*be-/ver-/*ont-}mageren    | mager               | {*be-/för-/av-}magra    |
| 'worse'     | slechter <sup>†</sup> | {*be-/ver-/*ont-}slechteren | sämre <sup>†</sup>  | {*be-/för-/*av-}sämra   |
|             |                       |                             | värre <sup>†</sup>  | {*be-/för-/*av-}värra   |
| 'less'      | minder <sup>†</sup>   | {*be-/ver-/*ont-}minderen   | mindre <sup>†</sup> | {*be-/för-/*av-}minska  |
| 'better'    | beter <sup>†</sup>    | {*be-/ver-/*ont-}beteren    | bättre <sup>†</sup> | {*be-/för-/*av-}bättra  |
| 'more'      | meer <sup>†</sup>     | {*be-/ver-/*ont-}merderen   | mera <sup>†</sup>   | {*be-/för-/*av-}mera    |
|             |                       |                             |                     | {*be-/för-/*av-}öka     |
| 'old'       | ouder <sup>†</sup>    | {*be-/ver-/*ont-}ouderen    | äldre <sup>†</sup>  | {*be-/för-/*av-}äldra   |
| 'new'       | nieuw                 | {*be-/ver-/*ont-}nieuwen    | ny                  | {*be-/för-/*av-}nya     |
| 'young'     | jong                  | {*be-/ver-/*ont-}jongen     | yngre <sup>†</sup>  | {*be-/för-/*av-}yngra   |
| 'poor'      | arm                   | {*be-/ver-/*ont-}armen      | arm                 | {*be-/för-/*av-}arma    |

A second point to note is that most examples where the comparative form of the adjective serves as the base for the deadjectival verb, the adjective is either (i) a common adjective, or (ii) the comparative form is suppletive, i.e. the comparative form is not cognate with the form of the positive degree (e.g. *gut* 'good', *besser* 'better'). This suggests that in the unmarked case the *ver-* prefix alone carries the comparative feature.

A third point to note is that, while we can make a number of robust generalizations on the basis of the data in the tables, the tables also illustrate clearly that there are slight inconsistencies in the paradigm. Why do German and Swedish use the comparative base for 'become younger', while Dutch uses the positive form? Why do Dutch and German, but not Swedish, allow a *be-*verb for "make more difficult"?

Why does Dutch use a comparative base for *verouderen* 'grow older' but not for its antonym *verjongen* 'grow younger', while German has the positive, and Swedish has the comparative form as the base for both verbs? I venture to suggest that there are unlikely to be answers to such questions.

### 11.6 Summary

We have seen that adjectives can be incorporated into [OL] prefixed verbs. Since adjectives archetypally describe a state, the verbs formed by incorporation of an adjective typically describe a change of state, either 'from not-A to A' (typically the *er-* prefix), or 'from A to more-A' (typically the *ver-* prefix). In the latter case the *ver-* prefix is the realization of the feature ( $\rightarrow$ ), which can appear on adjectives as the feature [COMPARATIVE], or in English as the comparative morpheme *more*. I showed that the phrase *taller than* [X] means 'forth from [X's state of tallness]'. I gave evidence from Latin and Russian that a bare Ablative and a bare Genitive respectively, both cases being the realization of PIE ABLATIVE, translate the equivalent of the morpheme *than*, and that this morpheme means, therefore, 'from'. The feature ( $\rightarrow$ ) has yet another realization in change of state predicates: it can be realized in German as *zu*, as in *Er wurde zu etwas* 'He became (to) something', and in Russian this feature is typically realized by a bare Instrumental, as in *On stal čem<sub>INSTR</sub>-to* 'He became something.'

We have now seen that adjective heads behave in two respects like their cousins noun heads: they can both be incorporated by substitution into null verbs, and they can both take some form of the feature ( $\rightarrow$ ) as inflection.

### 11.7 The structure of deadjectival and denominal prefixed verbs

I have shown that prefixed denominal and deadjectival verbs in German are formed by adjunction of a directional feature and incorporation by substitution of a noun or adjective head into an empty verb slot.

The mechanism whereby these verbs are formed implies that prefixed verbs are righthanded. In the structure given below, I take the feature [V] to be a null morpheme that marks the verb slot.

- [27] a. [ [+L] [→] *be-* [ *Reifen*<sub>N</sub> ] V ]

*be-* tyre

'put tyres on'

- b. [ [+L] [←] *ent-* [ *Wanze*<sub>N</sub> ] V ]

*ent-* bug

'de-bug'

- c. [ [OL] [→] *ver-* [ *blaß*<sub>A</sub> ] V ]

*ver-* pale

'turn pale'

Note that the features carried by the prefixes contain no category-specific information. Recall that the [+L] [→] features on *be-* can be realized as *DATIVE* on the noun (Ground), and that the [OL] [→] on *ver-* can appear as well on adjectives in the comparative degree. What this means is that the prefixes themselves, being devoid of categorial features, cannot bring about a change of category, noun to verb, or adjective to verb. In other words, the prefixes, being category-nonspecific, cannot be the head of a derived verb.

Some previous writers, working in different frameworks, have viewed the question of headedness in derived verbs as being problematic.

### 11.7.1 The Nature of the Problem

English denominal verbs such as *delouse* and deadjectival verbs such as *enrich* pose a number of problems associated with their internal structure. One problem that has

been widely addressed in the literature is the question of headedness. It appears that the *de-* and *en-* prefixes bring about a category change, forming a verb from a noun or an adjective, in the same way that the noun-forming affix *-ness* changes an adjective into a noun: from *rich* we get the noun *richness*. It is commonly accepted that an affix such as *-ness* is category changing and is, therefore, the head of the resultant noun. These compound nouns are, as a consequence, right-headed and conform to the Right Hand Head Rule (Williams 1981):

[28] The Right Hand Head Rule (RHR)

In morphology we define the head of a morphologically complex word to be the righthand member of that word.

(Williams 1981:248)

If we conclude that the English *de-* and *en-* prefixes are category changing, they would be lefthand heads. This would be an embarrassment for the RHR. In English, which is assumed to be right-headed at the word level, it is unexpected that there should be a small number of apparent exceptions.

My proposal will be that English denominal and deadjectival verbs do not constitute exceptions to the RHR if we regard them as being formed in the same way as their German and Dutch counterparts. Before I give my analysis, let me sketch the background to the problem and show what previous writers have proposed.

### 11.7.2 The Background

Writers who have addressed the problem of headedness in deadjectival verbs such as German *verdünnen* 'dilute' and Dutch *verbleken* 'bleach' have taken a number of different stands. Generally speaking they can be divided into two main camps according to whether they adopt a basically symmetrical approach to headedness (heads can be leftwards or rightwards), or a basically asymmetrical approach (heads are on the right). Among those who have adopted a basically symmetrical approach are Lieber

(1980), Trommelen and Zonneveld (1986), Van Beurden (1990), Lieber and Baayen (1993). Trommelen and Zonneveld (1986) consider Dutch prefixes to be verb-forming, and they propose a redundancy rule in order to override the RHR. Van Beurden (1990) proposes that headedness in complex words is parametrized, which allows some affixes to be lefthand heads.

Williams (1981), Selkirk (1982), Walińska de Hackbeil (1984), Kastovsky (1987), Bauer (1988), Scalise (1988), Neeleman and Schipper (1992) are representative of those writers who have opted for a basically asymmetrical analysis. The essence of Williams' (1981) view can be summarized as follows:

- a. Derivational suffixes are heads.
- b. Prefixes are not by and large heads, although there are some exceptions to this generalization.
- c. Some inflectional morphemes can be heads. Williams allows the possibility that, for instance tense morphemes may be the head of a verb.
- d. In compounds the head is the rightmost element.

It is [b] above that is the problem. Williams was forced to allow some exceptions to the rule that prefixes are not heads in order to handle such prefixes as English *en-* which creates a verb (*enrich*) from an adjective (*rich*). Lieber (1980), Selkirk (1984), and Lieber and Baayen (1993) all follow Williams in taking *en-* to be category changing, and therefore problematic in some respect.

I take it that it would be no bad thing if it could be shown that Williams' problematic prefixes are only apparently problematic, and that the RHR is not violated by verbal prefixes.

### 11.7.3 English and German Derived Verbs

Consider the following data:

|      |    |              |                |
|------|----|--------------|----------------|
| [29] | a. | <i>dirty</i> | 'to make Adj.' |
|      |    | <i>wet</i>   | 'to make Adj.' |

|    |                      |                |                     |
|----|----------------------|----------------|---------------------|
|    | <i>skin</i>          | 'to remove N'  |                     |
|    | <i>sugar</i>         | 'to add N'     |                     |
| b. | <i>tight+en</i>      | 'to make N'    |                     |
|    | <i>hard+en</i>       | 'to make Adj.' |                     |
|    | <i>sanct+ify</i>     | 'to make Adj.' |                     |
| c. | <i>de+louse</i>      | 'to remove N'  |                     |
|    | <i>en+courage</i>    | 'to give N'    |                     |
|    | <i>en+noble</i>      | 'to make Adj.' |                     |
| d. | <i>em+bold+en</i>    | 'to make Adj.' | (Scalise 1988: 238) |
|    | <i>de+sulfur+ate</i> | 'to remove N'  |                     |
|    | <i>de+gas+ify</i>    | 'to remove N'  |                     |

The verbs in [29a] are examples of zero-conversion, whereby a word of one category is converted into a word of another category by the addition of a zero morpheme. The verbs in [29b] and [29c] contain a suffix and a prefix respectively; the verbs in [29d] contain both a prefix and a suffix.

There are three observations about [29] that I think are pertinent:

(i) Observe firstly that [29a] proves that English has zero conversion. I think that for N to V conversion it is likely that affixless zero conversion is the unmarked case, and I would surmise that examples of affixless zero conversion outnumber conversion involving affixes in English. Consider N to V conversion:

- [30]      *dust the furniture*  
             *grass the lawn*  
             *water the plants*  
             *foot the bill*

Given the fact that English has abundant affixless zero conversion, we are not obliged to consider the affixes in [29b, c, d] as category-changing.

(ii) The verbs in [29c] are of the problematic *en+rich* type, i.e. according to Williams they are leftheaded. Observe, however, that there is no semantic difference between the deadjectival verbs *ennoble*, *embolden*, and *harden*, i.e. they all mean 'make Adj.'; in other words the *-en* suffix does not appear to impart any feature or quality to the verb *harden* which is lacking in *ennoble*.

(iii) If the prefix is the lefthand head of *ennoble*, and the suffix is the righthand head of *harden*, which affix is the head in the case of *embolden*? The verbs in [29d] seem to contain two category-changing affixes. Let us assume that by the normal rules of percolation (Lieber 1980) it is the rightmost head bearing a category feature that percolates this feature to the topmost node. This would mean that *-en* percolates its V feature, and that *em-* is prevented from doing so. But since *em-* has no semantic features and it cannot percolate its V feature, it is quite redundant.

(iv) That *en-* and *de-* are, as claimed by some writers, category-changing and convert an adjective or a noun into a verb, implies that these affixes are verbal in some way. They are not in themselves verbs or even remnants of verbs, so it is difficult to say what verbal element they represent. Note that this is only a problem for those writers who consider these affixes to be category-changing, and therefore, hosts of a verbal feature that percolates from them. In my view the prefixes *en-* and *de-* are French prefixes that derive from Latin prepositions<sup>5</sup>.

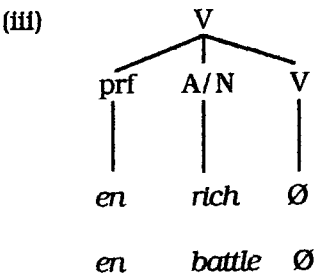
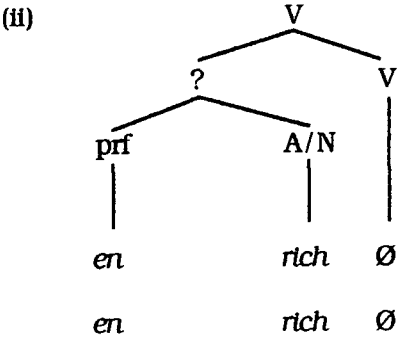
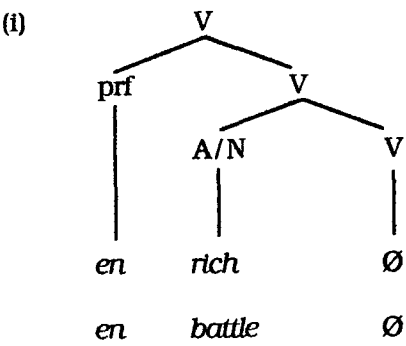
#### 11.7.4 The structure of denominal and deadjectival verbs

The question now is how to represent the tree structure for these verbs. There are three options: two binary branching structures or a ternary branching (flat) structure:

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<sup>5</sup> They are, of course, also the Romance equivalents of (→) and (←) respectively.

[31]



The ternary branching structure, shown in [iii], captures the fact that prefix and zero suffix are in tandem, but ternary structures would be highly marked<sup>6</sup>. Another problem is that the zero suffix is the head only by stipulation of the RHR. In the binary branching structure of (i) the zero suffix is clearly the most deeply embedded

<sup>6</sup> Bauer (1988) proposes ternary structure for some circumfixes in German and Dutch: the past participle, which has the form *prf+V+t/en*, and derived nouns of the form *ge+N+e*.

|      |                   |                                          |
|------|-------------------|------------------------------------------|
| (i)  | <i>ge+such+t</i>  | 'sought'                                 |
|      | <i>ver+such+t</i> | 'tried'                                  |
|      | <i>ge+bund+en</i> | 'bound'                                  |
| (ii) | <i>Ge+berg+e</i>  | <i>Berg</i> 'mountain range'; 'mountain' |
|      | <i>Ge+lach+e</i>  | <i>lachen</i> 'silly laughing'; 'laugh'  |

Bauer calls these forms 'synaffixes' (1988:20). Compare them with what Scalise calls the parasynthetic verbs in Romance languages, which consist of three constituents:

|     |                     |                    |           |
|-----|---------------------|--------------------|-----------|
| (i) | <i>in-giall-ire</i> | 'to become yellow' | (Italian) |
|-----|---------------------|--------------------|-----------|

(Scalise 1988:238)

Scalise gives the following rule for parasynthetic verbs:

|      |                                     |                    |
|------|-------------------------------------|--------------------|
| (ii) | <i>a+b+c</i> where <i>*a+b/*b+c</i> | (Scalise 1988:238) |
|------|-------------------------------------|--------------------|

constituent whose V-feature percolates to the highest node, and is, therefore, the head of the word by virtue of this fact alone.

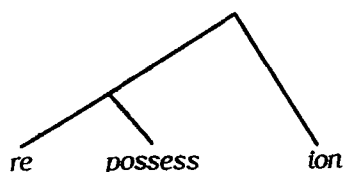
The problem with the binary structure [i] is that it suggests that the prefix is attached to a constituent that is a non-existent verb: \**rich-Ø*. There seems to be a general consensus in the literature, however, that such derivations are theoretically acceptable. Allen (1978) proposes an overgenerating morphology in which rules of word-formation can have non-existing words as their input. Scalise (1988) proposes a binary branching structure for the parasynthetic verbs in Romance languages such as *in+giall+ire* 'become yellow', in which the non-existent verb \**giall+ire* is prefixed by *in*. The point here is that \**giallire* is, by the rules of word formation in Italian, a possible word. The Italian word-formation rules allow verbs formed from adjectives to be prefixless. The verb *ingiallire* is also semantically no different to existing prefixless derivations such as *attivare* 'activate' from *attivo* 'active' (Scalise 1988:239).

The third possibility, shown in [ii] where the first two elements form a constituent, is problematic in that the node immediately dominating prefix and adjective is not readily identifiable; it is not A, the prefix has no category, and it cannot be V, otherwise there would be no point in the empty V suffix.<sup>7</sup> Furthermore, since the A node does not percolate (*en+rich* is not an adjective), this is counter to the Right Hand Head rule<sup>8</sup>.

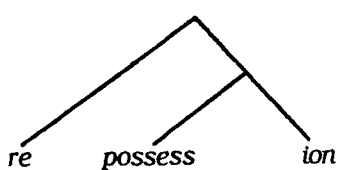
<sup>7</sup> I am not aware that any writer has identified this node. The writers that I have cited have considered only whether the prefix is category-changing or not, not what the prefix is.

<sup>8</sup> This is not to say that the first two elements of a derived form can never be a constituent. Walińska de Hackbell (1984:325) proposes this structure for the deverbal noun *repossession*, which is formed by suffixation on the verb *repossess*, giving a noun meaning 'the act of repossessing', a theta nominal in her framework. Prefixation of the noun *possession* would not derive a meaningful word, let alone a theta nominal. Although she does not label the nodes in her trees, we assume that in (i) the V node of *possess* percolates to the node immediately dominating *re*.

(i)



(ii)

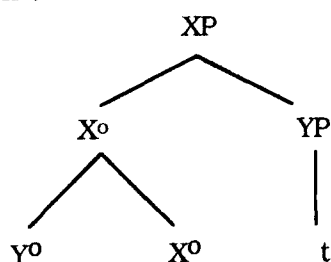


### 11.7.5 The prefix as a bundle of features

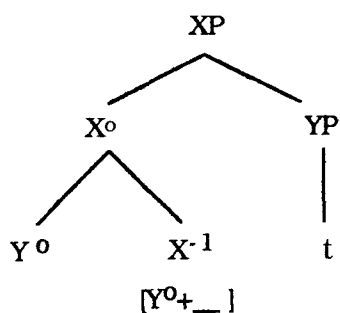
If we take the prefix to be a bundle of features, as I proposed above, there is no problem with the internal structure of deadjectival and denominal verbs. Recall that I have already established that the prefix, as an allomorph of a preposition, is adjoined to a null verb, and that the adjective or the Figure noun is substituted into the null verb slot.

In Chapter 4 I introduced Roberts' (1993:44) proposals for head adjunction and substitution in the syntax. I remind the reader of the mechanics of these two rules of head movement. Adjunction is the movement of one head into another head position. In [a] the head Y adjoins to the left of X. In [b] the head Y substitutes into an empty X.

[32] a. Adjunction of  $Y^0$  to  $X^0$ .



b. Substitution of  $Y^0$  into  $X^0$ , triggered by  $X^0$ 's feature.  $X^{-1}$  denotes the element in  $X^0$  which triggers incorporation.

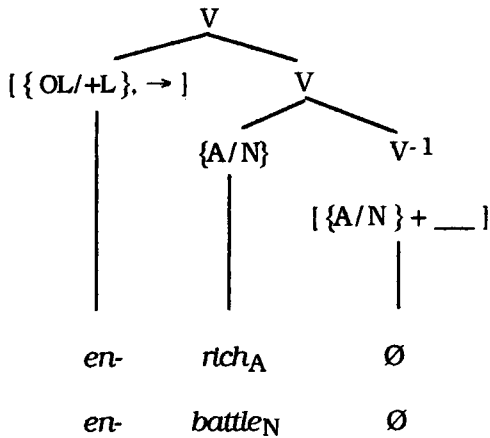


In the special cases we are considering it is a head A or N that substitutes into an empty V. I take it that it is the categorial feature on  $V^{-1}$  that triggers incorporation.

i.e.  $V^{-1}$  is simply a categorial feature, perhaps  $[-N, +V]$ , that labels a node. This  $V^{-1}$  node must be filled with lexical material. It may of course be filled by a verb, or, after substitution, by an adjective or a noun head.

Translating [a] and [b] into the terms we need for deadjectival and denominal prefixed verbs, we get the structure in [33].

[33]



Observe that this structure is in full conformity with Van Riemsdijk's HAP (4.3), Lieber's percolation hypothesis, and William's Right Hand Head Rule.

#### 11.7.6 Conversion versus incorporation

In Chapters 4 and 5 I showed that the *be-* prefix in German and Dutch enable the incorporation of the Figure noun, thus forming a prefixed denominal verb. In this chapter I have shown that the *ver-* and *er-* prefixes can in like manner incorporate nouns and adjectives. Incorporation is not, however, the only means whereby a deadjectival or denominal verb can be derived. I distinguish between two processes, incorporation on the one hand, and conversion on the other.

Having shown that German prefixed deadjectival and denominal verbs are the result of adjunction of the prefix and incorporation of the head noun or adjective, let me now show what I consider conversion to be. Below I give some examples of conversion in German and English.

[34] Conversiona. German

|                                    |                    |                   |
|------------------------------------|--------------------|-------------------|
| [ <i>Stärke</i> <sub>N</sub> ] v]  | = <i>stärken</i>   | 'starch'/'starch' |
| [ <i>glatt</i> <sub>A</sub> ] v]   | = <i>glätten</i>   | 'smooth'/'smooth' |
| [ <i>eben</i> <sub>A</sub> ] v]    | = <i>ebnen</i>     | 'level'/'level'   |
| [ <i>heiß</i> <sub>A</sub> ] v]    | = <i>hetzen</i>    | 'hot'/'heat'      |
| [ <i>Hitze</i> <sub>N</sub> ] v]   | = <i>hetzen</i>    | 'heat'/'heat'     |
| [ <i>rund</i> <sub>A</sub> ] v]    | = <i>runden</i>    | 'round'/'round'   |
| [ <i>schwach</i> <sub>A</sub> ] v] | = <i>schwächen</i> | 'weak'/'weaken'   |

b. English

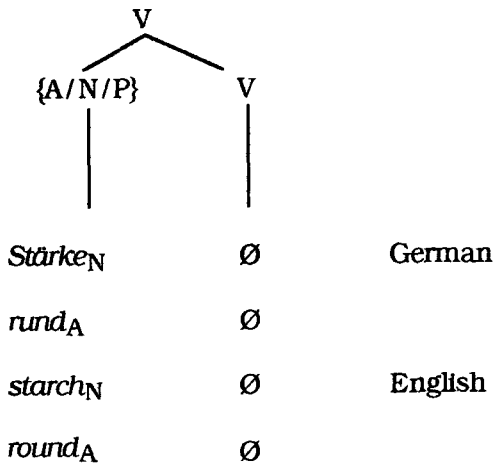
|                                                       |
|-------------------------------------------------------|
| [ [ <i>soap</i> <sub>N</sub> ] v] <i>oneself</i>      |
| [ [ <i>starch</i> <sub>N</sub> ] v] <i>the linen</i>  |
| [ [ <i>round</i> <sub>A</sub> ] v] <i>the edges</i>   |
| [ [ <i>dirty</i> <sub>A</sub> ] v] <i>one's shoes</i> |
| [ [ <i>round</i> <sub>P</sub> ] v] <i>the corner</i>  |
| [ [ <i>up</i> <sub>P</sub> ] v] <i>the stakes</i>     |

I claim that conversion is simply the result of a re-naming process. The head of the resulting verb is a null morpheme at the  $V^0$  level<sup>9</sup>. I give the structure of the conversions in [35] below.

---

<sup>9</sup> It is possible to consider conversion, i.e. the renaming of a word of one category as a word of another category, as substitution of a word of one category into that of another category. This would have the advantage of economy; adjunction and substitution would then be the sole means of word formation. Since, however, the end-result of conversion and substitution is the same, I will not pursue the matter further.

[35]



Compare the structure for conversion with the very different structure for incorporation that I gave in 12.2.2-12.3.2. The differences between these two structures imply that there will be differences in meaning, and/or differences in usage between verbs derived by conversion and those derived by incorporation.

#### 11.7.7 The meaning of verbs derived by Conversion

The fact that non-prefixed verbs derived by conversion have a very different structure to that of prefixed verbs derived by adjunction and substitution suggests that they will have a different meaning. Before considering the difference of meaning, let me summarise the structural differences.

#### [36] Incorporation

*verstrken* 'reinforce'                      (*stark*<sub>A</sub> 'strong')

*verbleichen* 'fade'                              (*bleich*<sub>A</sub> 'pale')

(i) The prefix *ver-* carries the feature [OL, →].

(ii) The feature [OL, →] means that the verb's arguments are in the Figure/Ground schema.

(iii) The head of the verb is at the V<sup>-1</sup> level.

(iv) The V<sup>-1</sup> head selects a head A or N to substitute into the null verb.

Conversion

*stärken* 'starch' (Stärke<sub>N</sub> 'strength, starch')

*bleichen* 'bleach' (bleich<sub>A</sub> 'pale')

- (i) There is no prefix, consequently no location feature.
- (ii) Since there is no location feature, the verb's arguments are not in the Figure/Ground schema.
- (iii) The head of the verb is at the V<sup>0</sup> level.
- (iv) V<sup>0</sup> does not select a head for incorporation.

I have shown in the early part of this chapter that a [OL] prefix causes a change of state. A prefixed deadjectival verb such as *verstärken* 'ver-strong, reinforce' can be paraphrased as 'make stronger', and a prefixed denominal verb such as *vereisen* 'ver-ice, ice up' can be paraphrased as 'go from a state of being not ice to a state of being ice'. Such paraphrases are possible due to the concept of Figure and Ground and the feature [OL, → ].

In contrast, verbs formed by conversion lack the feature [OL,→] and are consequently outside the Figure/Ground schema. They cannot, therefore, encode a change of state. I propose that conversion verbs denote an activity, the precise nature of which is determined by the A or N that forms the base of the verb. This activity will be in the unmarked case a common daily activity, typically performed perhaps by a particular individual. I give some examples below.

[37] a. *Decke* 'cover' ⇒ *decken* 'cover'

*Kurt deckt den Tisch.*

'Kurt lays the table.'

a'. *Ein Dachdecker deckt Dächer.*

a roofcoverer covers roofs

'A roofer roofs roofs.'

- b. *heiß* 'hot'  $\Rightarrow$  *heizen* 'heat'

*Wir heizen mit Holz.*

we heat with wood

'We use wood for heating.'

- c. *Salz* 'salt'  $\Rightarrow$  *salzen* 'salt'

*Nie salzt er die Kartoffeln.*

never salts he the potatoes

'He never salts the potatoes.'

- d. *Farbe* 'colour'  $\Rightarrow$  *färben* 'dye'

*Er färbte sein Haar gelb.*

'He dyed his hair yellow.'

- e. *Fisch* 'fish'  $\Rightarrow$  *fischen* 'fish'

*Ein Fischer fischt.*

'A fisherman fishes.'

Note the difference in meaning between the conversions in [37] and the incorporations in [38].

- [38] a. *Er bedeckte den Tisch mit Papieren.*

he *be*-covered the table with papers

'He littered the table with papers.'

- a'. *Er verdeckte den Tisch mit einem Tuch.*

he *ver*-covered the table with a cloth

'He concealed the table with a cloth.'

- b. *Der Streit erhitzte die Gemüter*

the argument *er*-heated the passions

'The argument whipped up a lot of feeling.'

- c. *Er versalzte die Suppe.*  
 he *ver*-salted the soup  
 'He put too much salt in the soup.'
- d. *Der Herbst verfärbte die Blätter rot und braun.*  
 the autumn *ver*-coloured the leaves red and brown  
 'Autumn turned the leaves red and brown.'

In these examples of prefixed verbs there is a clear idea of either (i) motion of the Figure to the Ground, as in [38a], or (ii) a change of state [38b,c,d]. Thus, the verbs in [38], being in the Figure/Ground schema, have some value for [L]. I will annotate the verbs in [37], which are outside the Figure/Ground schema, as [\*L].

The semantic difference between [\*L] verbs derived by conversion and [L] verbs derived by incorporation is parallel to the difference between non-derived verbs that are outside the Figure/Ground schema and non-derived verbs that are in the Figure/Ground schema. Let me take the verb *laden* 'load' as an example.

- [39] a. *Er lädt {Heu/Wagen}.* *laden* is [\*L]  
 'He loads {hay/carts}.'
- b. *Er lädt Heu auf den Wagen.* *laden* is [-L]  
 'He loads hay onto the cart.'
- b'. *Er belädt den Wagen mit Heu.* *laden* is [+L]  
 he *be*-loads the cart with hay  
 'He loads the cart with hay.'

The sentence in [39a] with a [\*L] verb describes an activity. None of the arguments are viewed as being Figure or Ground. The verb can take either *Heu* or *Wagen* for its direct object. The sentences in [39b,b'] constitute the familiar Locative Alternation, in

which there are Figure and Ground arguments, the verb being either [+L] or [-L]. I give further examples in [40] and [41].

- [40] a. *Er goß die Blumen.* *gießen* is [+L]  
 he poured the flowers  
 'He watered the flowers.'
- b. *Er goß Wasser auf die Blumen.* *gießen* is [-L]  
 'He poured water on the flowers.'
- b'. *Er begoß die Blumen mit Wasser.* *begießen* is [+L]  
 he be-poured the flowers with water  
 'He watered the flowers with water.'
- [41] a. *Er grüßte seinen Freund.* *grüßen* is [+L]  
 'He greeted his friend/said hallo to his friend.'
- b. *Er begrüßte das neue Personal.* *begrüßen* is [+L]  
 he be-greeted the new staff  
 'He welcomed the new staff.'

### 11.7.8 The implications for English

I have so far discussed incorporation (in the Figure/Ground schema) and conversion (outside the Figure/Ground schema) as it applies to German. I have shown that in German incorporation of N or A into a null verb is accompanied by a prefix that has a value for [L]; I have also shown that conversion in German does not involve a location feature, and is therefore not accompanied by a prefix. I now consider the consequences of this for English verbs.

The fact that English has retained the Locative Alternation, despite losing the prefixes that accompany the Locative Alternation in German, suggests that English verbs can carry a zero morpheme with some value for [L]. Assuming that this is so,

and assuming the analysis that I have presented for German is applicable to English, my analysis predicts two things.

(i) English has conversion and incorporation.

(ii) A verb derived by incorporation will, in the unmarked case, have the same form in English as a verb derived by conversion.

What (ii) means is that we cannot tell from the form of the verb alone whether a verb such as *heat* is derived by incorporation of the noun *heat* or conversion of the noun *heat*. However, what (i) predicts is that there will be a difference of meaning between two verbs derived by different means. We expect the verb derived by incorporation to embody the idea of 'transfer of Figure to Ground', or change of state; we expect a verb derived by conversion to denote an activity not involving transfer or change of state. The difference may be subtle.

It seems to be the case that verbs derived by conversion resist the addition of a location particle, whereas verbs derived by incorporation, and therefore having the meaning 'transfer N to NP', readily combine with location particles. Consider the examples.

[42] a. Conversion

*Gas heats (small flats) more cheaply than electricity.*

*That stove heats (\*up) well.*

*This duster dusts (\*up/\*off) well.*

*He never dusts (\*off) the furniture.*

*He dusted (\*up/\*off) the mirror for fingerprints.*

*He can't colour (\*up) his drawings properly.*

*He never waters (\*up/\*down/\*off) his plants.*

*He enjoys drying (\*up/\*down/\*off) the dishes.*

b. Incorporation

*The sun's rays heated (up) the greenhouse.*

*Heat (up) the frying pan before you start.*

- Be careful to dust \*(off) all the powder.*
- He coloured (up) when he realised his impropriety.*
- He always waters (down) his gin.*
- The sun has dried \*(up) the stream.*
- You can dry yourself (off) in the sun.*

I suggest that the reason that the verbs in [42b] can (in some cases must) take a location particle is that these verbs, through the process of incorporation, already contain the location feature (→), albeit as a zero morpheme in English. In contrast, the verbs derived by conversion in [42a] do not contain the feature (→), and do not, therefore, convey a sense of motion. This is enough to block the addition of a location particle to conversion verbs.

Having given my analysis of deadjectival and denominal verbs, both derived by incorporation and by conversion, I discuss in the remainder of this chapter the views of some other writers. I will firstly outline the proposal of Neeleman and Schipper (1992), and then discuss Lieber and Baayen's (1993) critique of their analysis.

11.8 Neeleman and Schipper's (1992) Conversion Analysis

11.8.1 The THEME Argument

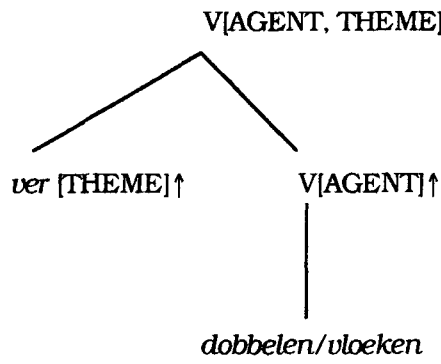
The essence of Neeleman and Schipper's (N&S) proposal is that the Dutch prefix *ver-* provides a THEME argument. They illustrate this by means of the following examples:

|      |    |                                 |                  |                |
|------|----|---------------------------------|------------------|----------------|
| [43] | a. | <i>dobbelen</i> <sub>V</sub>    | 'to gamble'      | [AGENT]        |
|      | b. | <i>vloeken</i> <sub>V</sub>     | 'to swear'       | [AGENT]        |
| [44] | a. | <i>verdobbelen</i> <sub>V</sub> | 'to gamble away' | [AGENT, THEME] |
|      | b. | <i>vervloeken</i> <sub>V</sub>  | 'to curse'       | [AGENT, THEME] |

Dutch, N&S (1992:60)

According to N&S, the AGENT originates in the intransitive verbs and the THEME in the prefix *ver-*. The following percolation mechanism operates. I show percolation to the next highest node by means of the arrow  $\uparrow$ :

[45]

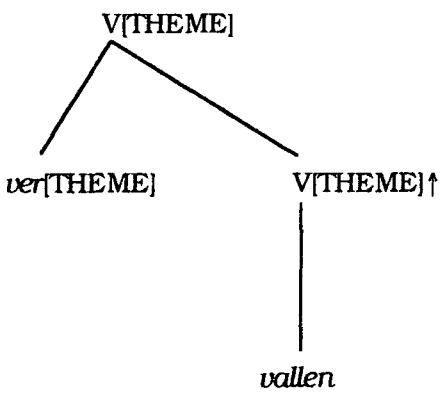


N&S (1992:60)

N&S claim that when *ver-* attaches to an ergative verb, such as *vallen* 'fall', the result is also ergative. In this case the rightmost THEME  $\theta$ -role percolates and blocks the THEME of the prefix.

- [46]    a.    *vallen*<sub>V</sub>                    'to fall'                    [THEME]  
          b.    *vervallen*<sub>V</sub>                'to go to ruin'            [THEME]

[47]



ibid.:61

When *ver-* attaches to a transitive verb, again it is the rightmost THEME argument of the transitive verb that percolates.

- [48]    a.     *scheuren<sub>v</sub>*                    'to tear'            [AGENT, THEME]  
         b.     *verscheuren*                'to tear up'        [AGENT, THEME]

ibid.:61

N&S appeal to the operation of the Relativised Righthand Head Rule (RHR) of Di Sciullo and Williams (1987), whereby the head for a certain property is the rightmost element specified for that property. In the case of *ver*-verbs derived from intransitive verbs, N&S claim that the THEME argument of *ver-* percolates because it is the only THEME argument; in the case of *ver*-verbs derived from ergative and transitive verbs, the THEME argument of *ver-* is blocked by percolation of the rightmost THEME argument, that of the simplex verb.

11.8.2 The Unexpected AGENT

In the previous section I showed how N&S claim to derive a THEME argument from the prefix *ver-* (even though this THEME argument may be blocked). N&S propose that prefixed deadjectival verbs are derived by conversion, and that, due to the conversion process, an AGENT argument can appear. They argue that this AGENT role cannot come from the prefix, and that it must therefore come from the conversion affix. Consider the data below:

- [49]    a.     *nieuw<sub>A</sub>*                    'new'            [THEME]  
              *duidelijk<sub>A</sub>*                'clear'            [EXPERIENCER,THEME]<sup>10</sup>

<sup>10</sup> We presume that an adjective such as *nieuw* has a THEME argument because the quality of newness has to be attributed to some object. *Duidelijk* has two arguments, since some object will be 'clear' to some person. I make no further comment on N&S's  $\theta$ -role approach, other than that I see neither necessity nor advantage in invoking  $\theta$ -roles, which I consider to be no more than useful labels for semantic concepts, when deadjectival verbs can be accounted for in a much simpler and more comprehensive way without them.

|    |                                |              |                           |
|----|--------------------------------|--------------|---------------------------|
| b. | <i>vernieuwen</i> <sub>A</sub> | 'to renew'   | [AGENT,THEME]             |
|    | <i>verduidelijken</i>          | 'to clarify' | [AGENT,EXPERIENCER,THEME] |

ibid.:63

The examples in [49b] have an AGENT in addition to the  $\theta$ -roles that they inherit from the adjective. N&S conclude that this extra  $\theta$ -role must percolate from the conversion affix.

Not all *ver*-verbs derived from adjectives, however, have an AGENT  $\theta$ -role. The ergative adjective *bleek* 'pale' has only one  $\theta$ -role, namely a THEME. The ergative verb derived from it, *verbleken* 'to pale' also has only one argument, a THEME. On the other hand *nieuw* 'new' has one  $\theta$ -role, an AGENT, while the resultant verb has two  $\theta$ -roles, AGENT and THEME.

N&S explain this by proposing that Dutch grammar allows *ver*-verbs to have an optional AGENT  $\theta$ -role and that various factors will determine whether only one or both variants enter the lexicon. N&S claim that, in fact, the majority of Dutch *ver*-verbs have both readings: *vervuilen* 'to make/become dirty', from *vuil* 'dirty'.

### 11.8.3 Denominal Verbs

The conversion process that N&S propose for verbs derived from nouns is somewhat more complicated than that for deadjectival derivations, although the same ideas hold good. The following examples show noun to verb conversion without verbal prefixation.

|      |    |                                |                |               |
|------|----|--------------------------------|----------------|---------------|
| [50] | a. | <i>werk</i> <sub>N</sub>       | 'work'         | [R]           |
|      |    | <i>deel</i> <sub>N</sub>       | 'part'         | [R]           |
|      |    | <i>schimmel</i> <sub>N</sub>   | 'mould'        | [R]           |
|      | b. | <i>werken</i> <sub>V</sub>     | 'to work'      | [AGENT]       |
|      |    | <i>delen</i> <sub>V</sub>      | 'to divide'    | [AGENT,THEME] |
|      |    | <i>schimmelen</i> <sub>V</sub> | 'to go mouldy' | [THEME]       |

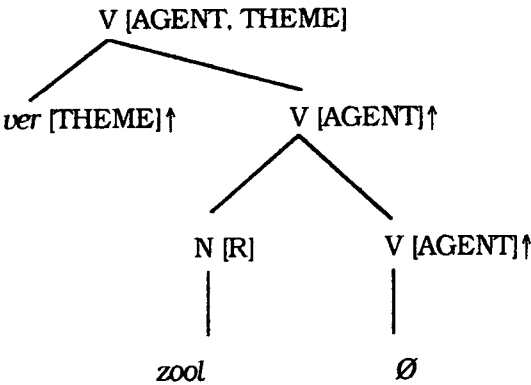
ibid.:66

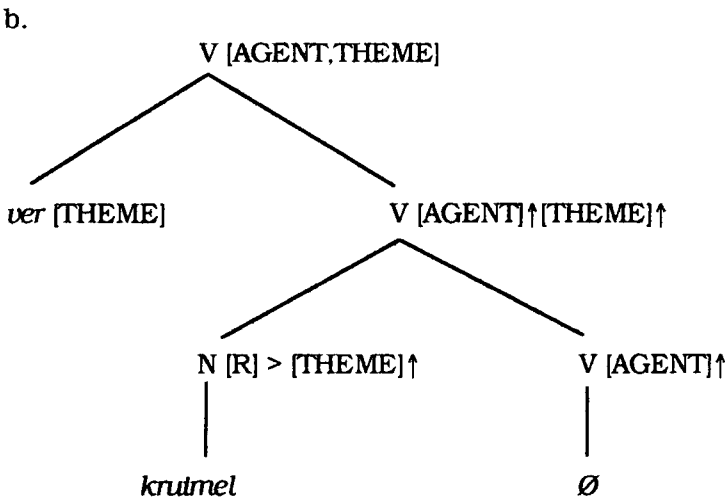
The resultant verbs from the nouns in [50a] are intransitive, transitive, and ergative, respectively. N&S account for this in the following way. The two AGENT  $\theta$ -roles are provided by the conversion affix. Recall that for deadjectival verbs N&S claim that the conversion affix allows an optional AGENT  $\theta$ -role to percolate to the highest node of the verb. There is no THEME  $\theta$ -role on the nouns in [48a], therefore the THEME  $\theta$ -role must come from somewhere else. N&S propose that the THEME  $\theta$ -role may be a re-analysis of the [R] (for REFERENCE on the noun (see Williams 1981b)). This R-role optionally reanalyses itself as THEME and percolates to the highest V node.

N&S claim that they are able to account for a number of interesting problems in denominal verbs. Firstly, because both THEME (from[R]) and AGENT (from the  $\emptyset$ -head) are optional, there should exist denominal verbs that have an empty  $\theta$ -grid. This is, indeed, the case with weather verbs such as *sneeuwen* 'to snow' from the noun *sneeuw* 'snow'. Such a verb can only assign a 'pseudo  $\theta$ -role' (Chomsky 1986).

Secondly, N&S claim to be able to differentiate structurally between denominal verbs such as *verkrutmel* 'to crumble' from *kruimel* 'crumb' and *verzolen* 'to re-sole' from the noun *zool* 'sole'. At first sight *verkrutmel* and *verzolen* look to be the same sort of noun to verb conversion. Semantically, however, they are different. *Verkrutmel* means 'to turn something into crumbs'; the end result is a pile of crumbs. *Verzolen*, on the other hand means 'to supply soles to a shoe'; the end result is not a sole. (These two verb types are also widely referred to as having an 'affected' versus an 'effected' object.)

[51] a.





ibid.:70

N&S argue that in the case of *verzolen* the THEME  $\theta$ -role is provided by the prefix *ver-*, whereas in *verkrutmel* the THEME  $\theta$ -role is provided by the R-role of the converted noun. N&S point out that in the case of *verkrutmel* the THEME is clearly related to the noun; the D-structure object of the verb turns into crumbs.

11.8.4 Neeleman and Schipper's F-feature

So far N&S's analysis of *ver*-verbs has said that the prefix *ver-* can contribute a THEME  $\theta$ -role to the verb to which it is prefixed, but has said nothing about how this THEME  $\theta$ -role can be syntactically realized. It seems to be the case, however, that in addition to contributing a THEME  $\theta$ -role, *ver-* also stipulates that this  $\theta$ -role must be realized as an NP. Compare the following.

- [52] a. *Jan zwijgt {\*zijn verleden/over zijn verleden}*  
'J. keeps-silent {his past/about his past}.'
- b. *Jan verzwijgt {zijn verleden/\*over zijn verleden}*  
'J. *ver*-keeps-silent {his past/about his past}.'

ibid.:81

In [52a] the verb *zwijgen* takes a PP, whereas in [52b] the prefixed form *verzwijgen* obligatorily takes an NP direct object. Both sentences are semantically the same. N&S suggest that the prefix carries a feature F in addition to contributing a THEME  $\theta$ -role.





A more important problem, perhaps, is presented by verbs such as German *werfen* 'throw' and *senken* 'sink (trans.), lower'. These verbs can also be decomposed into something like 'Cause something to go to a place' and we would expect them to have an LCS that is in all respects the same as the LCS for the *ver*-verbs, i.e. something along the lines of the following.

- [56] a.     *werfen*                    'throw'  
               *senken*                    'sink, lower'  
               CAUSE/GO/FROM /TO ( [ Thing, Property, Place    ] )
- b.     *verwerfen*                'reject'  
               *versenken*               'sink, lower'  
               ?CAUSE/CAUSE/GO/FROM /TO ( [ Thing, Property, Place    ] )

If, then, *werfen* and *senken* can have the LCS of a *ver*-verb, what happens when these two verbs are prefixed by *ver*? I show the result in [56b]. By now I think it should be apparent that L&B's interpretation of *ver*- as 'adding an optional causative function' to a simplex verb causes more problems than it is able to answer. Bear in mind that in my proposal *ver*- carries the feature ( $\rightarrow$ ), which may be interpreted as ( $\downarrow$ ). In the case of [56] this feature means nothing more than 'down'. The main difference between L&B's interpretation of *ver*- and mine is that their analysis depends on the *ad hoc* stipulation that a prefix can host a causative feature, while in my analysis this prefix (allomorph of a preposition) hosts a directional feature, which in the unmarked case is hosted by a preposition.

### 11.9.2 L&B's arguments against N&S

Lieber and Baayen (1993) reject N&S's analysis of Dutch *ver*- verbs on three grounds. Firstly, L&B point out that there are exceptions to N&S's claim that when *ver*- attaches to an ergative verb it does not alter the verb's ergativity. Secondly, L&B claim that N&S are wrong in proposing that deadjectival *ver*-verbs are formed by zero-af-

fixation, because conversion by zero-affixation would generate ungrammatical forms. Thirdly, L&B criticize N&S's zero-affixation on the grounds that there is no single uniform semantic contribution that a single zero conversion affix could make.

I will now deal with each of the three criticisms made by L&B. It will turn out that none of them have any substance.

#### 11.9.2.1 Ergative simplex verbs and transitive *ver-*verbs

N&S claim that when *ver-* attaches to an ergative verb, the resultant verb is also ergative; *vallen* 'to fall' has only a THEME  $\theta$ -role, as does the prefixed verb *vervallen* 'to go to ruin'. L&B claim that there are a number of examples in which an ergative base gives rise to a nonergative *ver-* derivation. They give the example of *verzinken* 'to sink (away)', which is derived from *zinken* 'to sink'. *Verzinken*, as L&B point out, can be used ergatively, as in *Het schip verzonk in de diepte* 'the ship sank away in the depths'. But it can also be used transitively, as in *Zij verzonk de spijkers in het hout* 'she sank the nails into the wood'. L&B claim that this last example undermines N&S's analysis because (i) *verzinken* is a transitive verb, whereas the base verb is ergative, (ii) *verzinken* has an AGENT  $\theta$ -role. Recall that N&S claim that the 'unexpected agent' comes from the  $\emptyset$  conversion affix that converts adjectives and nouns into verbs. *Verzinken*, however, is derived from a base verb and does not, therefore, have a conversion affix.

L&B's rejection of N&S's analysis is based on the false premise that the transitive verb *verzinken* is derived by *ver-* prefixation from the ergative verb *zinken*. Consider the following German data. I give N&S's  $\theta$ -roles to clarify the discussion.

- [57] a. *Das Schiff {sank/versank}.* [THEME]  
           the ship sank / *ver*-sank  
           'The ship sank.'  
       *Er {sank/versank} in tiefen Schlaf.* [THEME]  
           he sank / *ver*-sank in deep sleep

'He sank into a deep sleep.'

- b. *Er {senkte/\*versenkte} {das Lot ins Meer/setne Preise}.*

[AGENT,THEME]

he sank / *ver*-sank the plumbline into the sea/his prices

'He lowered {the plumbline into the sea/his prices}.'

*Er {\*senkte/versenkte} die Nägel ins Holz.*

[AGENT, THEME]

he sank / *ver*-sank the nails in-the wood

'He sank the nails into the wood.'

There are two distinct (though lexically related) base verbs in German, the strong verb *sinken* 'go down, sink', and the weak, causative verb *senken* 'to lower, cause to sink'. The addition of the *ver*-prefix on these two verbs does not alter the  $\theta$ -grids; the ergative verb remains ergative, and the transitive verb remains transitive. This result for the German verbs conforms to N&S's predictions. Apparently, Dutch has only the strong verbs *zinken* and *verzinken* and lacks the weak (causative) verbs that are equivalent to the German *senken* and *versenken*.

This strong/weak alternation can be found in a number of German and English verb pairs, such as;

[58] *erschrecken* (st)/*erschrecken*(wk)

*Das Kind erschrak.*

*Das Gespenst erschreckte das Kind.*

'The child took fright.'

'The ghost frightened the child'.

*fallen* (st)/*fällen* (wk);

*fall* (st)/*fell* (wk)

*Der Baum fiel.*

*Er fällte den Baum.*

'The tree fell.'

'He felled the tree.'

*liegen* (st)/*legen* (wk)

*lie* (st)/*lay* (wk)

*Die Eier lagen auf Tellern.*

*Die Hühner legten die Eier.*

'The eggs were (lying) on plates.'

'The hens laid the eggs.'

Apparently L&B are not aware of this verbal pattern, since they also cite the Dutch *verschrikken* from the base verb *schrikken* 'to be frightened' to undermine N&S's analysis. *Verschrikken* may have the transitive reading 'frighten' as well as the ergative reading 'become frightened'. Again we have to say that the Dutch verbal pattern is defective. Compare the German forms:

[59] a. strong (ergative)

*Er {schrak/schreckte} aus dem Schlaf.*<sup>11</sup>

'He startled out of his sleep.'

*Er erschrak.*

'He became frightened.'

b. weak (transitive)

*Etwas {\*schrak/schreckte} ihn aus dem Schlaf.*

'Something startled him out of his sleep.'

*Etwas erschreckte ihn.*

'Something frightened him.'

Again, the Dutch pattern is defective; the simple verb *schrikken* is only ergative, while the prefixed *verschrikken* can be ergative and transitive, corresponding to the German *erschrecken*. Dutch has apparently lost the transitive reading of *schrikken*.

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<sup>11</sup> The past tense in *schrak* is archaic, having been replaced by the weak *schreckte*.

### 11.9.2.2 Deadjectival *ver*-verbs

The second reason for L&B's rejection of N&S's analysis has to do with the formation of deadjectival verbs. Recall that N&S claim that in *verarmen* 'to become poor' from the adjective *arm* 'poor' it is not the prefix *ver-* that enables the conversion to take place, but the zero affix. N&S further claim that this zero affix also allows an optional AGENT  $\theta$ -role to appear. L&B's argument is centred on verbs such as *veronaangenemen* 'to make unpleasant' from the compound adjective *onaangenaam* 'unpleasant'. L&B reason that it must be the prefix that causes the conversion from adjective to verb. If the zero affix caused the conversion, it would give rise to an impossible verb form *\*onaangenemen* to which the prefix was then added.

I think that this sort of objection has already been adequately dealt with by N&S. Take their example of the deadjectival verb *vergrijzen* 'to become grey' from *grijs* 'grey' (1992:58). N&S are quite aware that their structure [*ver*[*grijs*<sub>A</sub>  $\emptyset_V$ ]]*en* contains the non-existent verb *\*grijzen*. N&S take the side of Allen (1978), who proposes an over-generating morphology in which word formation rules can have such words as their input. Such prefixless deadjectival verbs do exist in Dutch. Take the verb *witten* 'to whiten' from *wit* 'white'. In this case we are obliged to assume conversion by zero affixation. This supports N&S's analysis. It is also embarrassing for L&B's analysis. L&B have to assume two quite different structures for deadjectival verbs: one with *ver-* as the category changing element, and one with zero conversion.

### 11.9.2.3 Conversion by zero affix

The third reason for L&B's rejection of N&S's zero conversion is rather more abstract. L&B claim that in their own LCS approach it is impossible to analyse conversion as affixation of a single uniform zero affix, because 'it is impossible to identify a unique semantic contribution for a putative zero affix' (1993:67). They give examples of prefixless deadjectival and denominal verbs that have markedly different LCSs. On the other hand, L&B claim that the Dutch prefixes *be-*, *ver-*, *ont-* have a uniform effect on

the LCSs of the base. If, however, prefixed verbs are derived by zero conversion, then we should not expect there to be uniformity across all *ver*-prefixed verbs.

There are a number of things that seem wrong here. Firstly, I see no reason why a zero affix should make any semantic contribution to the semantics of the base, let alone a uniform semantic contribution. In my view, and I suppose, also in the view of N&S, the function of the zero conversion affix is to create a verb from a word of some other category.

Secondly, L&B claim that each of the Dutch prefixes *ver-*, *be-*, *ont-* makes a 'distinct and unitary' contribution to the semantics of the base, and that this semantic contribution consists of the addition of primitive semantic functions like CAUSE, GO, INCHOATIVE, (1993:65). (They claim that this supports their proposal that these prefixes are category-changing, since the resulting derived form is always a verb, regardless of the category of the base.) L&B suggest that all *ver*-verbs are either literal or metaphorical motion verbs (1993:55). More specifically they claim this:

The prefix *ver-* constitutes a single morphological category in that all forms in *ver-*, whether deverbal, denominal or deadjectival, contain the basic motional component of meaning as well as the FROM and TO functions, and at least optionally a CAUSE function. Polysemy arises largely from the varied ways in which the LCSs of the bases can amalgamate with the LCSs of the prefix.

(Lieber and Baayen 1993:60)

L&B sometimes go to extreme lengths to accommodate some verbs into their analysis. They give the following examples (1993:65):

|      |    |                   |                        |
|------|----|-------------------|------------------------|
| [60] | a. | <i>kleden</i>     | 'dress, clothe'        |
|      |    | <i>bekleden</i>   | 'cover'                |
|      |    | <i>ont-kleden</i> | 'undress'              |
|      |    | <i>verkleiden</i> | 'change one's clothes' |

|    |                  |                                 |
|----|------------------|---------------------------------|
| b. | <i>raden</i>     | 'guess, advise'                 |
|    | <i>beraden</i>   | 'consider, think over'          |
|    | <i>ont-raden</i> | 'dissuade from, advise against' |
|    | <i>verraden</i>  | 'betray'                        |

It is clear that the prefixed verbs in a behave according to a pattern. L&B interpret *bekleden* to mean 'to cause the act of clothing to be completely at something', i.e. 'to cover'. *Ont-kleden* contains the notion 'away from' and means, therefore, 'to undress'. *Verkleden* adds the motion component and means 'to cause something to go from clothes to clothes', that is 'to change clothes'. It is when L&B turn their attention to less literal derivations that they have to force their verbs into the mould. For the verbs in [b] I give L&B's analysis verbatim:

The cases in (my [61b]) are somewhat more metaphorical in nature, yet still follow nicely from our analysis. If the base verb *raden* means 'to guess, advise', *beraden* is 'to cause the act of guessing/advising to be completely at something', that is 'to consider'. *Ont-raden* is 'to cause the act of advising to be completely away from something'. And *verraden* incorporates the pejorative argument in this case; we interpret it as 'to cause something to go from the act of advising to ruin', hence 'to betray'.

(Lieber and Baayen 1993:65)

I confess that I am unable to see how *betray* means 'to cause something to go from the act of advising to ruin'. You can betray a friend, or you can betray a secret, i.e. the core meaning of *betray*, and also of German *verraten*, is 'to reveal, to tell, to tell on', and has nothing to do with 'advising' or 'guessing' or 'going to ruin'. L&B are forced into their analysis of *verkleiden* by their assumption that the prefixes make a 'distinct and unitary contribution' to the semantics of the base. It is one thing to say that, for instance, *ver-* has some distinct and unitary content, but quite another thing to say that this contribution must appear on every verb prefixed by *ver-*.

Let us leave Dutch aside for the moment. A problem arises when we try to apply the same reasoning to German verbs. The prefixes in German which correspond to the Dutch *ver-*, *be-*, *ont-* prefixes are *ver-*, *be-*, *ent-*, and an extra one *er-*<sup>12</sup>.

The German verbs corresponding to the Dutch verbs in [60b] are:

|      |                  |                 |                                 |
|------|------------------|-----------------|---------------------------------|
| [61] | <u>Dutch</u>     | <u>German</u>   |                                 |
|      | <i>raden</i>     | <i>raten</i>    | 'guess, advise'                 |
|      | <i>beraden</i>   | <i>bedenken</i> | 'consider, think over'          |
|      | <i>ont-raden</i> | <i>abraten</i>  | 'dissuade from, advise against' |
|      | <i>verraden</i>  | <i>verraten</i> | 'betray'                        |

Note that the base verbs and the *ver-*verbs have the same form and meaning in Dutch and German, whereas the German verb meaning 'to consider, think over' is a *be-*prefixed form of *denken* 'to think', not *raten*. The German verb meaning 'to advise against' is a separable verb with the particle *ab-*. The German *bedenken* and *abraten* are much more transparent than their Dutch equivalents. If *denken* means 'to think' and *be-* provides a THEME  $\theta$ -role, then the prefixed verb must mean 'to think about an object, to consider'. The most literal meaning one could think of for *abraten* is 'to advise off' since the basic meaning of *ab* is 'off'. (Dutch also has the identical form in *afraden* 'to advise against'.)

Where Dutch and German prefixed cognates differ radically in meaning, it is frequently the case that at least one of the verbs has a purely idiosyncratic meaning. So, *beraten* in German means 'to advise' (also 'to consult, discuss') from the base *raten* 'to advise'. The essential difference between the verbs is that the base verb takes a dative object, while the *be-*verb takes an accusative object. The change of case is the direct effect of the *be-* prefix<sup>13</sup>. In this case the Dutch verb, *beraden* 'to consider,

<sup>12</sup> As noted in 12.4.1, Dutch has very few verbs composed of the prefix *er-*.

<sup>13</sup> Thus, *raten/beraten* are parallel with *folgen/befolgen* 'follow', and *dienen/bedienen* 'serve'. In all three cases the *be-* prefix is the realization of the feature ( $\rightarrow$ G), which may be realized as Dative on the NP complement of the simplex verb.

think about' is idiosyncratic and opaque to analysis. In the case of Dutch *ontraden* 'to advise against (away from)' and the German *entraden* (archaic) 'to dispense with' it is the German verb that is clearly idiosyncratic. The *ent/ont-* prefix clearly does contribute some notion of 'away from' to *ontraden* and to many other verbs in German and Dutch. Dutch *onthoofden* and the German *enthaupten* have exactly the same structure and both mean 'to behead'. (It is curious that English *behead* has the wrong prefix, but this just goes to show that prefixes can behave most perversely<sup>14</sup>.)

### 11.9 Conclusion

I have shown that there is little of substance in L&B's objections to N&S's conversion analysis. I have shown that L&B's first objection, i.e. that ergative *zinken* and *schrikken* should not be able, according to N&S, to give rise to the transitive *verzinken* and *verschrikken* forms, fails when the full paradigm of weak and strong derivations in German is considered. Dutch has a gap in the paradigm.

I have shown that L&B's second objection, i.e. that zero conversion creates inadmissible verbs from compound adjectives, has already been adequately addressed by N&S by appealing to a well established principle of overgeneration.

Thirdly, I showed that L&B's objection on the grounds that the prefixes under discussion make a distinct and unitary contribution to the semantics of the derived verb, whereas a zero affix does not, is fraught with difficulties when we examine German data. Yet this is one of the prime assumptions in L&B's framework. L&B might, I suppose, argue that their analysis works only for Dutch, but this would be a serious diminution of the value of their work. Surely, work on structures that two closely related languages have in common should be able to accommodate the data in both languages. Even if one were to confine one's study to Dutch verbs, one would find plenty of evidence that the choice of prefix can be much less predictable than L&B would like it to be.

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<sup>14</sup> The CLASS IV (denominal) verb *behead* should mean 'supply with a head, transfer a head to' by analogy with *befog*, *befriend* etc.

### 11.10 Arguments against N&S

#### 11.10.1 N&S's THEME and AGENT

In my view N&S's analysis is suspect on two grounds: (i) N&S assume that intransitive verbs such as *dobbelen* 'gamble', and *vloeken* 'curse' have Agent subjects. If the subjects of these verbs are Agents, then they are not the same sort of Agent as the Agent (= Causer) subject of *He loaded the hay onto the cart*, where the subject causes the hay to be on the cart; (ii) N&S do not equate the *ver-* prefix with a meaning as such; the prefix is merely associated with a type of argument. This means N&S have no way of accounting for the semantic difference between *vallen* 'fall' and *vervallen* 'go to ruin'.

I have no argument against N&S's percolation mechanism. What I find unpersuasive about N&S's analysis is (i) that *ver-* has a THEME argument, (ii) that this THEME argument can percolate, unless blocked by the THEME argument of the simplex verb, (iii) If percolation of the *ver-* THEME argument is blocked, how can *ver-* induce any change in the semantics of the simplex verb (which it clearly does in the case of *vervallen* 'go to ruin', and *verscheuren* 'tear up')?

N&S are obliged to appeal to the idea that the nouns in the structures in [50] have a [R] REFERENCE  $\theta$ -role, and this R-role may, optionally, reanalyse itself as THEME. I consider the idea of [R]  $\theta$ -roles on nouns to be a dubious concept. N&S adopt it without argumentation. Furthermore they offer no rationale for the (self-) realization of the [R] as THEME; there is no precedence for such a metamorphosis, no parallel in the rest of the grammar. It seems that the structural difference that N&S propose for the verbs *verzolen* and *verkruiden* is simply that, a structural difference. It gives the appearance of a structural difference that has been contrived in order to show that these two verbs are semantically different.

N&S's F-feature, which they do not attempt to identify further, is essentially the composite feature [+L,  $\rightarrow$ ] that in my proposal is most usually carried by the *be-* prefix in both German and Dutch. In my view *ver-* in [52b] is an allomorph of the

preposition *over* 'about' in [52a]. It is unfortunate that N&S stop short of investigating their F-feature. As it stands their F feature is merely a stipulation, an ad hoc extra, which they feel is required in order to accommodate the alternation between PP arguments and NP arguments. The F feature cannot be more than a stipulation in N&S's system. Their system is based on the idea that the *ver-* prefix, the conversion affix, the noun [R] feature (which can reanalyse itself as THEME) may all host  $\theta$ -roles. In other words, their system is based on the idea that word-internal structure is semantically driven, rather than syntactically driven. Their system, then, has no place in it for prepositions, and cannot cope with the purely syntactic difference between the PP complement of *zwijgen* and the NP complement of *verzwijgen*. N&S are therefore obliged to introduce their F-feature as a stipulation to handle a (for them) awkward fact of Dutch syntax.

### 11.11 Conclusion

This chapter has demonstrated that the concept of the hidden Ground enables us to account for the prefixed deadjectival verbs in a unified manner according to the principles of the Figure/Ground distinction and the principles of head movement that I presented in this and earlier chapters. I showed that the 'change of state P' that is usually covert in German adjective predicates may be alternatively realized by the prefix *er-* (from not-A to A), and that the feature COMPARATIVE may be alternatively realized by the prefix *ver-* (from A to beyond-A).

I made a distinction between deadjectival verbs derived by conversion and those derived by incorporation of prefix and adjective, and showed that the semantic differences between the two types of word formation were predictable.

Finally, I discussed two competing analyses of *ver-* prefixation, and showed that Lieber and Baayen's (1993) criticisms of (Neeleman and Schipper 1992) were unconvincing. On the other hand I demonstrated that N&S's proposal that *ver-* causes the verb to which it is prefixed to acquire an optional THEME role is no more tenable than L&B's proposal that *ver-* equates with a CAUSATIVE feature.

## CHAPTER 12

### DEVELOPMENTS OF THE PREFIXAL SYSTEM:

#### THE SECONDARY PREFIXES

##### 12.1 Introduction

The prefixes that I have discussed so far in this study, i.e. *ge-*, *be-*, *er-*, *ver-*, *ent-*, I have called the Primary prefixes. In this chapter I introduce the Secondary Prefixes. In contrast to the Primary prefixes, the Secondary prefixes are those prefixes that have the same phonetic form as the prepositions and the particles that they alternatively realize: *über* 'over', *unter* 'under', *hinter* 'behind', *durch* 'through', *um* 'round'. It will be seen that these prefixes conform in principle to the model that I have established for the (→) Primary [+L] and [OL] prefixes. In other words the verbs formed with Secondary Prefixes may be [+L] and take a Ground direct object, like *be-*, or be [OL], like *ver-* and *er-*, and indicate a change of location or change of state without reference to an external Ground. In this sense, then, they represent a development of the prefixal system. That their form is identical to the form of their prepositional counterparts, and that their meaning is transparent, indicates that they developed after the Primary prefixes were established.

##### 12.2 The [+L] Secondary Prefixes

The [+L] Secondary Prefixes follow the pattern of the *be-* prefix and the [+L] *ent-* prefix in that the direct object of the verb is the Ground argument. The example in [1], with the Primary Prefixes *be-* and *ent-* will remind the reader of the constructions involving [+L] prefixed verbs. The Ground argument is shown in bold; the Figure argument is underlined.

[1] *Er belud **den Wagen** mit Heu.*

he *be*-loaded the cart with hay

'He loaded the cart with hay.'

And now, similarly with the Secondary Prefixes:

- [2] a. *Er durchbohrte **seinen Gegner** mit seinem Schwert.*  
 he through-bored his opponent with his sword  
 'He ran his sword through his opponent.'
- b. *Er umbaute **den Garten** mit einer Mauer.*  
 he round-built the garden with a wall  
 'He enclosed the garden with a wall.'
- c. *Er umwickelte **das Geschenk** mit Papier.*  
 he round-wrapped the present with paper  
 'He wrapped the present in paper.'

It is clear that in [2] the sword (Figure) went *through the opponent* (Ground), the wall (Figure) was built *around the garden* (Ground), and the paper (Figure) was wrapped round the present.

Just as the Primary Prefixes can incorporate a noun (Figure) argument, so can the Secondary Prefixes. In the next examples *Keller* 'cellar', *Joch* 'yoke', and *Arm* 'arm' are incorporated by substitution into a null verb, in accordance with the templates I provided in Chapter 5.

- [3] a. *Er unterkellerte **das neue Haus***  
 he under-cellared the new house  
 'He built a cellar in the new house.'
- b. *Er unterjochte **den Feind**.*  
 he under-yoked the enemy  
 'He subjugated the enemy.'

- c. *Er um-arm-te **seinen Freund**.*

he round-armed his friend

'He embraced his friend.'

The examples so far have had the Figure and Ground arguments in the VP, with the Ground argument as direct object of the verb and the Figure in a PP, or with the Figure incorporated into the verb. I now show that, just as with the Primary prefixed verbs, the Figure may be the subject.

- [4] a. *Er hinterging **seine Frau**.*

he behind-went his wife

'He was unfaithful to his wife.'

- b. *Er hinterzog **die neuen Steuern**.*

he behind-moved the new taxes

'He evaded the new taxes.'

- c. *Soldaten durchbrachen **die Front**.*

soldiers through-broke the front

'soldiers broke through the front.'

Thus, we see the [+L] Secondary Prefixes following the patterns of the Primary Prefixes *be-* and *ent-*.

### 12.3 The [OL] Secondary Prefixes

The [OL] Secondary Prefixes follow the patterns established for the Primary [OL] Prefixes *ver-* and *er-* in that the Ground is a 'hidden' Ground. Again I show the Figure argument underlined. The bare Dative NPs shown in parentheses have the status of adjuncts. Note that I claim that they are not Ground arguments. Even though the



*Der Arzt untersagte (dem Patienten<sub>DAT</sub>) das Rauchen.*

the doctor under-said (to) the patient the smoking

'The doctor forbade the patient to smoke.'

c. *Er hinterließ (seinem Sohn<sub>DAT</sub>) viel Geld.*

he behind-left (to) his son much money

'He left a lot of money to his son.'

*Er hinterlegte 10 Mark als Pfand.*

he behind-laid 10 marks as deposit

'He left 10 Marks deposit.'

I can find no examples where *um* 'round' and *durch* 'through' occur as [OL] prefixes.

These two prepositions seem restricted to appearing as [+L] prefixes (with a Ground direct object of the verb), or as particles.

### 12.3.1 The special case of *um* and *durch*

I turn now to the question why, if the Secondary Prefixes *über*, *hinter*, *unter* may be [+L] AND [OL], *durch* and *um* are only [+L] and cannot, therefore, appear with a 'hidden' Ground.

[6] a. *\*Er durchfiel in der Prüfung.*

he through-fell in the exam

'He failed the exam.'

b. *\*Er umkam bei einem Verkehrsunfall.*

he round-came by a traffic accident

'He was killed in a traffic accident.'

These sentences become grammatical when *durch* and *um* are realized as particles, rather than prefixes.

- [7] a. *Er fiel (in der Prüfung) durch.*  
           he fell in the exam through  
           'He failed the exam.
- b. *Er kam (bei einem Verkehrsunfall) um.*  
           he came by a traffic accident round  
           'He was killed in a traffic accident.'

There are two possible approaches to finding a reason for the restriction on *durch* and *um*: (i) a semantic approach, (ii) a syntactic approach.

We might say that semantically *durch* and *um* differ from the other PATH prepositions in that their PATH feature is in some way more 'complex' than that of the other PATH prepositions. In other words, *durch* 'through' and *um* 'round' denote a PATH feature that is not as simple as that of *in*, *auf*, *unter* etc. Recall that Wunderlich (1987) takes this line in an attempt to account for why some prepositions are not prefixes, and why some prefixes are not prepositions. Apart from saying that *um* and *durch* are 'more complex', there does not seem much else we can say about the semantic difference.

There is, however, a syntactic difference between the two groups of Secondary prepositions; *unter*, *über*, *hinter* behave syntactically like the Primary prepositions *in*, *an*, *auf* in that they take both Accusative and Dative case, whereas *durch* and *um* take Accusative case only. Is this fact just a historical accident? Or is it significant?

Note that a two-case preposition denotes [+PATH] when it takes the Accusative case, and [-PATH] when it takes the Dative case.

- [8] a. *Er lief hinter den Baum*<sub>ACC</sub>. [+PATH]  
 'He ran behind the tree.'
- b. *Er saß hinter dem Baum*<sub>DAT</sub>. [-PATH]  
 "He was-sitting behind the tree.'

The two prepositions *durch* and *um* take the accusative only.

- [9] a. *Er lief um den Baum*<sub>ACC</sub>. [+PATH]  
 'He ran round the tree.'
- b. *Die Kinder saßen um {den*<sub>ACC</sub>*/ \*dem*<sub>DAT</sub>*} Baum.* [?-PATH]  
 'The children were-sitting round the tree.'

Given the German system of two-case prepositions where Accusative denotes [+PATH] and Dative denotes [-PATH], we would expect that the notion of 'stationary location with respect to the tree' would require the Dative case. This gives the wrong result with *um* and *durch*, which are ungrammatical with a Dative case. Perhaps it is the case that, although the children are stationary with respect to the tree, the circle that they form is viewed as being [+PATH]. In similar fashion we say that a fence runs round the garden, and a cable runs through a wall, using *run*, which is clearly a verb of motion, even though fence and cable are stationary with respect to garden and wall. Let us assume that this analysis is correct, i.e. the case-assigning properties of *um* and *durch* are not defective, and that the expectation that *um* and *durch* should behave like the other [+PATH] prepositions is based on a false application of the notion of 'being stationary'.

If we are right to assume this, we should then consider whether the facts of case assignment by prepositions in general in German are part of the overall picture of the prefix/prepositional system. It turns out that there is indeed a relationship between the case(s) that prepositions can assign and the role of the prefixes that are reflexes of the prepositions. Before examining the case-assigning properties of the

prepositions, we need to consider why there are gaps in the prefixal/prepositional system.

#### 12.4 The gaps in the paradigm

Wunderlich (1987) observes that in German there are prepositions that cannot be prefixes (*auf*, *bei*, *an*, *in*, *aus*, *von*, *ab* and possibly *vor*), and that there are prefixes that cannot be prepositions (*be*, *ent*, *er*, *ver*, *zer*)<sup>2</sup>. Moreover, it is this group of prefixes that substitutes for the prepositions. The prefixes, according to Wunderlich, are the vowel-reduced forms of formerly deaccented prepositions (*be-* < *bi*; *ent-* < *int*; *er-* < *ar*, *ir*, *ur*; *ver-* < *far*, *fir*; *zer-* < *za*, *zi*, *zu*). He assumes that Proto-Germanic must have had what he calls a P-prefix rule that allowed an affix to substitute for a preposition, in the same way that the preposition *durch* 'through' can prefix to the verb.

Wunderlich proposes that the prepositions that cannot occur as affixes (*auf*, *bei*, *an*, *in*, etc.) 'express some contact with (or topological proximity to) a local goal' and that prepositions that can occur as prefixes express dimensional relations (*über* 'over', *hinter* 'behind' etc.) or even path relations (*durch* 'through', *um* 'round') (1987:309). I think that Wunderlich's attempt to distinguish the two groups by means of concepts such as 'contact', 'topological proximity' and 'dimensional' relations provides part of the answer. I give the Primary Prefixes and the prefixes that relate to them in the following table.

---

<sup>2</sup> Kuhn (1924) states that in the old languages, in Old Norse in particular, these prefixes were practically equal in meaning and could perform virtually identical functions.

[10]

| Prefix        | OHG Prep.                        | Cogn. Prep.    | Assoc.<br>Prep.    |
|---------------|----------------------------------|----------------|--------------------|
| <i>be-</i>    | <i>bt-</i>                       | <i>bei</i>     | <i>an, in, auf</i> |
| <i>ent-</i>   | <i>ant int</i>                   |                | <i>aus, von</i>    |
| <i>er-</i>    | <i>ur ir</i>                     |                |                    |
| <i>ge-</i>    | ?                                | ?              |                    |
| <i>ver-</i>   | <i>far fer fir</i><br><i>fur</i> | <i>vor für</i> |                    |
| <i>wider-</i> | <i>widar</i>                     | <i>wider</i>   |                    |
| <i>zer-</i>   | <i>za zi zu</i>                  | <i>zu</i>      |                    |

The next table shows the Primary Prefixes with a form of the feature (→), abstracting away from *er-* and *ver-* being also (↑) and (↓) respectively. The Secondary Prefixes are added<sup>3</sup>. Note that in the table the two prefixes *ge-* and *be-*, marked # are [OL] prefixes with the feature (→). These two prefixes, which were apparently virtually identical in meaning and to some extent interchangeable, began to diverge at some time in the OHG period. I propose that the *be-* prefix becomes so strongly associated with the role of taking a location direct object that it loses the capacity to be intransitive; as a productive prefix it now takes an obligatory location complement. In other words *be-* has gone from [OL] to [+L]. The *ge-* prefix is now redundant and no longer available to create new verbs (it is given a new role as the morpheme that identifies the past participle). The *be-* and *ge-* verbs that were already in the language before these two prefixes assumed new roles either become disfavoured and die out, or they become lexicalised. Examples of *be*<sup>#</sup> *ge*<sup>#</sup> prefixed verbs are *gedethen* 'thrive', *bestehen* 'continue to exist', discussed in 3.3.3.2.

<sup>3</sup> For the sake of the discussion I also add the preposition *zwischen* 'between' that cannot occur as a prefix or a particle.

[11]

|           | Prefixes          |                                               | Prepositions       |              |
|-----------|-------------------|-----------------------------------------------|--------------------|--------------|
|           | [+L]              | [OL]                                          |                    |              |
| Primary   | → G <i>be</i>     | → <i>be<sup>#</sup> ge<sup>#</sup> er ver</i> | <i>an auf in</i>   | 'at, on, in' |
|           |                   | <i>wider</i>                                  | <i>wider gegen</i> | 'against'    |
|           | ← G <i>ent</i>    | ← <i>ent</i>                                  | <i>ab aus von</i>  | 'out, from'  |
| Secondary | <i>über</i>       | <i>über</i>                                   | <i>über</i>        | 'over'       |
|           | <i>unter</i>      | <i>unter</i>                                  | <i>unter</i>       | 'under'      |
|           | * <i>vor</i>      | * <i>vor</i>                                  | <i>vor</i>         | 'before'     |
|           | <i>hinter</i>     | <i>hinter</i>                                 | <i>hinter</i>      | 'behind'     |
|           | <i>durch</i>      | * <i>durch</i>                                | <i>durch</i>       | 'through'    |
|           | <i>um</i>         | * <i>um</i>                                   | <i>um</i>          | 'round'      |
|           | * <i>zu</i>       | * <i>zu</i>                                   | <i>zu</i>          | 'to'         |
|           | * <i>zwischen</i> | * <i>zwischen</i>                             | <i>zwischen</i>    | 'between'    |

There are three observations that I would like to make about the above table:

(i) The table clearly show the difference between the Primary and the Secondary prefixes. What I think sets the Primary P off from the Secondary is the nature of the PATH feature in the two groups. The PATH feature of the Primary P is somehow conceptually simpler, or more basic than the PATH feature of the Secondary group. The Primary prepositions and prefixes are the ones that Wunderlich (1987) assigns a meaning of 'topological proximity' or 'contact'. The Secondary prefixes and prepositions are those that he labels 'dimensional' P.

(ii) Note that three prepositions do not occur as prefixes: *vor*, *zu*, and *zwischen*<sup>4</sup>.

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<sup>4</sup> There seems no clear reason why *vor* should not have become a prefix, other than the likelihood that *ver-* usurped its place. I suggest that the reason that *zwischen* has not developed into a prefix is that it was not originally a preposition (but a word meaning 'two-fold' OHG *zwisc*, *zwiski* (Skeat 1897)). In Chapter 13 I give my reasons for taking *zu* to be a type of defective P. It is not surprising, then, that it does not occur as a prefix.

(iii) *Durch* and *um* are only partially represented amongst the prefixes; they are restricted to being [+L], i.e. the verbs they prefix take a Ground direct object; they do not occur as [OL] prefixes with a 'hidden' Ground.

In order to see how the points (i-iii) relate to the prepositional system, we need to see the prepositions in the context of the cases that they take. There are three groups of prepositions in German: (i) those that take the Accusative (motion towards the object) or the Dative (stationary location with respect to the object), (ii) those that take the Accusative only, and (iii) those that take the Dative only<sup>5</sup>. In [12] I show the prepositions in three columns, according to their case requirements. The Primary prepositions are alternatively realized by the Primary prefixes; this is indicated in the table by the features (→) and (←). The Secondary prepositions that can occur as [+L] and [OL] prefixes (in the same phonetic form) are marked (✓). The two Secondary prepositions that occur only as [+L] prefixes are marked (✓<sup>o</sup>). What I will here call Tertiary prepositions that cannot occur as prefixes, and have no prefixal allomorph are marked (\*).

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<sup>5</sup> I am ignoring a number of prepositions that require a complement in the Genitive, such as *statt* 'instead of', *während* 'during'. These are for the most part 'derived' prepositions, and do not occur as prefixes or particles.

[12]

| The German Prepositions and the cases they take |                            |   |           |                           |                |                   |                         |                |
|-------------------------------------------------|----------------------------|---|-----------|---------------------------|----------------|-------------------|-------------------------|----------------|
| P + Acc or Dat                                  |                            |   |           | P + Acc                   |                |                   | P + Dat                 |                |
| Prim.                                           | <i>an</i>                  | → | 'to, at'  | <i>gegen</i>              | →              | 'against, toward' | <i>ab</i>               | ← 'from'       |
|                                                 | <i>auf</i>                 | → | 'on'      | <i>wider</i> <sup>‡</sup> | →              | against           | <i>aus</i>              | ← 'out'        |
|                                                 | <i>in</i> (pf <i>ein</i> ) | → | 'in'      |                           |                |                   | <i>von</i>              | ← 'from'       |
| Sec.                                            | <i>hinter</i>              | ✓ | 'behind'  | <i>durch</i>              | ✓ <sup>o</sup> | 'through'         |                         |                |
|                                                 | <i>über</i>                | ✓ | 'over'    | <i>um</i>                 | ✓ <sup>o</sup> | 'round'           |                         |                |
|                                                 | <i>unter</i>               | ✓ | 'under'   |                           |                |                   |                         |                |
|                                                 | <i>vor</i>                 | * | 'before'  |                           |                |                   | <i>zu</i>               | * 'to'         |
|                                                 | <i>zwischen</i>            | * | 'between' |                           |                |                   | <i>bei</i> <sup>‡</sup> | * 'by'         |
| Tert.                                           |                            |   |           | <i>ohne</i>               | *              | 'without'         | <i>mit</i>              | * 'with'       |
|                                                 |                            |   |           | <i>für</i>                | *              | 'for'             | <i>nach</i>             | * 'after, to'  |
|                                                 |                            |   |           |                           |                |                   | <i>seit</i>             | * 'since'      |
|                                                 |                            |   |           |                           |                |                   | <i>außer</i>            | * 'apart from' |

Note: ( ‡ ) *wider* and *bei* took Accusative or Dative in OHG.

Generalizing from [12], we can say:

- (i) The Primary Acc/Dat prepositions are alternatively realized by (→) prefixes.
- (ii) The Primary Dat prepositions are alternatively realized by (←) prefixes.
- (iii) The Secondary Acc/Dat prepositions are [+L] and [OL].
- (iv) The Secondary Acc prepositions are defectively [+L] only.
- (v) Tertiary prepositions do not occur as prefixes.

These generalizations are presented in schematic form in [13].

[13]

| Realization of prepositions as prefixes |                |             |             |
|-----------------------------------------|----------------|-------------|-------------|
|                                         | P + Acc or Dat | P + Acc     | P + Dat     |
| Prim.                                   | →              | none        | ←           |
| Sec.                                    | [+L], [0L]     | [+L], [*0L] | none        |
| Tert.                                   | * as prefix    | * as prefix | * as prefix |

It seems from this evidence that we can say that the determining factors that permit the realization of a preposition (or the realization of the feature hosted by a preposition) as a prefix are twofold:

- Either (i) They must be location prepositions that differentiate between [+PATH] and [-PATH] by means of case morphology (Accusative *versus* Dative),
- Or (ii) They must be [+SOURCE] prepositions.

In summary, TABLE I shows the relationship between the Primary, Secondary, and Tertiary prefixes, the prepositions that correspond with them, together with the case or cases that the prepositions take, and the particles.

TABLE 1: The relationship between the prefixes, the prepositions, and the particles.

| Prefixes                              |       |                                                               | Corresponding<br>Preposition                       | Case<br>taken | Corresponding<br>Particle |
|---------------------------------------|-------|---------------------------------------------------------------|----------------------------------------------------|---------------|---------------------------|
| +L                                    | -L    | OL                                                            |                                                    |               |                           |
| → G be                                | ∅     | → be <sup>#</sup> , ge <sup>#</sup> , er, ver                 | bei <sup>‡</sup> , an, in, auf, wider <sup>‡</sup> | AD            | bei, an, ein, auf, wider  |
| ← G ent                               | ← ent | ← ent                                                         | aus, von                                           | D             | ab, aus, davon            |
| über                                  |       | über                                                          | über                                               | AD            | über                      |
| unter                                 |       | unter                                                         | unter                                              | AD            | unter                     |
| *vor                                  |       | *vor                                                          | vor                                                | AD            | vor                       |
| hinter                                |       | hinter                                                        | hinter                                             | AD            | hinter                    |
| durch                                 |       | *durch                                                        | durch                                              | A             | durch                     |
| um                                    |       | *um                                                           | um                                                 | A             | um                        |
| *zu                                   |       | *zu                                                           | zu                                                 | D             | zu                        |
| LEGEND                                |       |                                                               |                                                    |               |                           |
| be <sup>#</sup> , ge <sup>#</sup>     |       | fossilized forms of [OL] prefixes                             |                                                    |               |                           |
| bei <sup>‡</sup> , wider <sup>‡</sup> |       | these two prepositions were AD in OHG                         |                                                    |               |                           |
| *                                     |       | indicates ungrammatical as a prefix with the relevant feature |                                                    |               |                           |

### 12.4 Conclusion

This chapter showed that the Secondary prefixes *hinter-*, *über-*, *unter-* follow the patterns of the [+L] and [OL] Primary prefixes, in that they may take a Ground direct object like the Primary prefix *be-*, and also be associated with a hidden Ground like *ver-* and *er-*. The two prefixes *um-* and *durch-* are [+L] only. I showed that this is likely to be due to the fact that the prepositions *um* and *durch* take the Accusative case only, in contrast to the other prepositions that host the feature (  $\rightarrow$  ), which distinguish between Accusative (for motion towards the complement of the P) and Dative (for stationary location).

## CHAPTER 13

### THE DATIVE AND LOCATIVE ALTERNATIONS

#### 13.1 Introduction

It is tempting to think that English dative constructions such as *Bill gave Sue a book*/*Bill gave a book to Sue* are similar to or perhaps variations of the Locative Alternation that we see in *Bill loaded the cart with hay*/*Bill loaded hay on the cart*. This section is an examination of the Dative Alternation and the Locative Alternation.

I start with a review of Pesetsky's (1995) analysis of the Dative Alternation. In order to account for the appearance of *to* in one of the Dative structures, and the absence of *to* in the other Dative structure, Pesetsky postulates the presence of a null morpheme, which he calls *G*. I will first show that Pesetsky's account is flawed in a number of respects.

Pesetsky attempts to unify the Dative Alternation with the Locative Alternation by postulating two variants of his *G* morpheme, *G<sub>of</sub>* and *G<sub>with</sub>*, that sub-categorize for the prepositions *of* and *with* respectively, which are the prepositions that surface in clauses in the Locative Alternation. I will show that Pesetsky's analysis is once more flawed. I then offer my own analysis of the Locative Alternation. Pesetsky's view and my view differ crucially in what I call the *identity of overt P and zero P*; Pesetsky's zero morphemes do not observe this identity, the morphemes in my analysis do observe identity.

I further show that the German Dative constructions *Er gab seinem Freund ein Buch*/*er gab ein Buch zu seinem Freund* 'he gave his friend<sub>DAT</sub> a book/he gave a book to his friend<sub>DAT</sub>' are not the same as the English Dative Alternation.

I propose that the relationship between the Locative Alternation and the German Dative structures is best accounted for by proposing that German *zu* and English *to* are associated with a Goal argument that represents a destination or endpoint, rather than a Ground.

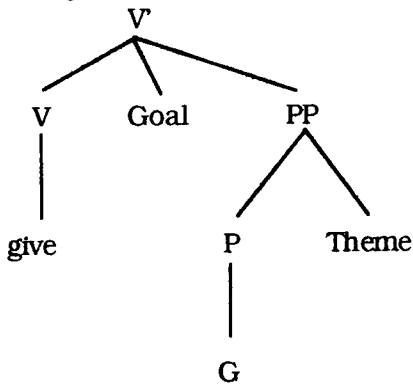
### 13.2 The Dative Alternation and Pesetsky's Zero G

The English Dative Alternation is associated with verbs such as *give*, *send*, *assign*, which allow two surface structures, one with the preposition *to* and one without *to*. Using Pesetsky's terminology, the first structure is the *to*-object construction, the second the double object construction.

- [1]    a.     Bill gave a book to Sue. [*to*-object construction]  
       b.     Bill gave Sue a book. [double object construction]

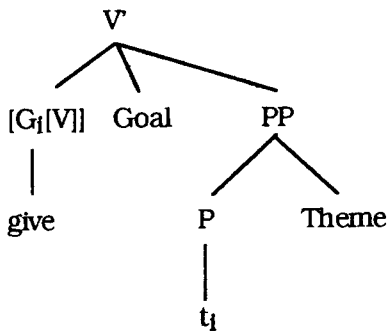
Pesetsky (1995:ch.5) posits the presence of a null morpheme G, which is a null affixal preposition. The D-structure for [1b], the double object construction, has G taking the Theme as complement:

- [2]    Double Object D-structure (Pesetsky 1995:126)



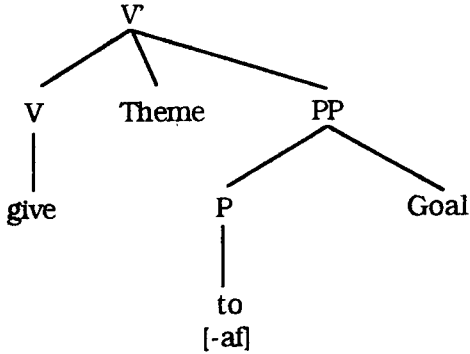
The two DPs are case-marked in the familiar way: Goal is case-marked by virtue of it being a sister of V, and the Theme receives case from G. Since G is, however, marked as being [+affix], it cannot remain in the position for overt prepositions. G is forced to raise and prefix the verb. This results in the double object construction *Bill gave Sue a book*.

[3] Double Object S-structure (Pesetsky 1995:127)



In the case of the *to*-object construction the D-structure and the S-structure are identical. P is realized overtly in the canonical position for prepositions by *to*, which is marked [-affix].

[4] To-Object Construction



Pesetsky adduces three phenomena in support of his claim that the double object construction involves affixation of a null morpheme: case-assignment to the second object, binding asymmetries, and restrictions on nominalizations.

Firstly, Pesetsky claims that the question of case-assignment to the second object is resolved by the fact that, as is the case with any preposition, G assigns case to its complement. Were the second object DP not a sister to a preposition, how would this DP get case? We can presume that it is the first object that gets case from the verb. Positing a zero-headed PP provides the essential mechanism whereby the second object can receive case.

Secondly, Pesetsky claims that the presence of G in the double object construction predicts that there will be binding asymmetries between the two objects. Binding asymmetries of the sort that Barss and Lasnik (1986) observe would be unexpected if the only difference between the two objects were one of linear order. If, on the other hand, the first object asymmetrically c-commands the second object then we expect the first object to bind the second object, but not vice-versa.

- [5]    a.    *I showed John himself in the mirror.*  
       b.    *\*I showed himself John in the mirror.*  
       c.    *I showed John to himself in the mirror.*  
       d.    *\*I showed himself to John in the mirror.*

Thirdly, Pesetsky observes that some restrictions on nominalizations can be accounted for by assuming that the verb in the double object construction is prefixed by a null morpheme.

Pesetsky cites evidence from Kayne (1984) that nominalizations from verbs related to the *to* construction are possible, whereas nominalizations related to the verb in the double object construction are not possible.

- [6]    a.    *Sue gave a book to Mary.*  
               *Sue's gift of a book to Mary*  
       b.    *Sue gave Mary a book.*  
               *\*Sue's gift of Mary (of) a book*
- [7]    a.    *John assigned a hard sonata to Mary.*  
               *John's assignment of a hard sonata to Mary*  
       b.    *John assigned Mary a hard sonata.*  
               *\*John's assignment of Mary (of) a hard sonata*

The relevance of the examples in [6] and [7] has to do with Pesetsky's null G morpheme. He claims that G is not present in the [a] examples, where the head of the PP is realized as *to*. G is, however, present in the [b] examples, as a null prefix on *gave* and *assigned*, and (presumably) on *gift* and *assignment*. Here Pesetsky appeals to a prohibition known as Myers' Generalization that prohibits further derivational affixation on zero-derived words. Pesetsky claims that, while *assign* can be  $\pm G$ , the nominal that is derived from it, *assignment*, can only be  $-G$ , i.e. without the affix G. This means that deverbal nouns such as *assignment* cannot be related to the double object construction, only to the construction with *to*.

Pesetsky claims that his analysis of the double object construction as containing the null morpheme G accounts for the facts of case-assignment, the binding effects of c-command, and the restrictions observed in nominalizations. There are, however, significant problems with Pesetsky's analysis that I have to address.

### 13.2.1 Problems with Pesetsky's analysis of the double object construction

#### 13.2.1.1 Myers' Generalization

In order to support his proposal that the double object construction involves affixation of a zero morpheme, Pesetsky notes that the presence of a zero morpheme is supported by the facts of nominalizations. Pesetsky cites Myers' Generalization.

#### [8] Myers' Generalization (Myers 1984)

Zero-derived words do not permit the affixation of further derivational morphemes.

The essence of Myers' Generalization is that whenever a word such as *support* can be assigned to two syntactic categories, in this case V and N, only one of its categorizations allows affixation of a further derivational morpheme. Thus, *supporty* yields the adjective *supportive*, but the noun, which is zero-derived from the verb, cannot yield *\*supportial* or *\*supportious*. Myers interprets this fact as evidence that

the failure of the zero-derived noun to permit affixation of a further category-changing morpheme is due to the presence of the zero morpheme that derives the noun from the verb, i.e. the N in *[[support]<sub>V</sub>]<sub>N</sub>*.

Pesetsky appeals to Myers' Generalization to support the idea that verbs in the double object construction are prefixed by the null morpheme G. The idea is that affixation of G on the verb has the effect of blocking nominalization of the verb. The corollary is that the noun *assignment* cannot contain G, and can only occur in the *to*-object construction.

The problem here is that Myers' Generalization is not formulated in such a way as to permit Pesetsky's interpretation and application of it to account for the asymmetry of deverbal nominalizations.

Affixation of G to a verb patently does not change the lexical category of the verb; *assign* is a verb whether or not it bears the affix G.

Actually, Pesetsky's argumentation is more than a bit suspect. Having first introduced Myers' Generalization to support an analysis of constructions with a putative CAUS ( for causation) zero morpheme, Pesetsky then, in support of his G morpheme, says:

(T)he unacceptability (of nominalizations related to the double object construction) strongly recalls Myers' Generalization. If a double object configuration necessarily involves an affixal preposition G, we expect affixation of G to inhibit further derivation. Furthermore, if the configurations with *to* do not involve zero affixation to V, we expect no problems with derivational morphology.

Pesetsky (1995:128)

To compound the matter, Pesetsky then says that the data that illustrate the asymmetry of nominalizations 'provide further evidence of the empirical scope of Myers' Generalization and ... further evidence for the existence of zero-derived verbs' (1995:128). This seems to be a circular argument.<sup>1</sup> It looks as though we would have

---

<sup>1</sup> To make matters worse, Pesetzky has already decided that Myers' Generalization is 'flawed' (1995:76). One reason is that the affixes *-able* and *-er* are systematic exceptions to Myers' Generalization.

to look elsewhere to account for the inability of nominalizations to occur in the double object construction. Before leaving the topic, however, I would like to make the point that German nominalizations of affixed verbs are well attested:

- [9]     a.     *Ein Arzt verschreibt Rezepte*  
               'A doctor *ver*-writes prescriptions.'  
               *das Verschreiben von Rezepten*  
               'the *ver*-writing of prescriptions'
- b.     *Das Buch beschreibt die Landschaft*  
               'The book *be*-writes (= describes) the countryside.'  
               *eine Beschreibung der Landschaft*  
               'a *be*-writing (= description) of the countryside'

#### 13.2.1.2 Problems at deep structure

A second problem with Pesetsky's analysis of the Dative Alternation is one that he has not addressed. As pointed out by Emonds (1993), the double object construction and the *to*-object construction are cognitively synonymous, in that they share truth values. The examples are from Emonds (1993:227).

- [10]            *Although Mary sent Herb candy, he never got it.*  
                   *Although Mary sent candy to Herb, he never got it.*

Compare these examples of Dative Alternation with examples of the Locative Alternation, in which the truth values differ .

- [11]            Anomalous: *Although Mary loaded the truck with the books, it was still almost empty.*

Felicitous: *Although Mary loaded the books into the truck, it was still almost empty.*

The point is that the Locative Alternation is a clear case of argument switching; the location direct object in the first sentence becomes the complement of the P in the second sentence. Differing truth values, then, indicate differing D-structures (Anderson 1971).

Since the sentences in [10] share the same truth values, we expect them to have the same D-structure. In Pesetsky's analysis this is not the case. I will shortly review Emonds' analysis of Dative Alternation, in which the double object construction and the *to*-object construction derive from the same D-structure, and therefore conform to the idea that structures that have the same truth values have the same D-structure.

#### 13.2.1.3 The G morpheme

A third problem with Pesetsky's analysis of the Dative Alternation has to do with affixation of his G morpheme. Since the G morpheme must be null (it cannot surface as an overt P: *Mary sent Herb (\*P) candy*) Pesetsky is forced to assume that G becomes a prefix on the verb. While there is nothing in principle that prohibits affixation of a P on a verb (the *be-* prefix in German is one such instance), I am unpersuaded that the Dative Alternation involves affixation of a P.

#### 13.2.1.4 The relationship between Zero G and 'to'

A fourth problem with Pesetsky's analysis has to do with the identity of the head of the PP. Recall that in the double object construction P is realized as G [+affix], whereas in the *to*-object construction P is realized overtly by *to* [-affix]. Putting it another way, when the complement of P is Goal, P is realized as *to*; when the complement of P is Theme, P is realized as G. This sort of mechanism depends rather heavily on stipulation. More importantly, I think Pesetsky has missed the point. He hasn't

established any sort of identity between G and *to*; in fact, his analysis implies the opposite, that there is no identity between null G and the overt P *to*. Compare this with German structures where overt morphology on the verb is a reflex of a preposition.

- [12] a. *Er trat auf den Rasen.*  
           'He stepped on the grass.'  
           *Er schwamm durch den Tunnel.*  
           'He swam through the tunnel.'
- b. *Er betrat den Rasen.*  
           'He *be*-stepped the grass.'  
           *Er durchschwamm den Tunnel.*  
           'He through-swam the tunnel.'

In the [12a] examples PATH is realized by the prepositions *auf* and *durch*; in the [12b] examples PATH is realized by the verbal prefixes *be-* and *durch-*. These prefixes have a systematic relation to the prepositions that they syntactically replace. The affix is an alternative realization of the preposition and as such carries all the semantic features that the preposition carries. The sole respect in which the affix differs from the prefix is that the former is marked [+affix], whereas the latter is marked [-affix].

This is clearly not the case with Pesetsky's G and *to*. When we look at Pesetsky's analysis of the Locative Alternation, we will find a similar problem with the variants of Pesetsky's G, that is G<sub>of</sub> and G<sub>with</sub>. For the moment I will leave Pesetsky's analysis of the Dative Alternation and look at a different analysis, that of Emonds (1993).

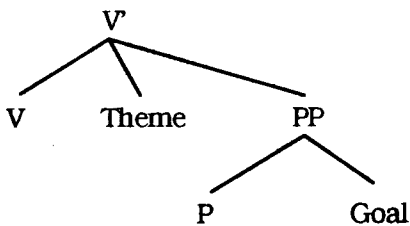
### 13.2.2 Emonds' Analysis of the Dative Alternation

I have provided evidence that Pesetsky's analysis of the English Dative Alternation is flawed. Recall that Pesetsky proposes that the double object construction and the *to*-

object construction have differing D-structures, which is difficult to accommodate with the fact that their truth values are identical. Secondly, if English verbs can take a null morpheme, why do we not see an overt morpheme on the corresponding German verbs, when German verbs do realize P as an overt affix? Thirdly, overt morphology in German shows that there is an identity between the preposition and the affix that is missing in Pesetsky's analysis. Fourthly, Pesetsky's appeal to Myers' Generalization is unconvincing. These difficulties suggest that another analysis is called for. I now turn to Emonds' (1993) analysis of the Dative Alternation.

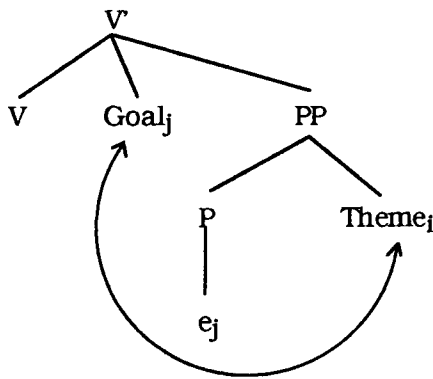
Emonds notes the fact that the truth values of both dative structures are the same, and proposes, therefore, that the two structures share the same D-structure. I give in [13] Emonds' D-structure in simplified form, substituting Goal and Theme for I(ndirect) O(bject) and D(irect) O(bject) respectively.

[13] D-structure for double object and to-object constructions



(Emonds 1993:247)

This structure is the same as Pesetsky's structure for the *to*-object construction in which P is realized as the preposition *to*. This is also precisely what happens in the *to*-object construction in Emonds' analysis. The difference between Pesetsky and Emonds lies in the double object construction. In the double object construction Emonds also posits a zero P, but his zero P remains in situ. In order for the empty P to be properly governed, the Goal DP and the Theme DP change places, resulting in the S-structure in [14].

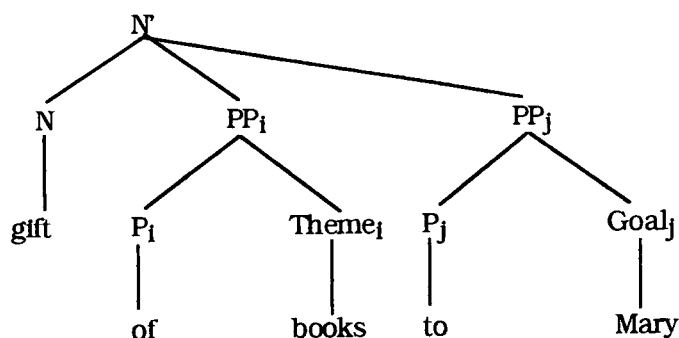
[14] S-structure of the double object construction (Emonds' version)

In D-structure the empty P is co-indexed with the following Goal DP, but remains antecedentless unless Goal and Theme permute. Thus, it is the empty P that forces structure-preserving movement that results in the double object construction. Case is assigned before movement; the Theme receives case from the verb, the Goal receives case from being sister to a preposition.

The simple fact that there is no affixation on the verb in Emonds' proposal immediately makes it preferable to Pesetsky's. We do not need to posit a doubtful null affix and there is no conflict of identity between affix and preposition. Emonds' proposal also has a further advantage. Emonds' structures provide an account for the nominalization restrictions that Pesetsky attempts to account for by a dubious appeal to Myers' Generalization.

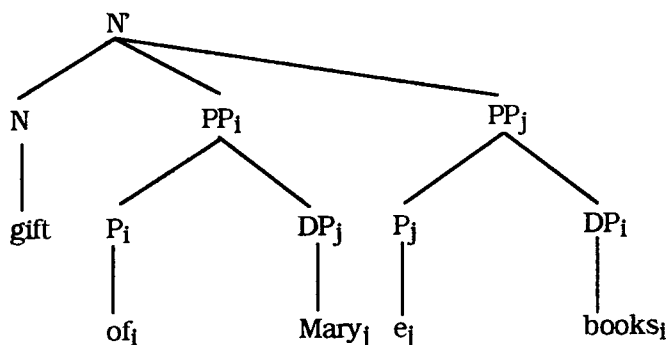
The well known inability of the double object construction to appear with a deverbal noun is expected in Emonds' analysis of the Dative Alternation, although he does not point this out. The tree in [15] gives the admissible *to*-object construction. Here the Theme *books* receives case from the preposition *of*, which is required in order that it can mediate between the noun *gift*, which cannot assign case directly, and the DP bearing the Theme  $\theta$ -role.

[15]



According to Emonds, grammatical P are co-indexed with their deep objects. Suppose now that Theme and Goal permute, as in [16]. When the Theme and Ground permute in a VP, the Ground asymmetrically c-commands the empty  $P_j$ , but in a nominalization construction, c-command fails. Thus, [16] is ungrammatical.<sup>2</sup>

[16]



Here the  $P_j$ , which is co-indexed with the Goal, is null. In order for the null P to be antecedently licensed the Goal and Theme permute. The result is:

[17]

*\*the gift of Mary books*

The version that reads *the gift to Mary of books* I take to be an instance of the *to*-object construction in which the two PPs have permuted to foreground the Goal.

<sup>2</sup> Emonds (p.c.) claims that an empty P, like other empty categories, must be co-indexed with a c-commanding antecedent.

I will postpone discussion of the German Dative Alternation until I have dealt with Pesetsky's analysis of the Locative Alternation, in which he introduces further variants of his null G morpheme, namely  $G_{of}$  and  $G_{with}$ .

### 13.3 The Locative Alternation

#### 13.3.1 Pesetsky's analysis of the Locative Alternation

Pesetsky notes that there are some similarities between the Dative Alternation and the Locative Alternation. The verb *present* allows the Locative Alternation, in which Goal appears as direct object or as complement of *to*, and Theme appears as direct object or as complement of *with*.

- |      |    |                                         |                        |
|------|----|-----------------------------------------|------------------------|
| [18] | a. | <i>Sue presented a medal to Mary.</i>   | [Locative Alternation] |
|      | b. | <i>Sue presented Mary with a medal.</i> | [Locative Alternation] |
|      | c. | <i>*Sue presented Mary a medal.</i>     | [Dative double object] |

Here the first sentence looks to have the same structure as the *to*-object construction, but the starred example shows that *present* does not behave syntactically like a Dative Alternation verb.

When we compare the nominalized forms of true Dative Alternation verbs and a verb like *present*, we find, as noted by Pesetsky, that the nominalized forms of Locative Alternation verbs behave very much like the nominalizations from Dative Alternation verbs.

- |      |    |                                                 |
|------|----|-------------------------------------------------|
| [19] | a. | <i>Sue's gift of a medal to Mary</i>            |
|      | b. | <i>Sue's presentation of a medal to Mary</i>    |
|      | c. | <i>*Sue's gift Mary a medal</i>                 |
|      | d. | <i>*Sue's presentation of Mary with a medal</i> |

The pattern observable in [19] leads Pesetsky to conclude that the restriction on the nominalized forms is due to the presence of a null morpheme affixed to the nouns *gift* and *presentation*, and that affixation of a null morpheme to a derived word is prohibited by Myers' Generalization.

In order to handle the awkward fact that in *Sue presented Mary with a medal* there is a preposition *with* that isn't there in the double object construction, Pesetsky decides that there is a variant of G, which he calls  $G_{with}$ , that subcategorizes for the overt P *with*.  $G_{with}$  affixes in the usual way to the verb. Note that it is not the verb itself that selects overt *with*; the verb selects  $G_{with}$ , and  $G_{with}$  selects *with*.

[20] *Sue presented Mary* [pp [p  $G_{with}$ ] *with a medal* ]

(Pesetsky 1995:146)

Pesetsky is now obliged to account for the difference between verbs that apparently require  $G_{with}$  (*present*, *provide*, *supply*, *entrust*) and Dative Alternation verbs (*give*, *send*, *sell*, *lend*) that apparently require G alone, i.e. the null morpheme that does not subcategorize for an overt P. Pesetsky resorts to an explanation based purely on the putative lexico-semantic differences between the two groups of verbs.

He follows Pinker (1989) who proposes that some verbs, like *give*, denote 'causation of change of possession' as an aspect of their lexical meaning. Other verbs, according to Pinker, do not denote causation of change of possession as part of their lexical meaning, but may undergo a semantic rule that acts directly on argument structure and adds the notion 'change of possession' to their semantics. This has the result that verbs that have this added semantic component allow the double object construction. Such verbs are *throw*, *fling*, *kick*. Pinker further differentiates these verbs from verbs such as *pull*, *push*, *drag*. These latter verbs, which Pinker describes as denoting 'continuous causation of accompanied motion' disallow the double object construction; verbs like *throw*, *fling* denote 'instantaneous causation of ballistic motion' and allow the double object construction.

The problem, as I see it, in Pinker's approach is that he offers no rationale to explain how his 'semantic components' can relate to a particular syntactic phenomenon. How and why does 'instantaneous causation of ballistic motion' allow the double object construction?

Nevertheless Pesetsky adopts Pinker's idea that verbs with differing semantic components may have, as a result, differing syntax. So, according to Pesetsky, the difference between *give*, *assign*, *send*, which allow the Dative Alternation with null G, and *present*, *provide*, which allow the Locative Alternation with null G<sub>with</sub> lies in the different semantics of the two groups of verbs. He proposes that G<sub>with</sub> relates to a class of verbs that have the semantic component 'X gives something to Y that Y deserves, needs, or is worthy of' (1995:146). If the lexical content of the verb necessarily contains the notion of reward or satisfaction of need, then the verb selects G<sub>with</sub>; if these notions are absent or not necessarily present, then the verb selects G. I accept that in *He presented the soldier with a medal* there is an implied notion of reward, and the recipient is presumably deemed worthy of the medal. On the other hand, there is no such semantic component in *He loaded the cart with hay* or *He smeared the wall with paint*.

Pesetsky hasn't finished with G yet. He extends his theory of null morphemes to cover what he calls 'verbs of deprivation'.

- [21] a. *John cleared the dishes from the table.*  
 b. *John cleared the table of dishes.*  
 c. *John's clearance of the dishes from the table.*  
 d. *\*John's clearance of the table of dishes.*

The first two examples illustrate the Locative Alternation, this time with a verb of deprivation. Once again we see that nominalization of the verb is possible only in the case where the Theme is the complement of the preposition *of*. This restriction recalls the similar restriction on nominalizations of verbs in the Dative Alternation, such as

*gift, assignment*, and nominalizations of verbs in the Locative Alternation, such as *provision, presentation*. Pesetsky concludes that structures involving verbs of deprivation also require a null morpheme. When the Goal is the Direct Object of a verb of deprivation, the Theme argument is always realized in a PP headed by *of*. Pesetsky concludes that there must be a null morpheme:  $G_{of}$ .

I will not detail possible arguments against the postulation that there is a  $G_{of}$  morpheme. I showed that there are serious arguments against the morpheme  $G$  in the Dative Alternation. In some respects my proposals are similar to those of Pesetsky; we both recognize that the key to an analysis of both types of structure lies in the prepositions. Prepositions can be overt or null, can appear elsewhere than as head of a PP, and can carry abstract features that interact with other elements in the clause. That much we have in common.

[22] The Locative Alternation (Pesetsky)

[He smeared] [paint] [on the wall]  
[He  $\emptyset$ smeared] [the wall] [Gwith] [with paint]  
↑ \_\_\_\_\_ ↑ ↑ \_\_\_\_\_ ↑

### What has happened to the location preposition *on*?

I think that by now it is apparent that my model allows the parallels to be more easily expressed.

### 13.3.2 My Analysis of the German Dative Double Object construction

In this section I give my analysis of what I will call the Dative Double Object (DDO) construction in German.

[23] Dative Double Object construction

- a. *Er gab seinem Bruder<sub>DAT</sub> ein Buch<sub>ACC</sub>.*  
'He gave his brother a book.'

- b.     *Er gab t<sub>i</sub> ein Buch<sub>ACC</sub> [ (zu) seinem Bruder<sub>DAT</sub> i].*  
      'He gave a book to his brother.'

I take [23a] to be the unmarked word order, in which the bare Dative noun argument precedes the Accusative direct object. I take [23b], with the optional preposition *zu* 'to', to be the marked construction, whereby the Dative argument has right-dislocated to a position after the direct object<sup>3</sup>.

I think it is clear that the DDO is in the Figure/Ground schema. I would have a difficult task if I had to argue that in [23] the book is not a Figure and the brother is not a Ground. Yet the DDO is different in a number of respects. Note that [23b] is not an alternation of [23a] in the sense of the Locative Alternation. The Locative Alternation would have the Ground argument (brother) as direct object of a *be*-prefixed verb, with the Figure argument (book) in a PP headed by *mit* 'with'. Such a construction is ungrammatical, as shown in [24a]. In [24b] I give again the archetypal Locative Alternation for the sake of comparison.

- [24] a.     *\*Er {begab/gab} seinen Bruder<sub>ACC</sub> mit einem Buch<sub>DAT</sub>.*  
          he *be*-gave his brother with a book
- b.     *Er lud das Heu auf den Wagen.*  
      'He loaded the hay on the cart.'  
      *Er belud den Wagen mit Heu.*  
      he *be*-loaded the cart with hay

<sup>3</sup> Latin and Russian have no preposition corresponding to English *to* in dative constructions. The Goal in the DDO construction in Latin and Russian is always a bare Dative.

|     |    |                                                          |         |
|-----|----|----------------------------------------------------------|---------|
| (i) | a. | <i>fratri<sub>DAT</sub> libellum<sub>ACC</sub> dedit</i> | Latin   |
|     |    | brother book gave.3SG                                    |         |
|     | b. | <i>bratu<sub>DAT</sub> knigu<sub>ACC</sub> dal</i>       | Russian |
|     |    | brother book gave.3SG                                    |         |
|     |    | 'He gave his brother a book.'                            |         |

'He loaded the cart with hay.'

I propose that the essential difference between the Locative Alternation, with verbs such as *laden* 'load' and *schmieren* 'smear', and the German DDO construction, with verbs such as *geben* 'give' and *schicken* 'send', has to do with the prepositions involved. I propose that the bare dative in the DDO is the alternative realization of a feature that may also be carried by *zu* 'to'. The preposition *to* in English does not behave like the location prepositions in [25].

- [25] a. *He gave the book {to/\*in/\*on/\*behind/\*under} a friend.*  
 b. *He placed the book {\*to/in/on/behind/under} a box.*

In the German version of [25] there is a further difference between *zu* and the location prepositions; *zu* always requires Dative on its NP complement, whereas the location prepositions require Accusative for a [+PATH] reading.

- [26] a. Er gab das Buch {zu einem<sub>DAT</sub>/  
\*in/\*auf/\*hinter/\*unter einen<sub>ACC</sub>} Freund.  
b. Er legte das Buch {\*zu einem<sub>DAT</sub>/  
in/auf/hinter/unter einen<sub>ACC</sub>} Karton.

I propose that *to* merely identifies the Ground as being the end point of an action. This can be seen in the next examples. In [a] the Ground is conceived as the end point of the motion of the Figure. The Figure may or may not get there. In [b] the location preposition *in* conveys more than that the house is the end point; the house is actually entered.

- [27] a. *He went to the house but didn't get there.*  
b. *\*He went into the house but didn't get there.*

Let us call the Ground when it is the end point of the action the Goal. In [28a] the wall is the Goal. In [28a] *to the wall* conveys the sense that the wall is merely the end point of the action, the action will stop when, or if, the person reaches the wall. The preposition *to* states that the Ground is the destination or Goal. In the other examples in [28] contact with the Ground, or motion over, under, into, etc. the Ground is established by the location prepositions.

- |      |    |                                                     |                 |
|------|----|-----------------------------------------------------|-----------------|
| [28] | a. | <i>He ran to the wall.</i>                          | (Intended) Goal |
|      | b. | <i>He ran {at/into/over/*to} the wall.</i>          | [Ground]        |
|      | c. | <i>He threw stones {at/onto/over/*to} the wall.</i> | [Ground]        |
|      | d. | <i>He scribbled {on/over/*to} the wall.</i>         | [Ground]        |

The table in [29] shows that languages do not always agree with each other whether the Ground is a Goal or not. The Latin dative/P+accusative distinction is mirrored in the other four languages. The shaded cells show the P+accusative construction.

[29]

|                               | Latin  | French | German | English | Russian |
|-------------------------------|--------|--------|--------|---------|---------|
| give something [ _ ] a person | D      | à      | (zu) D | to      | D       |
| place something [ _ ] a box   | in A   | dans   | in A   | in      | v A     |
| go [ _ ] a person             | ad A   | à      | zu D   | to      | k D     |
| [ _ ] a town                  | ad A   | à      | zu D   | to      | v A     |
| [ _ ] Rome                    | (ad) A | à      | nach D | to      | v A     |

All five languages differentiate between Goal and Ground in the contexts of giving and placing. Latin and to a certain extent Russian extend the P+accusative+Ground DP construction to the PP complement of motion verbs, whereas French, German and English regard the PP complement of motion verbs as Goal, not Ground.

I analyse the prepositions *into* and *onto* as being composite prepositions in which *to* has adjoined to the right of *in* and *on*. The preposition *into*, then is a composite of [*to in*]. Translating [*to in*] into the features of the Figure/Ground schema we get [ $\rightarrow$ , +L]. I am claiming, then, that *into* is a composite of a purely directional feature [ $\rightarrow$ ] and a locational feature [+L]. The corollary of this is that the preposition *to* embodies only the feature [ $\rightarrow$ ]. Having said that, we also need to associate [ $\rightarrow$ ] with the right argument, i.e. with the Ground (= Goal) and not with the Figure. I suggest that, in the case of *to*, the feature [ $\rightarrow$ ] is by default associated with the Ground. The difference between *into* and *to* is shown in [30].

- [30] a. *into* = [ $\rightarrow$ , +L]  
 b. *to* = [ $\rightarrow$ ] (+L by default)

The antonym of [ $\rightarrow$ ] (*to*) is naturally enough [ $\leftarrow$ ], which is conveyed by the preposition *from*.

- [31] a. *from out of, from off* = [ $\leftarrow$ ] [+L]  
*from* = [ $\leftarrow$ ] (+L by default)

Compare the [32a] examples containing composite location prepositions with the [32b] examples containing purely directional features.

- [32] a. *He loaded the hay **from off** the cart **into** the sacks.*  
*He dragged the sack **from under** the hedge **onto** the lawn.*  
 b. *He sent the message **from** (\***off**) Tom (\***on**) **to** Ben.*  
*Here is a letter **from** (\***out of**) Tom (\***in**) **to** Ben.*

The fact that *to* is  $[\rightarrow] +L$  (by default) predicts that there can be no feature of the form  $[\rightarrow] -L$ . This in turn means that there can be no preposition with such a feature. In other words there is no preposition associated with the Figure in DDO constructions, in the way that, in locative constructions, *into*  $[\rightarrow, +L]$  has a corresponding preposition *with*  $[\rightarrow, -L]$ . This seems to be borne out.

- [33] a. *They presented a medal to John.*  
*They presented John \*(with) a medal.*
- b. *They gave a medal to John.*  
*They gave John (\*P) a medal.*

In the construction that I call the verbless imperative (5.5.3) both the Ground and the Figure are in PPs, in which the head preposition in each case carries a composite feature. Compare the grammatical verbless imperative in [34a] with an attempt at creating its DDO counterpart in [34b].

- [34] a. ***Into*** *the sacks*      ***with*** *the hay!*  
 $[\rightarrow, +L]$                        $[\rightarrow, -L]$
- b. ***\*To*** *Tom*              ***?[P]*** *the message!*  
 $[\rightarrow] +L$                        $?[\rightarrow] -L$

I have just claimed that the Figure in a DDO construction can never have  $[\rightarrow] -L$  associated with it in the form of a preposition. Recall from 8.3.2 that I claim that features hosted by prepositions can be alternatively realized on the NP sister of the preposition in the form of bare oblique cases. My claim that  $[\rightarrow] -L$  is not a possible configuration and therefore cannot be alternatively realized as an oblique case predicts that the Figure in a DDO can never be in an oblique case in German. Since the Figure in a DDO cannot appear in a PP and cannot be realized by an oblique case, there is only one way that it can be realized; the Figure in a DDO always takes struc-

tural case. In [35] the Goal is realized by the bare Dative, and the Figure by structural Accusative.

- [35] *Jedem<sub>DAT</sub> das Seine<sub>ACC</sub>!*  
 'To each his own.'

One further prediction derives from the unique nature of [  $\rightarrow$  ] being -L by default. In the DDO construction the Figure is always realized by structural case, since there is no direct means (i.e. by means of a value of [ $\pm$ L] ) to differentiate it from the Goal. This entails that the Goal always be discretely identified. The only way that it can be discretely identified is by means of the feature [  $\rightarrow$  ] +L, i.e. the Goal is stuck with the feature [  $\rightarrow$  ] +L. Thus the Goal in a DDO can be in a PP headed by *zu*, or it can be a bare oblique case NP (= *DATIVE*), which is the alternative realization of [  $\rightarrow$  ] +L. The Goal NP cannot, however, take structural case. This means that the Goal NP can never be the direct object of the verb; if it were the direct object, how would the Figure be case-marked and distinguished from the Goal? This predicts: (i) that the Goal cannot, at least in German, be the Nominative subject of a passive verb, (ii) that the Goal cannot be given structural case by means of a grammatical preposition in constructions with deverbal nominalizations.

Firstly, the requirement that the Goal NP be identified other than by structural case, means that the Goal cannot be the subject of a passive sentence [36]. In German passive sentences the Goal argument remains in the Dative case.

- [36] *{Meinem<sub>DAT</sub>/\*mein<sub>ACC</sub>} Bruder wurde ein<sub>NOM</sub> Buch gegeben.*  
 to-my brother became a book given  
 'My brother was given a book.'

Compare this with the facts on passivization of arguments in locative constructions. In [37a] the Ground is in structural Accusative case, the feature [  $\rightarrow$ , +L] having been

realized on the verb in the form of the *be-* prefix. This allows the Ground to be in Nominative case in the passive construction [37 b].

- [37] a. *Er belud den Wagen<sub>ACC</sub> mit Heu.*  
           he *be*-loaded the cart with hay  
           'He loaded the cart with hay.'
- b. *Der Wagen<sub>NOM</sub> wurde mit Heu beladen.*  
           the cart became with hay *be*-loaded  
           'The cart was loaded with hay.'

Secondly, the Goal cannot be case-marked by grammatical *of* after deverbal nominalizations. In the examples in [38] I show grammatical *of* in bold.

- [38] a. *the loading **of** hay onto the cart*  
           *the loading **of** the cart with hay*
- b. *the giving **of** a book to John*  
           *the giving {\*of/to} John {**of**/\*with} a book*

### 13.4 Conclusion

This chapter presented an examination of the English Dative Alternation in comparison with the Locative Alternation.

I showed that Pesetsky's (1995) analysis of the Dative Alternation in which he postulates the presence of a null G. morpheme is flawed in a number of respects. Furthermore, his attempts to unify the Dative Alternation with the Locative Alternation by postulating two variants of his G morpheme that subcategorize for the prepositions *of* and *with* fail to account for the fact that sentences in the Dative Alternation share truth values, whereas sentences in the Locative Alternation do not. Pesetsky's view of the Dative Alternation and the Locative Alternation and my

view differ crucially in what I call the *identity of overt P and zero P*; Pesetsky's zero morphemes do not observe this identity, the morphemes in my analysis do observe identity.

I further showed that the German Dative constructions, which preserve Dative case morphology, differ crucially from the English Dative Alternation. I concluded by proposing that German *zu* and English *to* differ from the locational prepositions with Ground complements, in that the former are associated with a Goal argument that represents a destination or end-point, but not a Ground.

## CHAPTER 14

### THE LOSS OF THE PREFIXES IN ENGLISH

#### 14.1 Introduction

The many changes that the English language has undergone from the late Old English (OE) period until the end of the Middle English (ME) period and the beginnings of the present-day language (NE) have usually been attributed to the gradual loss of declensional and conjugational affixes, which in turn led to a fundamental change in the element order of the sentence. Sapir (1921) and Vennemann (1975) are amongst those writers who have postulated a cyclic development in languages from 'morphology with grammatically functioned word order' to 'word order with few morphological rules' and back again. Vennemann (1975:25) attributes the erosion of morphology to changes in the phonology of the language. The Germanic languages underwent a change from pitch stress to accent stress; furthermore this accent stress became fixed on root syllables (Lord 1966). The strong accent stress on root syllables caused suffixes to be less salient and therefore liable to erosion. The loss of case endings in the nominal or determiner systems eventually led to ambiguities in the distinction between subject and object. In a language without fixed word order subject and object may occur in either order. In order to prevent ambiguity the verb came to be placed after the subject and before the object, resulting in the familiar SVO order. There seems to be widespread acknowledgement that this is the correct view of the development of English from OE through ME to NE, that phonological change brought about changes in the morphological system, which in turn brought about changes in the syntax (Vennemann 1975, Hiltunen 1983:ch.8). For the view that morphological decline came first see Strang (1970:281ff).

#### 14.2 Transition and ambiguity in OE

There are, however, two respects in which the picture that I have just given is inaccurate. Firstly, it is, following Pintzuk (1993), inaccurate to maintain that OE

was strictly SOV. Secondly, as Hiltunen (1983) shows, there was not a simple alternation between prefixes and postverbal particles. It seems that there were considerable elements of structural ambiguity in the grammar of OE in precisely these two areas, i.e. the position of the finite verb, and the relationship between elements which could be construed as prefixes or as particles.

Pintzuk (1993:11) adopts the 'double base hypothesis' which Santorini (1992) proposes for Yiddish. The double base hypothesis claims that IPs are variably head-initial or head-final, and that the highest verb moves to Infl to receive tense. For main clauses there are, then, two structures: one for Infl-medial, and one for Infl-final. 'Vf' indicates the finite verb.

- [1] a. Infl-medial phrase structure  
 [ IP topic<sub>j</sub> [ I Vf<sub>i</sub> ] [ VP ... t<sub>j</sub> ... t<sub>i</sub> ] ] ]
- b. Infl-final phrase structure  
 [ IP ... t<sub>i</sub> [ I Vf<sub>i</sub> ] ]

In the two examples that follow, the finite verb preceded by two heavy constituents is unambiguously in clause-final position:

- [2] a. Infl-final embedded clause  
*swa þa opre ham comon*  
 as the others home came  
 'as the others came home'

(Pintzuk 1993:13)

- b. Infl-final main clause  
*him þær se gionga cyning þæs oferfærelde forwiernan mehte*  
 him there the young king the crossing prevent could  
 '... the young king could prevent him from crossing there.'

(ibid. 22)

The next two examples show the finite verb in Infl-medial position followed by two heavy constituents:

- c. Infl-medial embedded clause

*þæt he wearp þæt sweord onweg*

so-that he threw the sword away

(ibid. 16)

- d. Infl-medial main clause

*eow sceolon deor abitan*

you<sub>ACC</sub> shall beasts devour

'... beasts shall devour you.'

(ibid. 23)

Not unexpectedly, in clauses with fewer constituents the phrase structure is ambiguous:

- [3] *þæt se eorðlica man sceolde geþeon*

so-that the earthly man should prosper

(ibid. 14)

In this case the finite verb follows the subject and precedes the non-finite verb. Pintzuk shows that the surface word order has two possible derivations: (i) the non-finite verb could have raised rightwards over the Infl-final finite verb, or (ii) the finite verb could have moved leftwards from the Infl-final to the Infl-medial position. Pintzuk gives examples in support of (ii) which show that the finite verb can move leftward over V, VP, NP, PP.

The picture is further complicated by a third structure in which the finite verb moves first to clause-medial Infl and then to Comp. Pintzuk proposes that verb movement to Comp is triggered by an operator in SpecCP, which is lexically realized by a wh-phrase, a clause-initial adverb or a topic with negated verbs. I give her example of a clause with a negated verb (Pintzuk 1993:25):

- [4] *ne furðon an ban næfde he mid oðrum*  
 not even one bone not-had he with others  
 'He didn't even have one bone joined to the others.'

This is the V2 structure (in this case comprising topicalized negated object/finite verb/nominal subject), with verb fronting to Comp, which has survived in NE in the limited circumstances of questions and preposed, usually negative constituents.

The picture that emerges is one of ambiguity; OE had two landing sites for the finite verb in both main and subordinate clauses, Infl-final and Infl-medial. In a restricted set of circumstances the verb fronts to Comp. Furthermore, in Infl-final clauses the finite verb could raise leftwards over another constituent, leaving the finite verb not in final position in the clause.

It is clear from my outline of Pintzuk's findings that OE was undergoing a process of change. She shows that OE had two available landing sites for the finite verb even in the oldest period, i.e. before written records began. Thus we cannot attribute the presence of the Infl-medial landing site to the loss of verbal or nominal paradigms, since these paradigms continued to exist for hundreds of years after the Infl-medial landing site became available. What is more likely to have been the case is that attrition of the verbal and nominal affixes brought about by phonological change was not felt to be a loss because the availability of the Infl-medial position meant that the finite verb could be between its subject and complement, so as to make overt case and agreement marking unnecessary<sup>1</sup>.

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<sup>1</sup> We have only been considering the landing site for the finite verb. Pintzuk's double base hypothesis assumes that V is final in VP. It may well be the case that the change of position of the non-finite verb from being final in VP to its modern VP-initial position would have more repercussions in the rest of the grammar than any changes in the surface position of the finite verb. Van Kemenade observes that the change from SOV to SVO was complete by 1200 (Traugott 1972; Canale 1978; Hiltunen 1983), but that it took another two hundred years before the final loss of V<sup>2</sup> (Van Kemenade 1987:175). Curme (1914:34) notes that compound tenses developed earlier in English than in German; the English participles came to be regarded as more verbal than adjectival and assumed a position closer to the auxiliary.

### 14.3 The rise of particle verbs in English

A significant problem in any treatment of the prefixed and partial verbs is deciding when a particular occurrence is a prefixed verb or a phrasal verb. In the case of the bound morphemes such as *a-*, *be-*, *ge-*, there is no problem; these are the old Germanic prefixes. In the case of morphemes which are independent prepositions it is often not clear whether the preposition is really a prefix, a preposition with a complement, a postposition with a complement, or a prepositional adverb. Hiltunen (1983:169) gives the following three attested variants for '...came to him...'. The dots ( ... ) indicate that there may be intervening material.

- [5]    A     *him ... to ... com*  
        B     *com ... to ... him*  
        C     *him ... com ... to*

In the absence of intervening material it is not clear in A whether *to* is a postposition governing *him*, a prefix on the verb *com*, or an independent adverbial. In B it is not clear whether *to* is a preposition governing *him* or a phrasal adverb. It is hardly surprising that there should be such ambiguities, when we remember that it is also not always clear where the finite verb is.

Is A an example of a verb-final clause? It could equally be an example of a prefixed finite verb in Infl-medial position. Is B an example of a finite verb in Infl-medial position, or a verb-final clause in which the PP *to him* has raised rightwards?

There are also many instances where one scribe uses an adverbial in postverbal position, while another scribe, translating the same passage, uses a preverbal adverbial. I give some examples from Hiltunen (1983:143)<sup>2</sup>.

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<sup>2</sup> Hiltunen gives only the OE data, with an occasional Latin phrase. The NE glosses and translations are by RM.

- [6] a. *þa stah he upp 7 forð locode*  
 then rose he up and yonder looked  
*7 he up astah 7 þyder locode*<sup>3</sup>  
 and he up arose and yonder looked  
 'Then he rose up and looked yonder.'
- b. *7 aflymde ut twegen cyningas*  
 and put-to-flight out two kings  
*7 ut aflymde twegen cyneborene mæn*  
 and out put-to-flight two royalborn men  
 'and (he) put to flight two kings.'
- c. *Her Ædwine eorl 7 Morkere eorl ut blupon*  
 here Æ. earl and M. earl out leapt  
*Her ... blupon ut*  
 here ... leapt out  
 'Here Earl A. and Earl M. leapt out.'

Hiltunen's analysis of phrasal verb types in the OE texts can be summarized by means of the following table, in which 'a' stands for 'adverbial'. When the adverbial is before the verb, there are three possibilities:

- [7] aV                      There is no intervening material between adverbial and verb,  
                                  but there may be a space, i.e. adverbial and verb may be written as one or two words.

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<sup>3</sup> The verb in this example, *astah* is a prefixed form [+PATH] of the simple verb *stah* in the previous example. Such cases where one scribe uses a simple verb and another scribe a [+PATH] prefixed verb are common in the OE period (see my Piece No. 4). There is no correlation between the position of the adverbial *up/upp* and whether the verb is prefixed or simple. The verb *aflymde* is prefixed in both [b] examples, whereas *blupon* is a simple verb in both [c] examples.

- |         |                                                           |
|---------|-----------------------------------------------------------|
| a+V     | Adverbial and verb are written as one word.               |
| a ... V | Adverbial and verb are separated by intervening material. |

When the adverbial follows the verb there are two possibilities:

- |         |                                                              |
|---------|--------------------------------------------------------------|
| Va      | There is no intervening material between adverbial and verb. |
| V ... a | Verb and adverbial are separated by intervening material.    |

For most of the OE period the order as given in [7] is the order of greatest occurrence, i.e. aV is the most common, followed by a+V, with V ... a being the least common. There was, then, in the OE period a preference for a preverbal position for adverbials, rather than a postverbal position. By the beginning of the ME period, however, Va and V ... a, which we can write as V(...)a, had become standard (Hiltunen 1983:114).

This change from pre- to postverbal position for adverbials correlates well with the loss in OE of the verb-final position and the establishment of SVO as the basic word order.

### 14.3 From OE to NE

It may be helpful at this point to give an inventory of the changes that English has undergone since the OE period. The following are some of the most significant. The order in which I give them is not meant to be significant:

- [8]
- a. loss of grammatical gender
  - b. loss of case morphology on determiners, attributive adjectives, nouns
  - c. loss of V2 (except in limited contexts), and V-final (Van Kemenade 1987:ch.6)
  - d. loss of main verb raising (Van Kemenade 1987:ch.2; Roberts 1993:ch.3)
  - e. almost complete loss of person and number morphology on the verb
  - f. loss of the productive use of the +PATH verbal prefixes

- g. loss of a distinctive infinitive suffix
- h. loss of subjunctive II, and loss of a paradigm for subjunctive I
- i. loss of the FP (*faire....par*) construction (Roberts 1993:ch.3)
- j. loss of accusative case marking on pronouns
- k. loss of modals that could take a noun complement (Roberts 1993:ch.3)
- l. loss of modals in non-finite forms (Denison 1993:ch.10)
- m. loss of the nominal properties of the infinitive

On the other hand NE has acquired the following:

- n. *do*-support for negatives and interrogatives (Roberts 1993:ch.3)
- o. a closed class of AUX/modal elements generated in I
- p. *to* as an infinitive marker (Denison 1993:ch.8)
- q. the *for NP to V* construction (Roberts 1993:ch.3)
- r. phrasal and prepositional verbs
- s. a fixed S...V...O order in both root and embedded clauses
- t. periphrastic tenses beyond the simple perfect
- u. an infinitive with sentential properties

The plethora of surface changes that English has undergone since the OE period suggest that they are the result of a single fundamental change or a series of connected fundamental changes which has or have had wide repercussions. Many of the changes I list above have to do with the verb and the way the verb interacts with the inflectional category I. This has led Roberts (1993) to propose that English underwent a parametric change which resulted in major changes to the way the verb functions in modern English (NE). In the next section I give an outline of Roberts' hypothesis and his reasons for proposing it.

#### 14.4 Parametric change

Roberts (1993:238ff) traces the history of inversion and interrogative constructions and the development of the NE auxiliary and modal system. In particular he discusses three related developments:

- [9] a. The emergence of the distinction in NE between main verbs on the one hand, and auxiliaries on the other hand, with respect to raising to Agr.
- b. The history of *do*-insertion.
- c. The development of a class of syntactically distinct and morphologically defective modals.

Roberts proposes that the loss of main-verb raising correlates with the (near-) loss of agreement morphemes, and that this loss of morphology ultimately led to a parametric change in the grammar (1993:244).

He distinguishes three notions in his theory of language change: the notions of 'step', Diachronic Reanalysis (DR), and parametric change (1993:158). An example of a 'step' would be the appearance in the language of a new construction, or a significant change in the frequency of a construction. In terms of Chomsky's (1986) distinction between I-language and E-language, the notion of Step is the diachronic relation between E-languages.

The second notion is that of Diachronic Reanalysis. DR occurs when a construction 'has structure S at period P and structure S'≠S at period P' (1993:158). DRs may be thought of as the relations between the E-language of one generation and the I-language of a subsequent generation.

While a Step is an observationally adequate notion of linguistic change, the formulation of a DR is a descriptively adequate account of change in the sense of Chomsky (1964). The third notion is that of parametric change. A shift in the value

of a single parameter may bring about a range of changes in the language. Parametric changes are diachronic relations among I-languages.

In order to account for the developments in [9], i.e. the distinction between NE main verbs and auxiliaries, the appearance of *do*-insertion, and the rise of a class of idiosyncratic modals, Roberts proposes that at some time in the ME period English underwent a parametric change. The attrition of inflectional endings associated with category X resulted in such weakening of inflectional paradigms of category X that the acquirer of the language was no longer able to postulate the existence of bound morphemes of category X. Accordingly Roberts proposes the following parameter (Roberts 1993:244):

[10] For  $X^0$ , is there  $X^{-1}$ ? Yes/no

Roberts' idea is that, in the case of  $X = I$ , the reduction in verbal morphology brought about the loss of verbal paradigms. Acquirers of the language had no means of postulating the existence of  $X^{-1}$ , and consequently set a negative value for [10]. For the special case of  $X = I$ , a negative value of the parameter disallows  $Agr^{-1}$  and  $T^{-1}$ . Roberts assumes that English lost  $Agr^{-1}$  and subsequently  $T^{-1}$  and that this loss had three results. Firstly,  $\Theta$ -assigning verbs could not raise to Agr or T. Secondly, lexical insertion of free morphemes into  $Agr^0$  and  $T^0$  became possible. Thirdly, the loss of  $Agr^{-1}$  could lead to a second specifier position for Agr (or Agr/T), although Roberts concedes that it is problematic to demonstrate this.

Roberts' concern is with the functional categories in I and how the loss of  $[X^{-1}]$  in I produced the changes in the verbal system which I have mentioned. The subject of the present paper is not the Agr/T complex and I will have little more to say about it. My purpose will be to demonstrate that Roberts' insight, the  $X^{-1}$  parameter, can account for other diachronic changes that involve functional categories. Roberts' analysis of the loss of  $Agr^{-1}$  and  $T^{-1}$  and the changes that they gave rise to

suggest that the loss of what we have been calling  $X^{-1}$  may have had repercussions in other parts of the grammar of English.

#### 14.4.1 *The Nature of $X^{-1}$*

Before we investigate the possible loss of  $X^{-1}$  outside of I, it will be as well to clarify what we mean by the notation  $X^{-1}$ . Roberts uses this notation in the first instance to distinguish between two types of elements in I; thus he distinguishes between  $\text{Agr}^0$  and  $\text{Agr}^{-1}$ . He then relates this distinction to the presence or absence of verbal paradigms in the language; an inflectional verbal paradigm is the trigger that an acquirer needs to postulate  $\text{Agr}^{-1}$ . In a sense, then, the elements of the verbal paradigm, i.e. the affixes, are a reflex of the feature in  $\text{Agr}^{-1}$ . It is now natural to assume that these affixes, the bound morphemes of a verbal paradigm, are  $X^{-1}$  elements too. This causes a problem for Roberts' theory. While it is certainly true that the English finite verb has lost its affixes to the extent that we can hardly say that NE has a verbal paradigm, it is not true that all the verb endings have been lost. The NE verb has retained the *-s* and *-ed* endings from the present and weak past indicative paradigms. How are we to account for this? Are these endings not at the  $X^{-1}$  level?

Roberts has some difficulty in accommodating the *-s* and the *-ed* into his theory. If English has lost both  $\text{Agr}^{-1}$  and  $T^{-1}$ , as the theory claims, how can the two inflectional morphemes *-s* and *-ed*, which are exponents of agreement and tense, be inserted? Roberts offers two answers to this question, neither of which is very satisfactory.

His first answer (1993:244) is to say that *-s* and *-ed*, although bound morphemes, are not at the  $X^{-1}$  level, but at the  $X^0$  level. His idea is that all formatives at the  $X^{-1}$  level are bound morphemes, but not all bound morphemes are at the  $X^{-1}$  level. He claims that *-s* and *-ed* differ from bound morphemes at the  $X^{-1}$  level because they are inflections without a paradigm. His second answer to the question is not to consider them as affixes at all, but as clitics 'perhaps' (1993:275).

Both answers lead to an equivalent result: Roberts regards *-s* and *-ed* as functional elements at the  $X^0$  level. This raises a further problem: we typically think of elements at the  $X^0$  level as being words, the heads of maximal projections. Thus it is highly problematic to regard these morphemes as heads of a phrase.

I now wish to propose a different solution to the problem of what to do with *-s* and *-ed*. It is, however, fully in keeping with the spirit of Roberts' theory, and supports the general thrust of his idea.

The essence of the idea that I propose is that what English lost in the early ME period was the syllabic bound morpheme. It is noteworthy that the archetypal verbal and nominal paradigms of Indo-European languages are formed by affixation of a syllable or syllables to a root. NE has lost this type of paradigm. The sole remnants of the earlier paradigms are the *-s*, which makes plural nouns, the genitive *'s*, the 3Sg present tense *-s*, and the past tense *-ed*. It is remarkable that the sole remnants of the multiplicity of OE verbal and nominal syllabic affixes should be non-syllabic */z/* and */d/*<sup>4</sup>. Let us assume that Roberts is correct in reasoning that */z/* and */d/* survive and are productive because they belong to a different level to the syllabic affixes of OE. We want, however, not to have to allot */z/* and */d/* to the category 'word'. If, as Roberts suggests, the syllabic affixes are at the level  $X^{-1}$ , what level is available for the morphemes */z/* and */d/*? The fact that they are segments, i.e. they are less than syllables, suggests that they are at a lower level than syllables, and could therefore be assigned to the level  $X^{-2}$ . Their survival would then be explained by the fact that they are immune to the change of parameter, whereby  $X^{-1}$  became lost. If nothing else, this has the advantage over Roberts' proposal that */z/* and */d/* are at the  $X^0$  level. However, I want to propose that there is another level between word level and affix level, i.e. between  $X^0$  and  $X^{-1}$ , which I will call  $X^{-0}$ . Elements at the  $X^{-0}$  level, I will claim, have a sort of hybrid nature; they are clearly

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<sup>4</sup> I regard those cases where */z/* becomes */ɪz/* as, for instance, */dʃ/* becomes */dʃɪz/* as a phonological variant due to dissimilation. It is clear that the underlying morpheme is non-syllabic.

less than independent words ( $X^0$ ), and yet they are both 'smaller' and 'larger' than affixes ( $X^{-1}$ ).

When English lost its  $X^{-1}$  affixes, functional elements had to appear at another level. As Roberts shows in his analysis of *do*-support, this level could be  $X^0$ . My proposal is that, in addition to  $X^0$ , another level,  $X^{-0}$  was also available. Significantly, the loss of verbal and nominal affixation in English has been accompanied by the appearance of clitics, particularly those associated with INFL. I am referring to such elements as *n't* and the reduction of auxiliaries to a consonantal ending: *I've*, *he's*, *I'm*, *we'd*, *they're*. It is clear that these auxiliary elements belong to the class of 'simple' clitics, in the sense of Zwicky (1977), i.e. they are reduced elements of a word class, which appear in a position relative to the rest of the structure in which the normal rules of the syntax would put them. These elements clearly differ from  $X^0$  elements: they are non-syllabic, hence unstressed, elements which are adjoined to an  $X^0$  element. They also clearly differ from elements at the  $X^{-1}$  level, which are syllabic and which may take word-stress.

Rather than posit two distinct classes of cluster elements, /z/ and /d/ on the one hand and the auxiliary clitics on the other, it would simplify the matter to subsume them under the one level  $X^{-0}$ . We assume a level hierarchy as in [11]:

[11]

|          |              |
|----------|--------------|
| $X^0$    | word         |
| $X^{-0}$ | clitic       |
| $X^{-1}$ | affix        |
| $X^{-2}$ | con. cluster |

When English loses the  $X^{-1}$  affix level, the two levels  $X^{-2}$  and  $X^{-0}$  are contiguous. This allows the  $X^{-2}$  level to be reanalysed as  $X^{-0}$ .

[12]

|          |              |               |                  |                  |
|----------|--------------|---------------|------------------|------------------|
| $X^0$    | word         | $\Rightarrow$ | $X^0$            | word             |
| $X^{-0}$ | clitic       |               | $X^{-0}, X^{-2}$ | clit. / con. cl. |
| $X^{-1}$ |              |               |                  |                  |
| $X^{-2}$ | con. cluster |               |                  |                  |

We have seen so far that in modern English the distinction between main verbs and auxiliary verbs with respect to raising to Agr, the appearance of *do* insertion, and the development of a closed class of morphologically defective modal verbs can be attributed to the loss of  $X^{-1}$ . I want now to show how the loss of  $X^{-1}$  affected other areas of English grammar, namely the prefixes, case morphology, and the prepositional system. We shall see that these three areas of grammar are closely linked.

#### 14.4.2 The loss in English of overt $[L \rightarrow]$

Having discussed in general terms the nature of  $X^{-1}$ , the syllabic bound morpheme, and its loss in modern English, I want now to show how this loss affected the realization of the location features that represent some value of  $[L \rightarrow]$ .

OE had a range of verbal prefixes, such as *a-*, *ge-*, *on-*, *to-*, *be-*, *for-*, *of-*, which correspond to the prefixes of German. These prefixes, as productive elements, were gradually lost in the late OE period. Prefixed verbs which have survived into NE, for instance *believe*, *forgive*, became lexicalized in the OE period, when, presumably, the combination of prefix and simplex verb was no longer felt to be transparent, and the prefixed verb no longer had the literal meaning of its subparts. The OE prefixed verb lost out to a new development, the particle verb.

Right from the first pages of ... (The Ancrene Riwe) one cannot avoid the impression of the prefixes having been swept away almost overnight.

(Hiltunen 1983:92)

Thus the system of productive verbal prefixes was lost in English by the first few years of the thirteenth century.

The general consensus amongst writers is that English lost its grammatical verbal prefixes because the shift of word stress to the stem caused the prefixes to be gradually eroded. The problem with such a view is that it fails to account for German. German, like English, has a strong stem stress, but, unlike English, German has retained its grammatical verbal prefixes. I am not aware of any writer who has offered an explanation for this. Hiltunen, for instance,:

... the decline of the prefixes (in English, RM) can be attributed to an interaction between their multiple meanings and the availability of alternative expressions.

(Hiltunen 1983:92)

This ignores the fact that the German prefixes also have multiple meanings and the fact that German also has alternative expressions, i.e. the particle verbs.

While it is undoubtedly true that the [+PATH] feature on grammatical prefixes was semantically vague, and true that the prefixes were supplanted in English by lexically more specific elements, the particles, Hiltunen's argument of cause and effect is too simplistic. Why, given the same circumstances, did it not occur in German? The explanation that I offer is simply that German has retained its  $X^{-1}$  level for functional categories. More specifically, German has retained its  $X^{-1}$  level where  $X = [+PATH]$ .

I have so far shown in various parts of this study that the  $[L \rightarrow]$  features can be realized overtly in German in five possible ways:

- (i) as a preposition: *an, auf, in, aus*,
- (ii) as a particle: *an, auf, ein, aus*
- (iii) as a prefix on a verb: *ge-, be-, ver-, er-, ent-*
- (iv) as case morphology on a DP: bare Dative and Genitive case
- (v) as the comparative suffix on adjectives: *-er*

The first two of these, prepositions and particles, are words at the  $X^0$  level; the last three are bound morphemes at the  $X^{-1}$  level. It is now time to be more precise

about the word level elements, prepositions and particles, and show how they interact with the location features [L →].

Let me firstly summarise what I have so far said about the German prefixes and prepositions:

(i) The German *be-* prefix is an allomorph of a location preposition: *be-* alternates with the prepositions *an*, *auf*, *in*, *über*.

(ii) The German prefixes and the prepositions that they are allomorphs of have different phonetic forms, i.e. the prefixes do not occur as prepositions, and the prepositions do not occur as prefixes.

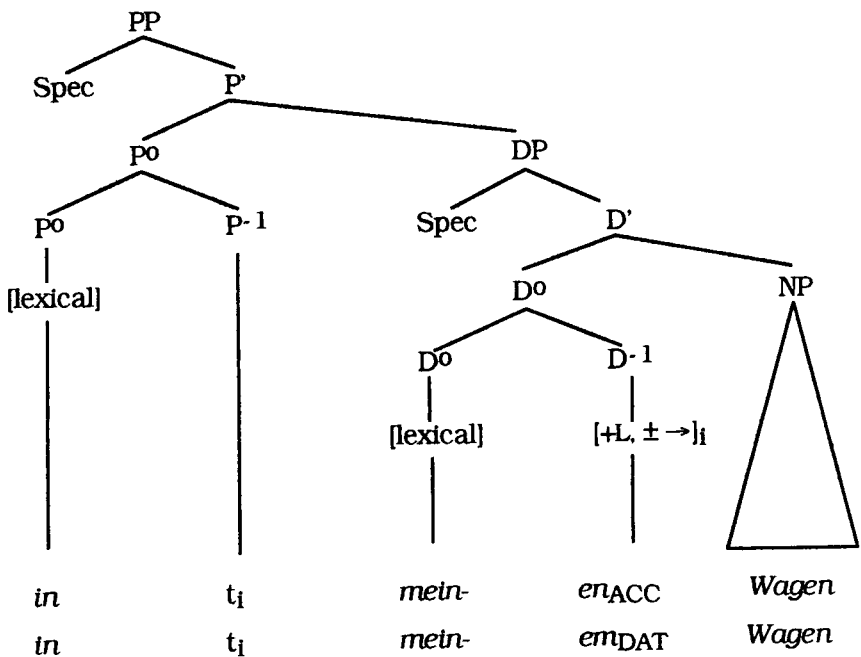
These two facts strongly suggest that there is a fundamental difference between prefixes and prepositions beyond the fact that prefixes are bound morphemes at the  $X^{-1}$  level, and prepositions are free morphemes at the  $X^0$  level. I propose that prefixes and prepositions carry a  $[\pm L \pm \rightarrow]$  feature, but that prepositions contain an extra element that is missing in the prefixes. This extra element is lexical content. Note that in (i) above the *be-* prefix can alternate with a number of prepositions that have differing meanings, i.e. that have different lexical content. This also accounts for the essential difference between Primary and Secondary prefixes. The Primary prefixes are devoid of lexical content; the Secondary prefixes, i.e. the prefixes that have the same phonetic form as their prepositional counterparts, are transparent in meaning because they convey lexical content in addition to the [PATH] feature  $[\pm L \pm \rightarrow]$ .

The difference in meaning between the two PPs in [13] is not conveyed by a difference of preposition, but by a difference in case morphology on the DP.

- [13] a. *Er trat* [pp *in meinen*<sub>ACC</sub> *Wagen*].    Acc = [+L + →]  
           he stepped in my car  
           'He got into my car.'
- b. *Er saß* [pp *in meinem*<sub>DAT</sub> *Wagen*].    Dat = [+L - →]  
           'He was-sitting in my car.'

The structure that I propose for the German PPs in [13] is given in [14].

[14]



The tree in [14] makes the following claims:

- (i) The preposition *in* is a morpheme at the  $X^0$  level, and has lexical content meaning roughly 'inside of'.
- (ii) The  $P^0$  *in* is adjoined to a feature at the  $P^{-1}$  level.
- (iii) This feature may be either  $[+L + \rightarrow]$  signifying motion towards the complement of the preposition, or  $[+L - \rightarrow]$  signifying stationary location.
- (iv) The feature in (iii) is alternatively realized as a case morpheme on the determiner.
- (v) The determiner *mein* is a morpheme at the  $X^0$  level, and has lexical content.
- (vi) The determiner is adjoined to a feature at the  $D^0$  level.
- (vii) The feature  $[+L, + \rightarrow]$  is realized by Accusative case marking on the determiner; the feature  $[+L - \rightarrow]$  is realized as Dative case marking on the determiner.

14.6 Case and Case Morphology

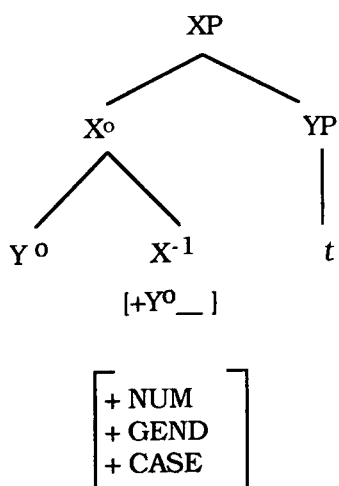
### 14.6.1 The German Determiner and Pronominal System

The Modern German (NHG) paradigms for determiners, quantifiers and attributive adjectives exhibit the distinction between strong and weak affixes which is a peculiarity of the Germanic languages, and which OE had. The strong ending is a bound morpheme which, in contrast to our conception that bound morphemes are associated with a single word class, is mobile and appears on determiners, attributive adjectives and pronouns. The following examples show the occurrence of the masculine nominative singular strong ending **-er**, firstly on the definite article, secondly on the attributive adjective, thirdly on the 3Sg masculine pronoun.

- [15] a. **der** arme Junge  
           'the poor boy'
- b. **amer** Junge  
           'poor boy'
- c. **Er** ist ein **amer** Junge.  
           'He is a poor boy.'

I take the strong and weak endings to be archetypally syllabic affixes at the  $X^{-1}$  level. They are adjoined to a host which is a root and therefore also at the  $X^{-1}$  level. This is an example of Roberts' (1993:44) first type of head-to-head movement, repeated as [16]:

- [16] a. Substitution of  $Y^0$  into  $X^0$ , triggered by  $X^0$ 's feature.  $X^{-1}$  denotes the element in  $X^0$  which triggers incorporation.



In this instance incorporation is triggered by an element at the  $X^{-1}$  level which selects an element of category Y. In the German determiner system the  $D^{-1}$  element, which is the locus of agreement and case features, selects an element Y from the mixed class of determiners, adjectives and pronouns which require to show agreement and case features. These Y elements are left-adjoined to  $X^{-1}$ .

It is a moot point whether the class of German words that shows case and  $\Phi$ -features (determiners, adjectives and pronouns) are  $Y^0$  or  $Y^{-1}$ , or whether both levels can be selected by a host at the  $X^{-1}$  level. It is true that attributive adjectives have the form  $[Y+X]$ , where X is an affix and Y has, in all but a very few cases, the same form as the affixless predicative adjective:

- [17] a. *Er ist ein armer Junge.*  
           'He is a poor boy.'  
       b. *Der Junge ist arm/ \*armer.*  
           'The boy is poor.'

I think, however, that there are good grounds for assuming that case and agreement features are at the  $Y^{-1}$  level. A number of the elements in the determiner/quantifier

class do not have affixless forms: *beide*- 'both', *einig*- 'some', *etlich*- 'quite a few', *jed*-, *jeglich*- 'every', *mehrer*- 'several'. Other elements in this class occur without affix only in limited circumstances: *sämtlich* 'all, complete', *all* 'all', *manch* 'many', *solch* 'such', *welch* 'which, what'.

The structure in [16] allows us to decompose the German determiners and quantifiers and capture the relationship between them and the third person pronouns. I consider the determiner/quantifier/pronoun/attributive adjective class to be composed of two elements at the  $X^{-1}$  level, an affix which realizes  $\Phi$ - and case features, and an element which realizes some other feature. This feature may be a functional element, such as +DEFINITE or +WH, or may be lexical.

Consider first the paradigm of the German definite article in its surface form:

| [18] | singular   |            |            | plural      |
|------|------------|------------|------------|-------------|
|      | masc       | fem        | neut       | all genders |
| NOM  | <i>der</i> | <i>die</i> | <i>das</i> | <i>die</i>  |
| ACC  | <i>den</i> | <i>die</i> | <i>das</i> | <i>die</i>  |
| GEN  | <i>des</i> | <i>der</i> | <i>des</i> | <i>der</i>  |
| DAT  | <i>dem</i> | <i>der</i> | <i>dem</i> | <i>den</i>  |

I analyse the definite article as being comprised of the deictic syllabic element *da*- and a syllabic affix, both of which are elements at the  $X^{-1}$  level:

| [19] | singular     |              |              | plural       |
|------|--------------|--------------|--------------|--------------|
|      | masc         | fem          | neut         | all genders  |
| NOM  | <i>da+er</i> | <i>da+ie</i> | <i>da+es</i> | <i>da+ie</i> |
| ACC  | <i>da+en</i> | <i>da+ie</i> | <i>da+es</i> | <i>da+ie</i> |
| GEN  | <i>da+es</i> | <i>da+er</i> | <i>da+es</i> | <i>da+er</i> |
| DAT  | <i>da+em</i> | <i>da+er</i> | <i>da+em</i> | <i>da+en</i> |

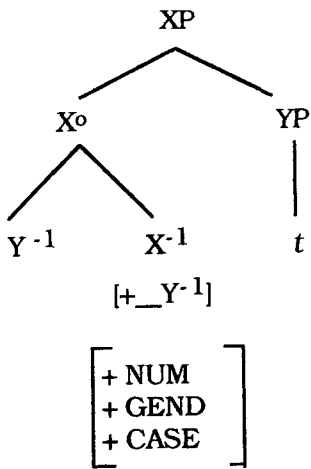
In [19] above, the vowel of *da* disappears everywhere in the paradigm except in the neuter singular Nominative and Accusative, where the vowel of *da* is retained and the vowel of the affix is lost.

Compare the paradigm in [19] with the forms of the third person personal pronouns:

| [20] | singular        |                |                 | plural         |
|------|-----------------|----------------|-----------------|----------------|
|      | masc            | fem            | neut            | all genders    |
| NOM  | <i>er</i>       | <i>sie</i>     | <i>es</i>       | <i>sie</i>     |
| ACC  | <i>ihn</i>      | <i>sie</i>     | <i>es</i>       | <i>sie</i>     |
| GEN  | <i>(seiner)</i> | <i>(ihrer)</i> | <i>(seiner)</i> | <i>(ihrer)</i> |
| DAT  | <i>ihm</i>      | <i>ihr</i>     | <i>ihm</i>      | <i>ihnen</i>   |

In the table above I have bracketed the genitive forms, since they do not properly belong to the pronominal system. If we compare the forms in [20] with those of the *da*+strong ending in [19] we can see that the pronouns are simply the strong endings by themselves, i.e. if the masculine nominative singular definite article is *da+er*, then the pronoun is simply  $\emptyset$ +*er*. By this I mean that the  $X^{-1}$  strong ending can select a zero  $X^{-1}$  element in the same way that it can select the deictic, demonstrative and wh-elements:

[21]



|       |    |   |        |        |               |
|-------|----|---|--------|--------|---------------|
| da-   | er | = | der    | 'the'  | masc nom sing |
| dies- | er | = | dieser | 'this' | masc nom sing |
| jēn-  | er | = | jener  | 'that' | masc nom sing |
| Ø     | er | = | er     | 'he'   | masc nom sing |

14.6.2 The Loss of Case Morphology in English

So far I have equated the loss in English of X<sup>-1</sup> with the loss of paradigms consisting of syllabic morphemes. The clearest case in the history of English where paradigm morphology has been lost is in the NP/DP. I give the OE paradigm for a masculine noun preceded by a determiner and adjective, 'the/this old king':

|      |     | singular |        |          |      | plural |          |
|------|-----|----------|--------|----------|------|--------|----------|
| [22] | NOM | se       | ealda  | cýning   | þa   | ealdan | cýningas |
|      | ACC | þone     | ealdan | cýning   | þa   | ealdan | cýningas |
|      | GEN | þæs      | ealdan | cýninges | þara | ealdra | cýninga  |
|      | DAT | þæm      | ealdan | cýninge  | þæm  | ealdum | cýningum |

The surface forms of the determiner in [22] can be decomposed into the two X<sup>-1</sup> elements given in [23]

[23]

|     | singular      | plural        |
|-----|---------------|---------------|
| NOM | <i>sa+e</i>   | <i>þa+a</i>   |
| ACC | <i>þa+one</i> | <i>þa+a</i>   |
| GEN | <i>þa+es</i>  | <i>þa+ara</i> |
| DAT | <i>þa+em</i>  | <i>þa+em</i>  |

This parallels the Modern German determiner in [18] and [19]. In Modern English the various forms of the determiner *se*, *þone* etc. have been reduced to the single word *the* or *this*. The attributive adjective *eald* has lost all inflection. Only the noun itself retains something of the original paradigm, namely the genitive 's and the plural -s morphemes. In other words NE has lost syllabic inflection, i.e. it has lost the X<sup>-1</sup> level which is necessary for true paradigms. All that has remained, as I have argued above, are the consonantal elements -s and 's, which I claim are elements at the X<sup>-2</sup> level reanalysed as elements at the X<sup>-0</sup> level.

The NE pronominal system has undergone a similar change. Here are the forms of the OE third person pronouns:

[24]

|     | singular    |             |            | plural      |
|-----|-------------|-------------|------------|-------------|
|     | masc        | fem         | neut       | plural      |
| NOM | <i>he</i>   | <i>heo</i>  | <i>hit</i> | <i>hie</i>  |
| ACC | <i>hine</i> | <i>hi</i>   | <i>hit</i> | <i>hie</i>  |
| GEN | <i>his</i>  | <i>hire</i> | <i>his</i> | <i>hira</i> |
| DAT | <i>him</i>  | <i>hire</i> | <i>him</i> | <i>him</i>  |

A comparison between this paradigm of third person pronouns and the paradigm of the definite article/demonstrative 'this', the masculine forms of which are given in [22], shows that the basis of the two paradigms consists in a fusion of two elements.

The third person pronouns comprise an element, which I will represent as *hi-* fused with a syllabic case and agreement morpheme *-e*, *-ene*, *-es*, *-em*, etc.<sup>5</sup>

[25]

|     | masc          | fem           | neut         | plural        |
|-----|---------------|---------------|--------------|---------------|
| NOM | <i>hi+e</i>   | <i>hi+o</i>   | <i>hi+et</i> | <i>hi+e</i>   |
| ACC | <i>hi+ene</i> | <i>hi+Ø</i>   | <i>hi+et</i> | <i>hi+e</i>   |
| GEN | <i>hi+es</i>  | <i>hi+ere</i> | <i>hi+es</i> | <i>hi+era</i> |
| DAT | <i>hi+em</i>  | <i>hi+ere</i> | <i>hi+em</i> | <i>hi+em</i>  |

The forms of the determiner paradigm similarly consist of the fusion of two elements, a deictic element *þa-* (or *sa-* for the masculine nominative) and a similar case and agreement morpheme: *sa+e*, *þa+one*, *þa+æs*, *þa+em*. This is a case of the adjunction of two elements triggered by an  $X^{-1}$  level element providing a slot for another  $X^{-1}$  level element. The resultant forms are heads at the  $X^0$  level.

When English lost the  $X^{-1}$  level, it lost the case and agreement morphemes. The  $X^{-1}$  deictic element that remained became reanalysed as a head at the  $X^0$  level. It might be argued, however, that English has retained case and agreement morphemes in its pronominal system, and that this presents a problem for the hypothesis. It is, of course, true that NE has retained something of the OE pronominal system, namely the *I/me*, *he/him*, *we/us*, *they/them* opposition. In addition there are the respective possessive forms *my/mine*, *his*, *hers*, *its*, *our/ours*, *their/theirs*. However, the existence of such forms in no way undermines the present hypothesis, but rather serves to support it.

My claim is that, while the OE pronominal system is a paradigm of fused  $X^{-1}$  elements, the corresponding NE pronominal forms that I have just quoted are not fusions of two  $X^{-1}$  elements but simple, undecomposable, monosyllabic  $X^0$  heads. In

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<sup>5</sup> Evidence that the pronouns are underlyingly bisyllabic is provided by attested forms for the masculine Accusative in *hiene* and Genitive plural in *hiera* and *hiora*.

other words the modern forms are not analysable as composed of two elements. Note the following points:

- [26]
1. There is significant suppletion: *I/me, she/her, we /us/our*.
  2. There is significant syncretism: *her* (oblique), *her* (possessive); *you* (subject), (oblique).
  3. Such patterns that there are are limited in scope: the -s on *his, hers, its, ours, yours, theirs* is not found on *mine*. The possessive adjective has this -s only on *his* and *its*.

In the transition from OE to NE the pronominal system has undergone three important changes.

- [27]
1. The OE accusative forms were lost and the dative forms took over the function of the accusative.
  2. The genitive forms *his, hire, his, hira* lost the ability to function in (i) partitive constructions and (ii) as the complement of verbs. Instead they became reanalysed as possessive adjectives.
  3. There came about a change in markedness. The OE case system had the nominative as the unmarked case; NE has the oblique forms as the unmarked case.

Points (2) and (3) need a little elaboration. The OE third person pronouns had the genitive forms *his, hire, his, hira* 'of him', 'of her', 'of it', 'of them'. These genitive forms could occur in any context where a genitive NP was required. They could be in a partitive construction (a), or the complement of a verb governing the genitive case (b):

- [28] a. *eal þæt his<sub>GEN</sub> man āðer oððe ettan oððe erian mæg*  
 all that of-it one either or graze or plough may  
 '... all of it that can be either grazed or ploughed.'
- b. *God ūre<sub>GEN</sub> helpe.*  
 God us help  
 "God help us.'

(Brook 1955:88)

These genitive forms of the third person pronouns could also be used as possessive adjectives:

- [29] *his fæder*  
 'his father'

Frequently, however, the definite article is inserted as well:

- [30] *Sette his<sub>GEN</sub> þā swiðran hond him on þæt hēafod*  
 set of-him the right hand to-him on the head  
 'He<sub>i</sub> set his<sub>i</sub> right hand on his<sub>j</sub> head.'

(Brook 1955:88)

This last example clearly shows that *his* was regarded as a genitive-marked pronoun in the pronoun paradigm. When the construction consisting of genitive pronoun and definite article gave way to the construction containing *his* without the article, i.e. the NE form, *his* came to be reanalysed as an indeclinable possessive adjective outside of the pronominal paradigm.

I said above that there was a change in markedness in the pronominal system. The OE case system for pronouns, determiners and nouns had the Nominative as the unmarked case, and the oblique cases as the marked cases. This contrasts with NE where the oblique forms are the unmarked case. In fact I follow

Emonds (1986) in saying that NE does not have morphological case as such, even in the pronominal system. The pronoun system in NE consists of two forms, e.g. *I/me*. The first of these two forms, what was once the nominative case, is now the marked form which is used only in contexts where it is the single subject of a verb or auxiliary/modal. In all other contexts, i.e. the elsewhere or default condition, *me* is used. The distinction between, say *he* and *him* in OE was a distinction between the elements of a paradigm, part of whose function was to show morphological case. Case was shown by the fusion of  $X^{-1}$  level elements. The distinction in NE between *he* and *him* is the distinction between two words of different classes at  $X^0$  level.

#### 14.7 Monosyllabic Heads in English

A striking feature of the development of English is the fact that the loss of paradigms has led to the establishment of closed classes of monosyllabic heads. Thus the members of the class of pronouns, the class of possessives, the class of INFL-related words, and the class of locational adverbials are all monosyllables:

|      |                  |                                                                         |              |                       |             |               |              |
|------|------------------|-------------------------------------------------------------------------|--------------|-----------------------|-------------|---------------|--------------|
| [31] | Pronouns:        | <i>I</i>                                                                | <i>you</i>   | <i>he, she, it</i>    | <i>we</i>   | <i>they</i>   | <i>one</i>   |
|      |                  | <i>me</i>                                                               | <i>you</i>   | <i>him, her, it</i>   | <i>us</i>   | <i>them</i>   | <i>one</i>   |
|      | Possessives:     | <i>my</i>                                                               | <i>your</i>  | <i>his, her, its</i>  | <i>our</i>  | <i>their</i>  | <i>one's</i> |
|      |                  | <i>mine</i>                                                             | <i>yours</i> | <i>his, hers, its</i> | <i>ours</i> | <i>theirs</i> | $\emptyset$  |
|      | INFL-related:    | <i>do, does, did</i>                                                    |              |                       |             |               |              |
|      |                  | <i>have, has, had</i>                                                   |              |                       |             |               |              |
|      |                  | <i>am, is, are, was, were,</i>                                          |              |                       |             |               |              |
|      |                  | <i>will, would, shall, should, can, could, may, might, must, ought,</i> |              |                       |             |               |              |
|      |                  | <i>dare</i>                                                             |              |                       |             |               |              |
|      | Loc. adverbials: | <i>where, here, there</i> (cf. <i>whither, hither, thither</i> )        |              |                       |             |               |              |

The class of determiner/quantifiers contains some polysyllabic members, but even so there is a significant number of monosyllables:

Det/quantifiers: *the, this, these, that, those, such, both, all, some, each, few,*

*which, what, much, most*

(Polysyllables: *every, several, many*)

It seems to be the case that English has developed a constraint on the membership of INFL and D such that items which may be inserted under these nodes must be monosyllabic. If this is, indeed, the case it would explain why main verbs cannot raise to INFL. There are no constraints on the number of syllables a member of the category of main verbs can have. Although there are monosyllabic main verbs, they do not belong to a category which consists solely of monosyllabic members.

#### 14.8 The $X^{-0}$ Level

I have already, albeit briefly, mentioned the consonantal elements which are the remnants of the OE verbal and noun paradigms: noun plural -s, 3S present tense -s, possessive 's and past tense -ed. I suggested that these remnants of full inflection at the  $X^{-1}$  level be assigned to the level  $X^{-0}$ . In a sense, then, these consonantal elements rise in status to the  $X^{-0}$  level. I now want to suggest that there are elements which can drop a level. These are the clitic elements such as the reduced forms of auxiliaries, such as 've, 'd, 're, 'll. These reduced auxiliaries derive from the full forms, which are at the  $X^0$  level. They drop from level  $X^0$  to level  $X^{-0}$ . Note that all the reduced auxiliary forms are consonantal, just as the reduced inflections are consonantal. The hybrid level  $X^{-0}$  contains, then, two types of consonantal elements: reduced inflections which rise from the  $X^{-1}$  level, and reduced auxiliaries which drop from the  $X^0$  level.

#### 14.9 Conclusion

I have shown that Old English (OE) was in a state of change. OE had two landing sites for the finite verb in both main and subordinate clauses, the finite verb could also raise to Comp, and in Infl-final clauses could raise leftwards over another constituent. The prefixal system was in competition with the particle system. Ambiguities

in the position of the finite verb meant that a P was often ambiguous between being a prefix, a postposition, or a particle. When eventually the word order, apart from residual V<sup>2</sup>, settled down to SVO, the particles won out over the prefixes.

I have suggested that the loss of the prefixes and the rise of the particles was just one effect of a parametric change (Roberts 1993), whereby English lost in large measure the X<sup>-1</sup> level, i.e. the bound syllabic morpheme as the realization of abstract features. In addition to the loss of the prefixes, English has lost virtually all of its DP morphology. OE determiners and pronouns were bisyllabic heads comprising two X<sup>-1</sup> morphemes, as are the Modern German determiners and quantifiers. The modern English determiners and pronouns are unanalysed monosyllabic words at the X<sup>-1</sup> level. I further suggested that the consonantal morphemes, such as plural -s, genitive 's, and third person singular -s on verbs are not at the level X<sup>-1</sup> but at the clitic level X<sup>-0</sup>.

### Postscript

This study of the German (inseparable) prefixes has shown that the [ $\pm$ LOC] relationship obtaining between the Figure and the Ground, which I have argued is imposed on language, provides the means to establish the basic underlying templates that give rise to the multifarious prefixed verbs in German. We have seen that it is a form of this locative feature that surfaces as prefix, as preposition, as particle, as case morphology on DPs, and as [COMPARATIVE] on adjectives. Thus, it turns out that a large number of hitherto apparently dissociated phenomena in the grammar of German are in fact manifestations of a variation on one and the same underlying feature, i.e. the feature ( $\rightarrow$ ) in [1], according to how F and G in [1] are realized.

[1]            (.....)     $F \rightarrow (G)$

The difference between German and English with respect to [1] is accounted for by the parameter in [2].

[2]    For  $X^0 = (\rightarrow)$ , is there  $X^{-1}$ ?

German: yes

English: no

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