ON THE INTERFACE OF MORPHOLOGY AND SYNTAX:

EVIDENCE FROM VERB-PARTICLE COMBINATIONS

IN AFRIKAANS

by

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Chapter   1

INTRODUCTION

1.1   General

The first formulation of what has come to be known as the
Lexicalist Hypothesis appeared in Chomsky's (1970) article
"Remarks on nominalization". Since then the greater part of
the literature on word formation in generative grammar has
either argued for, or taken as a point of departure, the
position that there is a theoretically significant difference
between word structure on the one hand and phrase structure
on the other hand. This position is formulated as follows by
Selkirk (1982:2):

> "... aside from the category Word itself, the
> categories involved in word structure are dis-
> tinct from those of syntactic structure and,
> moreover, ... the two types of structure com-
> bine these categories in significantly diffe-
> rent ways."

Acceptance of this position has given rise to the proposal of
so-called lexicalist theories of morphology/word formation. A
first concern of these theories has been to show that the pro-
perties of words must be accounted for in terms of a set of
elements, rules and constraints that are fundamentally diffe-
rent from the elements, rules and constraints in terms of
which the properties of phrases and sentences are accounted
for.[1]   A second concern of these theories has been to charac-
terize the nature of the relationship between a theory of
morphology on the one hand and theories of syntax, phonology,
and semantics on the other hand.[2]

The major aim of this study is to present an argument to the
effect that the way in which the relationship between morpho-

logy and syntax is construed on lexicalist theories of mor-
phology is incorrect. More specifically it will be argued
that, in order to account for the properties of verb-particle
combinations in Afrikaans, lexicalist hypotheses such as the
Lexical Integrity Hypothesis and the No Phrase Constraint;
and the hypothesis that rules of morphology form part of a
separate, lexical, component of the grammar, must be either
relaxed or relinquished. These hypotheses, the content of
which will be elucidated in par. 1.2 immediately below, are
central to the lexicalist construal of the relationship
between morphology and syntax.[3]

The argument will be developed as follows. First, in chap-
ter 2, it will be shown that verb-particle combinations in
Afrikaans share many of the properties of the corresponding
constructions in English and Dutch. Then, in chapter 3,
three lexicalist analyses of verb-particle combinations in
English and Dutch, viz. those proposed by Simpson (1983 a, b),
Baayen (1986), and Selkirk (1982) respectively, will be dis-
cussed critically. The aim of the discussion will be to
identify problematic aspects of these analyses and also to
examine the major general linguistic assumptions under-
lying each analysis. The aim of chapter 4 is analogous to
that of chapter 3. The analyses considered are those pro-
posed by Van Riemsdijk (1978) and Stowell (1981) for verb-
particle combinations in Dutch and English respectively.
These analyses may be termed nonlexicalist by virtue of the
fact that neither Van Riemsdijk nor Stowell presents an ex-
plicit lexicalist theory of morphology. Chapter 5 will con-
sider the import which the shortcomings of the analyses dis-
cussed in chapters 3 and 4 have for a lexicalist construal
of the relationship between morphology and syntax. It will
be argued that some of the major empirical and conceptual
shortcomings of the analyses discussed in chapter 3 are at-
tributable to the fact that these analyses are couched within
a lexicalist framework incorporating the constraints men-
tioned above. In addition, it will be argued that the major
shortcomings of Van Riemsdijk's and Stowell's analyses too

stem from their (explicit or implicit) acceptance of some of
the lexicalist hypotheses in question.

Chapter 6 will focus on alternative views of the relationship
between morphology and syntax that have been proposed recent-
ly by, e.g., Fabb (1984), Baker (1985), Sproat (1985, 1987),
and Lieber (1984 , to appear). One of these in particular,
viz. that argued for by Sproat and Lieber, will be considered
critically. On this view, a theory of grammar is assumed not
to include an independent theory of morphology. It is as-
sumed that the properties of words may be accounted for in
terms of the same elements, rules, and constraints that are
required to account for the properties of phrases and senten-
ces. The term theory of syntactic word formation will be used
to refer to versions of a theory of word formation which assume
a single theory of morphosyntactic structure. The empirical and
conceptual consequences of accepting a theory of syntactic
word formation such as that outlined in (Sproat 1985, 1987)
and (Lieber to appear) will be systematically explored with
reference to an analysis of verb-particle combinations in
Afrikaans. The main findings of the study will be summna-
rized in the concluding chapter, chapter 7.

It has to be pointed out right at the outset that both the
analysis of Afrikaans verb-particle combinations presented
in chapter 6 and the discussion of a theory of syntactic
word formation as a possible alternative to lexicalist theo-
ries of morphology are highly exploratory in nature. The aim
is to identify some of the potentially problematic conse-
quences of accepting a theory of syntactic word formation
such as that outlined by Sproat and Lieber, with a view to
indicating what the issues are that will have to be address-
ed by further research. The aim is not to propose solutions
to the problems raised.

The choice of verb-particle combinations as the phenomenon
to be focused on in this study may require some explanation..
My interest in this phenomenon was sparked during the
writing of a paper dealing with possible constraints on the

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occurrence of affixes in Afrikaans synthetic compounds. It
appeared that affixes which do not occur productively in
synthetic compounds in Afrikaans can often occur in synthe-
tic compounds containing verb-particle combinations.[4] The
question arose whether verb-particle combinations should be
analyzed as (morpho)syntactically complex verbs or as phrases.
It became clear that, by virtue of their curious array of
morphological, syntactic, phonological, and semantic proper-
ties, verb-particle combinations constitute an ideal testing
ground for alternative conceptions of the relationship between
the various components of a grammar.

Before proceeding to an outline of the lexicalist construal
of the relationship between morphology and syntax, a few ter-
minological points require clarification. The term syntacti-
cally complex will be used as shorthand for "having morpho-
syntactic structure". The term verb-particle combination will
be used to refer to syntactically complex verbal forms such as
those in (1). The " + " symbol indicates the constituent
boundary in the Afrikaans forms, which are written as one word
orthographically.

(1)   *look over*   (Afrikaans :   *deur + kyk*)
         count out   (Afrikaans :   *uit + tel*)
         throw up   (Afrikaans :   *op + gooi*)

What sets the forms in (1) apart from ordinary compound and
derived verbs on the one hand, and from syntactic verb phrases
on the other hand, is the fact that they exhibit properties of
both kinds of entities. The properties of verb-particle com-
binations will be discussed and illustrated in chapter 2 below.

And, finally, unless otherwise specified, the terms morphology
and morphological component will be used to refer to that part
of a theory of grammar which is concerned with accounting for
the morphosyntactic form of complex words, eschewing for the
time being questions such as whether or not morphology is dis-

tinct from syntax, whether morphology is part of the lexicon
or not, and whether or not the properties of all syntacti-
cally complex words are accounted for by rules and principles
of the morphological component. The term word formation will
be used from time to time as a synonym for morphology.

Let us turn now to a brief overview of the major tenets con-
stituting the lexicalist construal of the relationship between
morphology and syntax.

1.2   The lexicalist construal of the relationship between
         syntax and morphology

This section will be concerned with three hypotheses which,
taken together, constitute what I will refer to as the lexi-
calist construal of the relationship between morphology and
syntax. The relevant hypotheses are the Lexical Integrity
Hypothesis, the No Phrase Constraint, and what Botha (1984:
137).has called the Lexical Component Hypothesis.[5]

The hypothesis about the relationship between morphology and
syntax to which I shall be referring as the Lexical Integrity
Hypothesis is but one of many different, more or less re-
strictive, versions of the lexicalist position concerning the
extent to which syntactic rules and principles may be allowed
to contribute and/or be sensitive to the information encoded
in the grammatical representations assigned to words. The
expression "syntactic rules and principles" must be interpre-
ted in its widest sense as referring to all rules responsible
for deriving representations at the various syntactic levels
of the grammar, i.e. D-structure, S-structure, and LF, and
all principles and constraints which play a role in determi-
ning the well-formedness of representations at the various
syntactic levels. Chomsky's (1970) hypothesis concerning the
formation of derived nominals in English, which has come to
be known as the Lexicalist Hypothesis, represents not only
the first but also the weakest of the various formulations of
this position. The formulation of the Lexicalist Hypothesis

in (2) is that of Botha (1984:136).[6]

(2)   Lexicalist Hypothesis

        Derived nominals are not formed by means
        of syntactic transformations' but are pre-
        sent in deep structure.

A somewhat stronger version of the Lexicalist Hypothesis,
which Botha (1984:136) calls the Elaborated Lexicalist
Hypothesis, has been taken as a point of departure by the
majority of generative grammarians working within the frame-
work of what came to be known as lexicalist morphology in
the decade from 1972 to (roughly) 1982. The Elaborated
Lexicalist Hypothesis is formulated as follows by Selkirk
(1982:1):[7]

(3)   Elaborated Lexicalist Hypothesis

        Words with derivational morphology [i.e.
        derived words --- CleR] and compound words
        are not formed by syntactic transformation.

A significant subset of lexicalist morphologists have
argued, however, that inflected words are not formed by syn-
tactic transformation either.[8] The version of the Lexicalist
Hypothesis which these morphologists accept is formulated as
the Strong Lexicalist Hypothesis by Lapointe (1978:3).

(4)   Strong Lexicalist Hypothesis

        Syntactic transformations never have to be
        allowed to perform morphological operations.

Inflection is not the only morphological operation about the
(non)syntactic status of which there is disagreement among
generative grammarians. Since 1982 a number of grammarians,
among them Zubizaretta (1982), Fabb (1984), and Baker (1985),
have argued that certain subsets of complex words other than

inflected words must be created in the syntax. Details of
their proposals are irrelevant at this point, but will be-
come relevant in chapter 6.

Apart from the debate about exactly what kinds of morphologi-
cal operations fall within the scope of a constraint such as
(4), two other related areas of disagreement about the scope
of the constraint exist. A first area of disagreement con-
cerns the question of what exactly is subsumed by the notion
'to perform a morphological operation'. A second area of dis-
agreement concerns the question of whether only syntactic
transformations should be barred from performing morphological
operations.

As regards the first area of disagreement, on a weak interpre-
tation of (4), the prohibition against the performing of mor-
phological operations is understood to be a prohibition against
the modification of word structure by syntactic transformations.
That is, on such a weak interpretation of (4), syntactic trans-
formations are allowed neither to add morphemes to, nor to
move or delete morphemes from a lexical category. This is the
interpretation explicitly adopted by, e.g., Bresnan (1982:54),
Selkirk (1982:70), and Simpson (1983a:1). This weak interpre-
tation of (4) is expressed as follows by Selkirk:

(5)   Lexical Integrity Hypothesis (weak version)

        No deletion or movement transformation may
        involve categories of both W-structure [i.e.
        word structure --- CleR] and S-structure
        [i.e. sentence structure --- CleR].

On this weak variant of (4), syntactic transformations are,
for instance, prohibited from performing word building opera-
tions such as compounding, derivation and inflection (if the
latter is considered to be a word building operation), or de-
letion operations such as the gapping of parts of words.[9]

A stronger variant of (4) is proposed by Simpson (1983a:2).
On Simpson's strong variant of (4), syntactic rules are pre-
vented not only from modifying word structure, but also from
referring to any aspect of the internal structure of words,
i.e. from analyzing word-internal structure. This stronger
variant of (4) which, according to Simpson, represents the
strongest version of the Lexical Integrity Hypothesis may be
represented as follows:

(6)   Lexical Integrity Hypothesis (stronger version)

        Syntactic rules can neither analyze nor change
        word structure.

Similarly strong variants of (4) are assumed, e.g., by Brame
(1978:22) whose Spelling Prohibition states that "transform-
ations cannot spell out or alter morphological material", by
Lapointe (1980:66) whose Generalized Lexicalist Hypothesis
prevents syntactic rules from referring to a morphological
category or feature, and by Thomas Flinders (1983:82-83) who
holds that "rules accessing information about the internal
structure of words cannot be formulated (or can be formu-
lated only at great cost to the grammar)".

The stronger version (6) of the Lexical Integrity Hypothe-
sis not only blocks the movement or deletion of morphemes
which form part of complex words, it also rules out, e.g.,
reference to features associated with parts of words,[10] the
establishment of anaphoric relations between parts of com-
plex words and elements of syntactic structure, and apposi-
tive modification of parts of complex words.[11]   Thus, any
grammarian who accepts the strong version of the Lexical
Integrity Hypothesis in (6), by implication assumes a
highly restrictive interpretation of the notion 'to perform a
morphological operation' in (4). On this interpretation,
performing a morphological operation includes both the modi-
fication of the morphosyntactic structure of a lexical cate-
gory and reference to or modification of any information (e.g.

features) associated with the constituents of a lexical cate-
gory.

As indicated above, a second area of disagreement about the
scope of the Strong Lexicalist Hypothesis (4) concerns the
question of whether only syntactic transformations should be
barred from performing morphological operations. As is clear
from the discussion above, those grammarians who accept a
strong version of the Lexical Integrity Hypothesis, also ac-
cept a stronger version of the Lexicalist Hypothesis than the
version given in (4): a version on which not only syntactic
transformation, but all syntactic rules are prevented from
referring to and/or modifying any aspect of word-internal
structure.[12]   On this stronger version of (4), not only syn-
tactic transformations, but also, e.g., the rules of the cate-
gorial component, the rule(s) of agreement, the coindexing
rules relevant to Case theory, θ-theory, binding theory, etc.,
are prevented from analyzing and/or modifying word structure.
This more restrictive interpretation of the Strong Lexicalist
Hypothesis (4) is reflected in the formulation of the strong
version of the Lexical Integrity Hypothesis in (6) above,
where the expression "syntactic transformations" has been re-
placed by the expression "syntactic rules". Thus, the strong
version (6) of the Lexical Integrity Hypothesis could be con-
sidered to be the most restrictive version of the Lexicalist
Hypothesis. Except where explicitly otherwise indicated, all
further reference to the Lexical Integrity Hypothesis will be
to the version presented in (6).

It must be emphasized once again that not all morphologists
who subscribe to a version of the Lexicalist Hypothesis, sub-
scribe to the strongest interpretation of this hypothesis as
represented by the Lexical Integrity Hypothesis (6). Nor can
all generative grammarians who accept a version of the Lexical
Integrity Hypothesis be described as lexicalist morphologists.
Some version of the Lexical Integrity Hypothesis has also been
accepted by grammarians who are not concerned with formulating
an explicit lexicalist theory of morphology. We shall return

to this point in chapter 5 below.

As is clear from the discussion above, the Lexical Integrity
Hypothesis excludes syntactic rules from the class of rules
which may create, modify, or refer to word structure. The
second of the three hypotheses constituting the lexicalist
construal of the relationship between morphology and syntax,
viz. the so-called No Phrase Constraint, excludes syntactic
rules from the class of rules that form the bases to which
word formation rules (WFRs) may apply. This constraint is
formulated as follows by Botha (1980:82):

(7)   No Phrase Constraint

         Morphologically complex words cannot be
         formed (by WFRs) on the basis of syntactic
         phrases.

The No Phrase Constraint, in one form or another, has been
explicitly adopted or implicitly assumed as a constraint on
word formation rules by lexicalist morphologists such as
Aronoff (1976:21), Roeper and Siegel (1978:202), Allen (1978:
12 n. 3, 253), Lapointe (1980:53, 67-68), Meijs (1980:281),
Lieber (1981, 1983), Anderson (1982:594), Bresnan (1982:30),
Selkirk (1982:8), Strauss (1982:24), Van Santen (1984:27, 97),
and Walsh (1983:141).[13] The validity of some version of the
No Phrase Constraint is also accepted by a number of nonlexi-
calist morphologists, as will appear immediately below.

There is considerable disagreement among morphologists who
subscribe to some version of (7) about (i) the generality of
the No Phrase Constraint, and (ii) the interpretation of the
notion 'syntactic phrases'. As regards the first area of
disagreement, note for instance that Kiparsky (1982: 10),
whose theory of morphology does not allow syntactic phrases
to serve as bases of word formation rules, does allow for
"limited recursion from phrase-level syntax back into morpho-
logy". Williams (1981:250) allows exceptional "headless
rules" to form derived words on the basis of syntactic
phrases, but calls such headless rules "sporadic" (p. 247)

and "marked" (p. 257). Similarly, Toman (1985:411-412) proposes a Bar-value Convention in terms of which the unmarked bar level of the nonhead constituent of compounds in German is X^0. By this convention constituents with a non-null bar level specification, i.e. syntactic phrases, are possible in the nonhead position of compounds as well, but their occurrence is marked.

It should also be mentioned that Aronoff has qualified his position on the No Phrase Constraint to some extent in a later work. Thus, Aronoff (1983:370) would relax the constraint so as to allow word formation rules to refer to the "restricted kind" of phrasal information already present in the subcategorization frames of lexical entries. According to Aronoff (1983:370) "the restriction against including phrasal material in words must be interpreted so as to exclude only material outside the subcategorization frame of a given word". Also, Baker adds a proviso to his (1985:87) assumption that "it is a natural principle of morphology to block syntactic phrases inside a word". In a footnote he (1985:96 n. 24) grants that the No Phrase Constraint "may be subject to linguistic variation" so as to allow for the fact that phrasal compounds occur quite freely in languages such as Dutch and German. And, finally, Lieber (to appear: 5) claims that compound structures "in which the initial constituent is phrasal" may be freely generated in English.

As regards the second area of disagreement, there is difference of opinion as to whether all syntactic phrases, i.e. $X^{1<}$ in $\bar{X}$ notation[14], or only maximal projections, i.e. X^{max}, should be prohibited from appearing as part of word structure. Thus Fabb (1984:143) would bar only phrasal constituents containing a specifier from appearing in complex words. That is, according to Fabb, the content of the notion 'syntactic phrase' must be defined as 'constituent containing a specifier' or '$X^{n<}$', where n represents the bar level at which specifiers are introduced. In a similar vein, Sproat (1985: 198ff) argues that the category level of the nominal sister

of V in synthetic compounds in English must be higher than
X^0, but cannot be X^{max}. Specifically, he (1985:203) pro-
poses that the relevant nominal constituent should be of the
category level X^1.

The morphologists mentioned above are not the first ones who
have either allowed for systematic exceptions to the No Phrase
Constraint (7) or systematically restricted the class of syn-
tactic phrases to which the constraint applies. Before them
morphologists such as Booij (1977:44), Carroll (1979:863),
Keenan (1980:205), Botha (1980:140ff), Savini (1983:par.
3.7.2), Hoeksema (1984:147), Hoekstra (1984:264), Kintzel
(1984:59-62), and Sadock (1985:433) have argued on the basis
of evidence from different languages that the No Phrase Con-
straint cannot be maintained in its full generality.[15]

The third of the three hypotheses which are taken to consti-
tute the lexicalist construal of the relationship between
morphology and syntax, viz. the Lexical Component Hypothe-
sis, is formulated as follows by Botha (1984:137):

(8)   Lexical Component Hypothesis

         The rules of word structure form part of a
         separate component: the lexical component
         or lexicon.

As observed by Sproat (1987:185), acceptance of the hypothesis
(8) has been virtually a hallmark of generative morphology
since the publication of Chomsky's (1970) "Remarks on nomina-
lization". Arguments for the Lexical Component Hypothesis
have been based largely on supposed differences between rules
of word structure and rules of phrase structure as regards
their productivity and the predictability of the syntactic,
phonological, and semantic properties of the forms generated.[16]
Rules of word structure are taken to be characteristically
limited in productivity in contrast to phrase structure rules
which are fully productive, and the forms generated by the
former rules are claimed to be more likely to have unpredic-

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table properties than those generated by the phrase structure
rules.[17]

Most lexicalist morphologists simply accept the hypothesis
(8) without providing any support for it, and concentrate
instead on developing theories of what the lexical component
should look like. On the most elaborate of these theories,
such as, e.g., the theory of Lexical Phonology and Morphology,
the lexicon is taken to be a formally distinct, fully inde-
pendent "word grammar" which, like a sentence grammar, con-
sists of a syntactic component (the word formation or word
structure rules), a phonological component and a semantic
component.[18]

Such an independent lexical component generates all the words
of a language by means of a distinct set of lexical word
formation, (word) phonological, and (word) semantic rules.
No rules, principles, conditions, interpretive mechanisms,
etc. which form part of sentence grammar are allowed to part-
icipate in the formation or interpretation of lexical repre-
sentations.

The lexicon qua word grammar is taken to intersect with the
syntactic component of the grammar at one point only, viz.
where words generated by the lexical component are inserted
into the structures generated by the rules of syntax. That
is, the lexicon is conceived of as being both distinct from
and in a feeding relationship to syntax. This is illus-
trated quite strikingly by Kiparsky's (1982: 4) model of the
grammar which is presented here in a simplified form.

(9)

```
┌─────────────────────────────────────┐
│   underived lexical items           │
│                        ↓            │
│         ──→                         │
│         ←──     lexical             │
│ morpho-         phono-      ┤─ lexicon
│ logy    ──→     logy                │
│         ←──                         │
│         ──→                         │
│         ←──                         │
└─────────────────────────────────────┘

┌──────────┐     ┌──────────────┐
│ syntax   │ ──→ │ postlexical  │
└──────────┘     │ phonology    │
                 └──────────────┘
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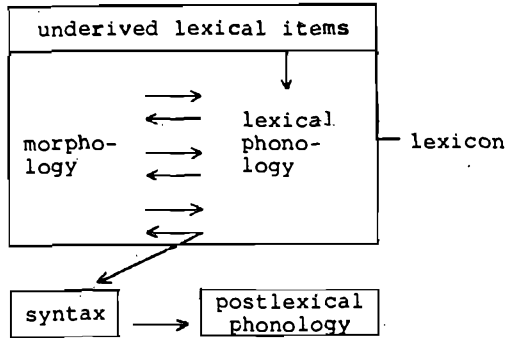
That the lexicon and syntax are perceived as being sequen-
tially ordered with respect to one another is also clear
from the use of metaphorical expressions such as those under-
lined in the following remarks by Kiparsky (1982):

> "We must assume some limited recursion
> from phrase-level syntax <u>back</u> into mor-
> phology anyway."   (p. 10)

> "... the lowest level of phrase struc-
> ture can in some way be <u>fed back</u> into
> the lexicon."   (p. 32)

Taken together, the Lexical Integrity Hypothesis, the No
Phrase Constraint, and the Lexical Component Hypothesis con-
stitute a highly restrictive view of the relationship
between the morphological (or word formation) and syntactic
components of the grammar. On the one hand, words, i.e.
constituents of the category level X^0, are taken to be
unanalyzable, hence minimal units with regard to the rules,
principles, and conditions of the syntactic component. On
the other hand, no syntactic rule, principle, or condition is
allowed to account for the properties, or to participate in
the formation of words or parts of words. That is, mor-
phology (as part of the lexicon) and syntax (as part of sen-
tence grammar) are taken to represent two fully independent
subsystems or modules of grammar.

This kind of modularity represents what Botha (1984:142)
calls a "formalistic" and Sadock (1983:199) a "strict" inter-
pretation of the fundamental assumption of generative grammar
known as the Modularity Hypothesis or the Autonomous Systems
Hypothesis. This hypothesis is formulated as follows by
Culicover, Wasow and Akmajian (1977:2):

> "... the grammar of a language is formulated
> in terms of the interaction of a number of
> distinct components, each formally characte-
> rizable as an independent system, subject to
> its own constraints and principles of orga-
> nization."

That is, the grammars of human languages are assumed to be
organized into a number of distinct and independent subsys-
tems of rules and principles, also known as components or
modules. These components are distinct and independent in
the sense that the elements, properties and relations de-
scribed by the rules and principles of one component are not
entirely reducible to the elements, properties and relations
described by the rules and principles of another component.[19]

As pointed out by Sadock (1983:198f), the Autonomous Systems
Hypothesis says no more than that the grammar is organized
into various subsystems. Assumptions about the degree of
formal distinctness of the elements and principles constitu-
ting the various subsystems or modules, and possible areas
of intersection between the various modules, are logically
independent from the assumption that separate modules exist.
And it is exactly on its assumptions concerning the degree
of independence of morphology and syntax that lexicalist
morphology has been challenged recently.

On the one hand, grammarians such as Marantz (1981), Pesetsky
(1985), Lieber (1984, to appear), and Sproat (1985, 1987)
have argued that certain properties of syntactically complex
words can be accounted for quite straightforwardly by the
syntactic, phonological, and semantic rules and principles
required independently to account for the properties of

phrases and sentences. On the other hand, various types of
natural language phenomena have been shown to require an
analysis on which syntactic rules and principles are allowed
to participate in accounting for the properties and/or for-
mation of complex words. Among the phenomena that have been
discussed in the literature are words with inflectional mor-
phology (e.g. Anderson 1982; Pranka 1983; Fabb 1984), syn-
thetic compounds (e.g. Botha 1980, 1984; Fabb 1984; Sproat
1985), clitic constructions (e.g. Stowell 1981; Zubizaretta
1982, 1985; Zwicky 1984b; Borer 1986), causative construc-
tions (e.g. Marantz 1981; Zubizaretta 1982, 1985; Taraldsen
1983; Baker 1985), prepositional passives (e.g. Hornstein
and Weinberg 1981; Fabb 1984; Baker 1985; Christensen
1986), and noun incorporation phenomena (e.g. Sadock 1983,
1985; Baker 1985). Phenomena such as these have been cited
as evidence in arguments for a greater degree of interdepen-
dence between the morphological and syntactic components of
the grammar.

This study must be seen as an attempt to contribute to the
debate about the way in which the relationship between mor-
phology and syntax should be construed. The significance
of the phenomenon to be considered, viz. verb-particle com-
binations, lies in the fact that, like the constructions
cited above, these combinations exhibit properties both of
(syntactically complex) words and of phrases. It is to an
illustration of this point that we turn in chapter 2.

Chapter 2

PROPERTIES OF VERB-PARTICLE COMBINATIONS

2.1   General

The class of expressions with which I shall be concerned in
this study is a class of complex verbal constructions which
is denoted in the literature by terms such as "verb-particle
combinations", "separable-prefix verbs", "phrasal verbs",
"particle verbs", "two-word verbs", "separable verbal com-
pounds", "separable verbs", or "discontinuous verbs".[1]
Expressions such as those underlined in (1) below are in-
stances of what I shall be referring to as verb-particle
combinations in English (1a), Dutch (1b), and Afrikaans (1c)
respectively.[2]   In order to avoid confusion I shall consis-
tently use the term "verb-particle combination", regardless
of whether the particle precedes or follows the verb in a
given construction.

A technical note may be in order here. The examples provi-
ded in this study appear in italics. Examples from languages
other than English are accompanied by a gloss, i.e. a literal
word-for-word (or morpheme-for-morpheme) translation, where
possible, and an idiomatic translation if necessary. Glosses
appear immediately below the example in question and are fol-
lowed by the translation in inverted commas. The symbol "+"
is used to indicate the constituent boundary separating the
particle and the verb in cases where they are written as one
word orthographically.

(1)(a)   *John cleaned out his room.*

  (b)   *Jan zei dat hij op + gaf.*
      John said that he up   gave
      'John said that he gave up.'

(c) *Jan   sal   natuurlik ons pogings af + maak.*
     John will of course our efforts off   make
     'John will of course disparage our efforts.'

Pretheoretically, verb-particle combinations such as those
illustrated in (1) may be characterized as verbal expres-
sions consisting of a verb and another, nonverbal, consti-
tuent --- the "particle" --- which, in the majority of
cases, superficially resembles a preposition or an adverb.[3]
What sets these verbal expressions apart from ordinary com-
pound and derived verbs on the one hand, and from syntactic
verb phrases on the other hand, is the fact that they exhi-
bit properties of both. That is, the constituents of verb-
particle combinations behave partly as syntactically inde-
pendent constituents and partly as members of a single
word-like constituent, as will be amply demonstrated imme-
diately below.

Because of their hybrid properties, verb-particle combina-
tions provide an ideal testing ground for hypotheses con-
cerning the relationship between the morphological and
syntactic components of the grammar. The aim of this chap-
ter, then, is to present an overview of those properties of
verb-particle combinations that have been identified in the
extensive literature on the subject as being relevant to
the question of whether, theoretically, these expressions
are to be assigned the status of words or of phrases. The
emphasis will be on the properties of verb-particle combi-
nations in English, Dutch, and Afrikaans, as these are the
languages with which this study will be mainly concerned.

2.2   Separability

The superficial resemblance which verb-particle combinations
bear to ordinary syntactic phrases is mainly attributable to
the fact that the verb and the particle can occur separated

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from one another in sentences. Thus, corresponding to (1a-c)
we have (2a-c) respectively.

(2)(a)   *John cleaned his room out*.

   (b)   *Jan gaf op*.
         John gave up
         'John gave up.'

   (c)   *Jan maak altyd ons pogings af*.
         John makes always our efforts off
         'John always disparages our efforts.'

Notice that the syntactic separability of the verb and the
particle is manifested in Dutch and Afrikaans in a slightly
different way from that in which it is manifested in English.
It is clear from a comparison of (1) and (2) above that,
whereas the position of the verb is fixed in English, the
particle may occupy either the position immediately to the
right of the verb, or the position immediately following the
direct object-NP as illustrated in (1a) and (2a) respective-
ly. In Dutch and Afrikaans, by contrast, it is not the
position of the particle that is variable, but rather that
of the verb. That is, whereas particles in these languages
always appear immediately to the left of the verb in under-
lying structure, the application of rules such as V-second
and V-raising have the effect of separating the particle
and the verb by virtue of moving the verb to another posi-
tion in the sentence.[4]

The effect of V-second on verb-particle combinations in Dutch
and Afrikaans is illustrated in (3) and (4) respectively.
Note that, because the word order in embedded clauses is as-
sumed to reflect the underlying word order, embedded clauses
will be used in examples whenever it is necessary to abstract
away from the distortion of the underlying word order result-
ing from the application of V-second, as in (3a), (4a), and
(5a, b) below.[5]

(3)   Dutch:

   (a)   *dat hij het meisje op + belde*
        that he the girl   up   rang
        'that he rang up the girl'

   (b)   *Hij belde het meisje op.*
        he· rang   the girl   up

(4)   Afrikaans:

   (a)   *dat hy die meisie op + bel*
        that he the girl   up   rings
        'that he rings up the girl'

   (b)   *Hy bel   die meisie op.*
        he rings the girl   up

In (5) the separation of the verb and particle by the appli-
cation of V-raising in Dutch is illustrated.

(5)(a)   *omdat   Carol [hem op + bellen] kon*
       because Carol him up   to ring could
       'because Carol could ring him up'

   (b)   *omdat   Carol [hem op e] kon   bellen*
       because Carol him up   could to ring
       'because Carol could ring him up'

In (3a), (4a), and (5a), representing the underlying consti-
tuent order, the particle *op* is adjacent to and immediately
to the left of the verb. After the application of V-second,
the particle is to the right of and no longer necessarily
adjacent to the verb, as shown in (3b) and (4b). After the
application of V-raising in Dutch, the particle may be sepa-
rated from the verb by one or more intervening verbs, as
shown in (5b). V-raising differs from V-second, however, in
that V-raising may move the particle along with the verb,
giving (6) instead of (5b) in Dutch.

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(6)   *omdat   Carol [hem e] kon   op + bellen*
        because Carol   him   could up   ring
        'because Carol could ring him up'

V-raising in Afrikaans differs from that in Dutch. First,
V-raising in Afrikaans is obligatory, as shown by the fact
that (7a) with the verb in the embedded position is ill-
formed. Second, according to Du Plessis (1972:38), speakers
of Afrikaans find sentences such as (7b), in which the verb
is separated from the particle by the application of V-
raising, only marginally acceptable, if not completely ill-
formed. Only sentences such as (7c), in which the particle
appears in the "raised" position adjacent to the verb, are
judged well-formed by all speakers of Afrikaans.

(7)(a) **omdat   Jan   [haar op + bel] wou*
        because John her   up   ring wanted

   (b) *?omdat   Jan   [haar op e] wou   bel*
        because John her   up   wanted ring

   (c) *omdat   Jan   [haar e] wou   op + bel*
        because John her   wanted up   ring
        'because John wanted to ring her up'

Van der Merwe (1980:136f) provides the following examples of
Afrikaans sentences in which the particle and the verb are
separated by V-raising, but which are nevertheless judged
well-formed by speakers of Afrikaans (the structural indica-
tions are mine):

(8)(a) *Om [op e] te mag tree, moet hulle eers   toestemming*
        for up   to may step, must they   first permission

        verkry.
        obtain
        'In order to be able to act, they must first obtain
        permission.'

The phenomenon appears to be limited to infinitival con-
structions and to be related to the fact that *te* always
separates the particle and the verb in *om ... te* (= *for*
... *to*) infinitives in Afrikaans, as shown in (9).

(9)(a) *Hulle dreig   om ons <u>aan</u> te <u>val</u>.*
       they   threaten for us on to fall
       'They threaten to attack us.'

  (b) *Hulle hoop om spoedig <u>op</u> te <u>tree</u>.*
       they hope for soon   up to step
       'They hope to act soon.'

The important point is that, although the particle may ---
and for many Afrikaans speakers must --- be moved along
with the verb by V-raising, V-second can never front the
particle along with the verb in either Dutch or Afrikaans.
Hence the unacceptability of both (10) in Dutch and (11) in
Afrikaans.

(10)   <u>Dutch</u>:
      *Hij <u>op</u> + <u>belde</u> het meisje.
      he up   rang the girl
      'He rang up the girl.'

(11)   <u>Afrikaans</u>:
      *Hy <u>op</u> + <u>bel</u>   die meisie.
      he up   rings the girl
      'He rings up the girl.'

The particle can also (optionally) be separated from the
verb in the *aan het* + infinitive construction in Dutch, the
equivalent of the English progressive, as illustrated in
(12).[6]

(12)(a)   *dat   hij   aan het   achter + raken is*
          that he   PROGRESSIVE behind   get   is
          'that he is falling behind'

   (b)   *dat hij achter   aan het   raken is*
          that he behind   PROGRESSIVE get   is

Afrikaans, by contrast, does not allow the particle to be
separated from the verb in *aan die* + infinitive (the equiva-
lent of Dutch *aan het*) constructions, as will be illustrated,
in par. 2.7 below.

2.3   Internal inflection

Verb-particle combinations in English, Dutch, and Afrikaans
take inflectional affixes internally. That is, inflection-
al affixes appear on the verbal constituent alone and not
on the sequence as a whole, as illustrated in (13). The
inflectional affixes are capitalized.

(13)(a)   *The king was countING out his money.*

   (b)   *Jan   had alles   weer door + GEhaalD.*
          John had everything again through scratched
          'John had scratched out everything again.'

   (c)   *Jan   het ons pogings af + GEmaak.*
          John has our efforts off   made
          'John disparaged our efforts.'

2.4   Semantic noncompositionality

Virtually all linguists who have discussed verb-particle
combinations agree that such combinations tend to have non-
compositional meanings.[7]   Various terms have been used to

denote this property of verb-particle combinations, e.g.
terms such as "idiomaticity", "semantic unity/opacity/idio-
syncracy/unpredictability/irregularity", and "metaphoric
sense/usage". The lack of uniformity in the terminology
used, reflects a lack of unanimity among linguists about
the kind and/or degree of semantic noncompositionality dis-
played by verb-particle combinations. A much debated ques-
tion is whether or not the noncompositionality displayed by
verb-particle combinations is comparable in kind and/or
degree to that of "true idioms" such as *kick the bucket*.
Steering clear of such questions, the property of semantic
noncompositionality will be attributed to a verb-particle
combination whenever its meaning includes an element which
is not entirely predictable from the literal meanings of
its constituents and the relation between them.

Thus widely defined, semantic noncompositionality is indeed
a characteristic feature of verb-particle combinations.
Thus, each of the following verb-particle combinations in
English (14), Dutch (15), and Afrikaans (16) can have both
the meaning shown in (a), which is fully compositional,
and that shown in (b). The latter meaning may be said to
be noncompositional in the sense defined above, although
it may be more or less transparent by virtue of being meta-
phorically or figuratively related to the literal meanings
of the constituents of the verb-particle combination in
question.[8]

(14)   English:

        get back   *carry out*

    (a) 'to return, retrieve'   (a) 'to transport outwards
                                        by carrying'
    (b) 'to have revenge on'   (b) 'to accomplish'

look up	*break in*
(a) 'to direct one's gaze upwards'	(a) 'to enter by breaking'
(b) 'to search for'	(b) 'to make less stiff by use (e.g. shoes)'

(15)   Dutch:

af + kijken	*voor + staan*
down look	in front stand
(a) 'to direct one's gaze downwards'	(a) 'to stand in front'
(b) 'to copy'	(b) 'to lead (in a match)'
in + rijden	*op + houden*
in drive	up hold
(a) 'to enter by driving'	(a) 'to hold aloft'
(b) 'to run in (a car)'	(b) 'to delay'

(16)   Afrikaans:

in + loop	*aan + raai*
in walk	on guess
(a) 'to enter by walking'	(a) 'to guess some more'
(b) 'to cheat'	(b) 'to recommend'
uit + gaan	*op + gooi*
out go	up throw
(a) 'to go outside'	(a) 'to throw upwards'
(b) 'to court (of lovers)'	(b) 'to vomit'

A note of caution may be in order here. It must be empha-
sized once again that the characterization of the (a)-
meanings in (14)-(16) above as "compositional" and the (b)-
meanings as "noncompositional" is by no means unproblematic.
On the one hand, as far as the characterization of the (a)-
meanings as "compositional" is concerned, it could for in-
stance be argued that verbs such as *get* in English, *houden*

in Dutch and *gaan* in Afrikaans, as well as particles such
as *in* and *up* in English, and *aan*, *af*, *in*, and *op* in Dutch
and Afrikaans, are semantically underdetermined in the sense
that they do not have a fully specifiable, context-indepen-
dent, literal meaning.[9]   If this were the case, it would
not be clear on what grounds the distinction compositional
vs. noncompositional could be maintained with regard to the
characterization of the meanings of complex expressions con-
taining such verbs and/or particles.

On the other hand, many of the (b)-meanings which have been
characterized as "noncompositional" above, could be argued
to result from a metaphoric interpretation of one or both
of the constituents of the verb-particle combination in which
they occur. Thus, for example, the (b)-meanings of *break in*
in English, *voorstaan* in Dutch, and *opgooi* in Afrikaans could
be argued to be metaphorically or figuratively related to the
(a)-meanings of these expressions. In this discussion, howe-
ever, no explicit distinction will be made between meanings
that may be characterized as metaphorical and those that may
be characterized as idiomatic. Both will be termed noncompo-
sitional.[10]

Apart from verb-particle combinations such as those exempli-
fied in (14)-(16), which are considered to have both a com-
positional and a noncompositional meaning, verb-particle
combinations which may be argued to have only a noncomposi-
tional meaning occur in both English and Afrikaans (and
presumably in Dutch as well). First, there are verb-particle
combinations for which it is extremely hard, if not impossi-
ble, to construct a compositional interpretation, although
the literal meaning of each constituent individually, in-
sofar as it can be specified, does appear to bear some rela-
tion to the meaning of the verb-particle combination as a
whole.

(17)(a) <u>English</u>:

> *top off*   *live   down*
> 'to finish'   'to endure successfully'
>
> *do in*   *make   out*
> 'to deceive, ruin, murder'   'to discern'

(b) <u>Afrikaans</u>:

> *na + sien*   *aan + stel*
> after   see   on   put
> 'to correct (e.g.   'to appoint'
> students' exercises)'
>
> *om + gee*   *af   +   spreek*
> about   give   down/off   speak
> 'to care about'   'to arrange/agree on'

Second, verb-particle combinations occur that contain at
least one constituent, the phonetic equivalent of which does
occur independently in the language but with a meaning which,
synchronically, bears no relation at all to the meaning of
the verb-particle combination of which it is a constituent.

(18)(a) <u>English</u> (examples from (Fraser 1976:7-8)):

> *egg   on*   *soup   up*
> 'to prod'   'to increase the power of'
>
> *while away*   *peter out*
> 'to spend time'   'to fizzle out'

(b) <u>Afrikaans</u>:

> *aan + [rand]$_N$*   *af   +   [vaardig]$_A$*
> on   border   down/off skilled
> 'to assault, attack'   'to delegate'

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$$by \ + \ [dam]_N \qquad\qquad uit + [sonder]_{Prep}$$
at/near dam   out   without

'to accost'   'to single out'

$$op + [dok]_{N/V} \qquad\qquad toe \quad + \quad [rus]_{N/V}$$
up   dock   to(wards)   rest

'to pay up'   'to equip'

When discussing the semantic properties of verb-particle
combinations, two further classes of expressions need to be
mentioned. The first is a small class of verb-particle
combinations in Afrikaans which contain bound morphemes.
The bound morphemes marked with an asterisk in (19) are so-
called cranberry morphs, i.e. morphemes which occur only in
one Afrikaans word.[11]

(19)   *na + *boots*   'to imitate'
         *af + *rokkel*   'to coax away'
         teleur + stel   'to disappoint'
         teweeg + bring   'to bring about'

The bound morphemes in (20) below each occurs with two dif-
ferent particles and, in the case of (20a) and (20b), with
the prefix *ver-* as well.

(20)(a) *aan + *skaf*   'to acquire'
         *af + *skaf*   'to abolish'
         *ver + *skaf*   'to provide'

   (b)   *aan + *kondig*   'to announce'
         *af + *kondig*   'to proclaim'
         *ver + *kondig*   'to announce, proclaim, preach'

   (c)   *op + *skeep*   'to burden'
         *af + *skeep*   'to neglect'[12]

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The verb-particle combinations in (19) and (20) could be claimed to be semantically noncompositional in the sense defined above if we accept with Aronoff (1976:10) that there is no noncircular way of assigning meanings to the starred constituents of these expressions.

The second class of verb-particle combinations that deserves special mention when discussing the semantic (non)compositionality of such combinations, is a class of verb-particle combinations in Dutch and Afrikaans of which the "verbal" constituent does not occur independently as a verb in the language. As far as English is concerned, Fraser (1976:7-8) does provide a list of verb-particle combinations which, according to him, contain verbal constituents "which never occur alone as verbs (except with very different meanings)". However, these constituents are all listed as verbs in the dictionary and his examples will therefore be ignored. Examples from Dutch and Afrikaans are provided in (21a) and (21b) respectively.[13]

(21)(a)   Dutch:

        aan + *[dik]*$_A$ + *en*   -   **dikken*$_V$
        on   thick   SUFFIX
        'to exaggerate'

        op + *[vrolijk]*$_A$ + *en*   -   **vrolijken*$_V$
        up   happy   SUFFIX
        'to make happy'

        in + *[blik]*$_N$ + *en*   -   **blikken*$_V$
        in   can   SUFFIX
        'to can'

        af + *[tuig]*$_N$ + *en*   -   **tuigen*$_V$
        off   harness SUFFIX
        'to unharness'

(b)   Afrikaans:

af + *[plat]*$_A$	*aan* + *[dik]*$_A$
off level	on thick
'to level off'	'to thicken'
aan + *[moedig]*$_A$	*op* + *[helder]*$_A$
on brave	up bright
'to encourage'	'to brighten up'
af + *[tak]*$_N$	*aan* + *[kruiwa]*$_N$
off branch	on wheelbarrow
'to branch off'	'to bring on in a wheel-barrow'
in + *[bed]*$_N$	*op* + *[hemel]*$_N$
in bed	up heaven
'to embed'	'to extol'

The forms in (21) differ from those presented in (18b) above
in that the meanings which the righthand constituents may be
claimed to have as constituents of the verb-particle combi-
nations in (21) are clearly related to the meanings of the
adjectives and nouns to which these righthand constituents
correspond. What has to be explained by an analysis of verb-
particle combinations such as those of (21) is how these
righthand constituents acquire their verbal reading. The
element of meaning added to that of the righthand consti-
tuent to yield a verbal reading is constant in those cases
where the righthand constituent corresponds to an adjective.
In these cases the added element of meaning can be roughly
characterized as "cause to become X" (where X represents the
meaning of the adjective). In those cases where the right-
hand constituent of a verb-particle combination corresponds
to a noun, however, the element(s) of meaning which must be
added to yield a verbal reading appear(s) to be unpredict-
able. Thus, for example, in the case of *blik* in *inblikken*
the added element of meaning is something like "to put into
an X" (where X represents the meaning of the noun). For *tuig*

in *aftuigen* it is roughly "to provide with an X". In the
case of *tak* in *aftak* it appears to be something like "become
(like) an X". For *kruiwa* in *aankruiwa* the added element of
meaning is roughly "to convey by means of an X". In the
case of *bed* in *inbed* and *hemel* in *ophemel* it is impossible
to specify exactly what the added element of meaning is. It
appears to be justified, therefore, to claim that verb-
particle combinations in Afrikaans and Dutch of which the
righthand constituent is a noun are semantically noncomposi-
tional as well.

2.5   Idiosyncratic subcategorization

Verb-particle combinations in English, Dutch, and Afrikaans
can have subcategorization properties which differ from
those associated with the verb on its own.[14]   Thus, whereas
caught is a transitive verb in English, as is illustrated in
(22a), it becomes intransitive with the addition of a parti-
cle, as shown in (22b).

(22)(a)   i.   *He caught the ball really fast.*
           ii. *??He caught really fast.*

    (b)   i.   *He caught on really fast.*
           ii. **He caught on the problem really fast.*

And in Dutch the verb *lopen* "to walk" is an intransitive verb.
Yet, when it is combined with a particle such as *in* or *af*, it
may be followed by a direct object NP as in the following
examples presented by Baayen (1986:38):

(23)(a)   *Hij loopt de   tentoonstelling af.*
           he   walks the exhibition   down
           'He visits the exhibition.'

(b)   *Hij <u>loopt</u> de schoenen <u>in</u>.*
      he   walks the shoes   in
      'He tries out the shoes .'

Similarly, in Afrikaans normally transitive verbs may become
intransitive when combined with a particle, and vice versa.
Thus, the verb *kom* 'to come', which is intransitive as shown
in (24a), becomes transitive when combined with the particle
teë, as evidenced by (24b).

(24)(a)   i. *Hy sal <u>kom</u>.*
              he will come.

         ii. **Hy sal haar <u>kom</u> .*
              he will her   come

   (b)   i. **Hy sal <u>teë</u> + <u>kom</u>.*
              he will against come

        ii. *Hy sal haar <u>teë</u> + <u>kom</u>.*
              he will her against come
              'He will encounter her.'

The verb *gee* 'to give', by contrast, is normally a double-
object verb in Afrikaans. In combination with the particle
om, however, it takes only a prepositional object. This is
illustrated in (25).

(25)(a)   i. *omdat   sy die boek vir   Jan <u>gee</u>*
              because she the book for/to John gives
              'because she gives the book to John'

        ii. **omdat   sy vir   Jan <u>gee</u>*
              because she for/to John gives

   (b)   i. **omdat   sy die boek vir   Jan <u>om</u> + <u>gee</u>*
              because she the book for/to John about gives

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ii.  omdat  sy  vir  Jan  om  + gee
     because she for/to John about  gives
     'because she cares about John'
```

2.6   Ability to serve as bases of word formation rules

Verb-particle combinations in English, Dutch, and Afrikaans
may serve as bases of word formation rules such as rules of
derivational affixation, compounding, and zero derivation.[15]
In English verb-particle combinations can form the bases for
the rule of -ed suffixation which applies in the derivation
of adjectives from verbs, as illustrated in (26).

(26)   She really is a mixed-up kid.

Derivational suffixes such as -er that normally occur with
verbs can occur with verb-particle combinations, as shown in
(27).

(27)   There were plenty of onlookers/passers-by.

Notice that, like inflectional suffixes --- see par. 2.3
above --- , derivational suffixes are normally attached to
the verb and not to the verb-particle combination as a whole.
In only a small number of cases, e.g. onlookers in (27), the
positions of the verb and the particle are reversed, so that
it could plausibly be argued that it is not only the verb
but the verb-particle combination as a whole which serves as
the base for the relevant word formation rule. In all cases,
however, the meaning of the derived word is composed by bring-
ing the meaning of the suffix to bear on the meaning of the
verb-particle combination as a whole. Thus, an onlooker is
"someone who looks on" and a passer-by is "someone who passes
by". Therefore, semantically at least, the entire verb-

particle combination serves as the "base" of the affix ---
see also n. 16 below.

Like verbs, verb-particle combinations can undergo zero-
derivation to form nouns, as in (28).

(28)   *He has always had the makings of a <u>drop-out</u>.*

And, lastly, a nominalized verb-particle combination can form
the lefthand member of a compound, as shown in (29).

(29)   *We received a <u>shutdown notice</u> in the mail today.*

Dutch verb-particle combinations too may serve as bases of
word formation rules. Thus, Van Santen (1983:77) cites the
expressions in (30a) as examples of derived words with verb-
particle combinations as bases. The derived words in (30b)
are from (Baayen 1986:44) and those in (30c) from (Zwarts
1975:143). The derivational affixes are capitalized.

(30)(a)   *[onder + duik]   ER*   -   *onderduiken*
            under   dive   -er   'to dive under(water)'
            'fugitive (in wartime)'   'to flee (in wartime)'

            [voort + breng]   ING   -   *voortbrengen*
            forth   bring   -ing   'to bring forth'
            'bringing forth'

    (b)   *[om   + koop]   BAAR*   -   *omkopen*
            around buy   -able   'to bribe'
            'bribeable'

            [af + was]   BAAR   -   *afwassen*
             off   wash -able   'to wash off'
            'removable by washing'

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(c)   *[bijeen + raap] SEL* -   *bijeenrapen*
       together gather AFFIX   'to gather together'
       'that which has been
       (hastily) gathered together'

      [uit + trek] SEL   -   *uittrekken*
       out   pull AFFIX   'to pull out'
       'excerpt'   'to make an excerpt from'

Both Baayen and Zwarts consider the entire verb-particle
combination, rather than the verb which is the righthand
constituent of such a combination, to serve as the base to
which the affixation rule applies. Such an analysis is at
least semantically plausible if one accepts that the meaning
of morphologically complex words is compositional in the
sense of (Williams 1981:245) and (Botha 1984:110-112). Ac-
cording to Botha (1984:112),

            "... if the semantic interpretation (or mean-
            ing) of a complex word can be specified as a
            simple function of the meanings of its consti-
            tuents, these constituents must be bracketed
            and labelled in such a way as to make such a
            specification possible."

Notice that a verb-particle combination such as *onderduiken*
in (30a) has a noncompositional meaning, viz. 'to flee (in
order to avoid persecution) in wartime'. This meaning is a
constituent in the composite meaning 'fugitive (i.e. one who
flees in order to avoid persecution) in wartime' with which
the derived word *onderduiker* is associated. Given the prin-
ciple of compositionality outlined above, *onder* and *duiken*
should thus be analyzed as forming a constituent in the struc-
tural representation assigned to *onderduiker*.[16]

With the possible exception of *byeenraapsel* --- the dic-
tionary provides only *byeenraping* --- , the forms in (30)
are well-formed in Afrikaans as well. (*Onderduiker* may not
be familiar to speakers of Afrikaans, but is accepted as a
possible word with the compositional meaning 'someone who

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dives under(water)' by them.)   In addition to the Afrikaans
equivalents of (30), we also find derived words such as those
of (31) in Afrikaans.

(31)(a)   Nouns:

          [na + aap] ER   -   *na-aap*
          after   ape -er   'to imitate'
          'imitator'

          [af   + sak] SEL   -   *afsak*
          off/down sink AFFIX   'to sink, go down'
          'sediment'

          [om + koop] ERY   -   *omkoop*
          around   buy   -er   'to bribe'
          'bribery'

          GE   [oor + loop]   -   *oorloop*
          AFFIX over   walk   'to walk over (to)'
          'walking over'

     (b)   Adjectives:

          [aan + val] END   -   *aanval*
          on   fall -ing   'to attack'
          'attacking, agressive'

          [af   +   hang] LIK (= afhanklik) -   *afhang*
          off/down hang - ly   'to hang down'
          'dependent'   'to depend'

          [af   +   val] IG   -   *afval*
          off/down fall -ish   'to fall off'
          'faithless, disloyal'   'to forsake'

The bracketing indicated in (31) can be motivated in at least
some of the cases. In the case of *[na + aap] ER* and
GE [oor + loop], for instance, the alternative analyses
na [aap + ER] and *[GE + oor] loop* are impossible because

the affixes are not subcategorized for sister constituents
of the type in question, viz. N in the case of *-er* and P in
the case of *ge-*. In the case of *[af + hang] LIK*, the (non-
compositional) meaning of *afhang*, viz. 'to depend', is. a
constituent in the meaning of *afhanklik* 'dependent'. Given
the principle of compositionality outlined above, *af* and *hang*
should therefore be analyzed as forming a constituent in the
structural representation assigned to *afhanklik*. Since the
bracketing assigned to the forms in (31) can be argued to be
the only possible bracketing in the cases discussed, it will
be assumed to be the correct bracketing for all of the forms
in (31).

Finally, as in English (and presumably Dutch), verb-particle
combinations in Afrikaans can occur as constituents of com-
pounds, as shown in (32), and can undergo zero-derivation to
form nouns, as shown in (33).

(32)(a) *Die kleuter is nou in die [op+ klouter]-stadium.*
         the toddler is now in the up clamber stage
         'The toddler is now at the age of wanting to
         climb onto everything.'

   (b) *Hy het 'n [uit + koop]-kontrak met sy broer*
        he has a out buy   contract with his brother

        gesluit.
        closed
        'He made a contract with his brother to buy him
        out.'

   (c) *.Daar is 'n [oor + klim]-plek verder aan.*
        there is a over climb place further on
        'There is a place where you can climb over further
        on.'

   (d) *Hy is 'n uitstekende [weg + breek]-bouler.*
        he is an excellent away break bowler
        'He is an excellent off-spin bowler.'

(33)(a) *Die aan + gee het verlore gegaan.*
         the on give has astray gone
         'The pass (= rugby term) has gone astray.'

   (b) *Die af + loop van die wedstryd is goed bekend.*
        the off walk of the match   is well known
        'The result of the match is well known.'

   (c) *Ek het my met die oor + spring beseer.*
        I have me with the over jump   hurt
        'I hurt myself in jumping over.'

   (d) *Van uit + stel kom   af + stel.*
        from out   put comes off put
        'Postponement usually leads to abandonment.'

2.7   Syntactic cohesiveness

Despite their being syntactically separable under the con-
ditions indicated in par. 2.2 above, verb-particle combi-
nations tend to behave like single words in being syntac-
tically more cohesive than ordinary syntactic strings
consisting of a preposition or adverb and a verb.[17] Thus,
for instance, Fraser (1965) points out that in English the
verb and the particle cannot be separated if the verb has
undergone action nominalization, as shown in (34).

(34)(a) *He looked up the information.*
    (b) *His looking up of the information surprized me.*
    (c) *He looked the information up.*
    (d) **His looking of the information up surprized me.*

The particle cannot be conjoined, as is clear from (35).

(35)(a) **He looked up and over the information.*
    (b) **He looked the information up and over.*

And the particle cannot be freely modified by an adverbial,
as illustrated in (36).

(36)(a) *He _looked_ right _up_ the information.

    (b) ?He _looked_ the information right _up_.

    (c) *He _looked_ part way _up_ the information.

    (d) ?He _looked_ the information part way _up_.

A further indication of the syntactic cohesiveness displayed
by verb-particle combinations, mentioned in (Fraser 1976:3),
is the fact that only the verb-particle combination as a
whole, but no part of it, can be gapped.[18] This is evi-
denced by the well-formedness of (37aii) and (37bii) and the
ill-formedness of (37cii) and (37dii).

(37)(a)   i. John _looked up_ the information, and Mary
              looked up the figures.

      ii. John _looked up_ the information, and Mary
              the figures.

    (b)   i. John _looked_ the information _up_, and Mary
              looked the figures _up_.

      ii. John _looked_ the information _up_, and Mary
              the figures.

    (c)   i. John _looked up_ the information, and Mary
              looked over the figures

      ii. *John _looked up_ the information, and Mary
              over the figures.

    (d)   i. John _looked_ the information _up_, and Mary
              looked the figures _over_.

      ii. *John _looked_ the information _up_, and Mary
              the figures _over_.

Also, as Emonds (1972:554) has pointed out, particles often
cannot be preposed under conditions which normally allow
the preposing of directional adverbs. Thus we have the con-
trast in (38).

(38)(a) *Up* he *lifted* the weight!

   (b) **Up* he *looked* the information!

Verb-particle combinations in Dutch too display the property
of syntactic cohesiveness. This was already partly illus-
trated in (6) and (12) above where it was shown that parti-
cles can optionally be moved along with the verb by the
rule of V-raising --- see (6) --- and appear adjacent
to the verb in *aan het* + infinitive constructions --- see
(12a). Note that ordinary intransitive prepositions and
NP complements of the verb do not display similar beha-
viour. Thus the (i)-sentences of (39)(a) and (b), in
which an intransitive preposition and a direct object-NP
respectively have been moved along with the verb by V-
raising, are unacceptable. Similarly the (i)-sentences in
(40)(a) and (b), in which an intransitive preposition and
a direct object-NP respectively appear adjacent to the
verb in an *aan het* + infinitive construction, are unaccept-
able. The (ii)-sentences represent the well-formed coun-
terparts of the respective (i)-sentences.[19]

(39)(a) i. **dat hij [mij e_i e_j] probeert [achter]$_i$*
          that he me   tries   in the back
          [te vinden]$_j$.
          to find

      ii. *dat hij [mij achter e_i] probeert [te*
          that he me in the back tries   to
          vinden]$_i$
          find
          'that he tries to find me in the back'

   (b) i. **dat Jan [PRO [e_i]$_{VP}$]$_S$ wil [een huis kopen]$_i$*
          that John   wants a house buy

      ii. *dat Jan [PRO [een huis e_i]$_{VP}$]$_S$ wil [kopen]$_i$*
          that John   a house   wants buy
          'that John wants to buy a house'

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(40)(a) i. *dat hij   [aan het   _achter_   spitten] is
              that he   PROGRESSIVE in the back dig   is

      ii. dat hij _achter_   [aan het   spitten] is
              that he in the back PROGRESSIVE   dig   is
              'that he is digging in the back'

   (b) i. *Karel is   [aan het   _de leraar_   plagen]
              Charles is   PROGRESSIVE the teacher   tease

      ii. Karel   is _de leraar_   [aan het   plagen]
              Charles is the teacher PROGRESSIVE   tease
              'Charles is teasing the teacher.'

The syntactic cohesiveness of verb-particle combinations in
Dutch is further indicated by the inability of the particle
to undergo the rules of Topicalization and PP-_over_-V.
Whereas ordinary intransitive prepositions can be moved to
the topic position of a sentence by the rule of Topicaliza-
tion, as shown in (41b), or to the right of the verb by
PP-_over_-V, as shown in (42b), particles can undergo neither
type of movement, as shown in the (a)-sentences of (41) and
(42).[20]

(41)(a) i. Hij heeft mij _op_ + _gebeld_.
              he   has   me up   rung
              'He rang me up.'

      ii. *_Op_ heeft hij mij _gebeld_.
              up has   he me rung

   (b) i. dat ik _beneden_ werk en (dat ik) _boven_ slaap
              that I below   work and that I   above sleep
              'that I work downstairs and sleep upstairs'

      ii. _Beneden_ werk ik en _boven_ slaap ik.
              below   work I and above sleep I
              'Downstairs I work and upstairs I sleep.'

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```
(42)(a)  i.  dat  Jan  achter + raakt
             that John behind   gets
             'that John falls behind'

        ii. *dat  Jan  raakt achter
             that John gets  behind

    (b)  i.  dat  Jan  achter     niet op zijn gemak zit
             that John in the back not  at  his   ease sits
             'that John does not sit comfortably in the back'

        ii.  dat  Jan  niet op zijn gemak zit achter
             that John not  at his  ease sits in the back
```

The question of the possibility of adverbial modification
of the particle in Dutch is broached only by Baayen. Accor-
ding to him (1986:34) the sentences in (43) indicate that
particles allow limited adverbial modification in Dutch.

```
(43)(a) *Jan  belde me helemaal   op .
         John rings me completely up

    (b)  Jan  at  zijn eten helemaal   op .
         John ate his  food completely up
         'John finished his food completely.'
```

Afrikaans verb-particle combinations appear to be even more
cohesive syntactically than their Dutch counterparts, as
was pointed out in par. 2.2 above. Thus, it was shown that
the preferred position for the particle after application of
the rule of V-raising in Afrikaans is the position adjacent
to the verb --- see (7) above. According to Du Plessis
(1972:27), the more "particle-like" (i.e. the less like an
ordinary preposition or adverb) the lefthand constituent of
a verb-particle combination, the less acceptable a sentence
in which the lefthand constituent has been separated from
the verb by V-raising. Thus, according to him (1972:27ff),
the (i)-sentences in (44) in which the particles are sepa-
rated from their verbs are acceptable to speakers of Afri-

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kaans, but the (i)-sentences in (45) are not. Notice that,
whereas the verb-particle combinations of the sentences in (44)
are semantically compositional, those of the sentences in (45)
are not.

(44)(a) i. *Hy sal [ʼn stertjie aan e] bly las.*
he will a tail on keep add
'He will keep on adding an interesting turn
(to the story).'

     ii. *Hy sal [ʼn stertjie e e] bly aan + las .*
he will a tail keep on add

  (b) i. *Sy sal [weg e] bly kyk.*
he will away keep look
'She will keep on looking away.'

     ii. *Sy sal [e e] bly weg + kyk.*
she will keep on away look

(45)(a) i. **Die bende sal [ons aan e] bly rand.*
the gang will us to/on keep ?

     ii. *Die bende sal [ons e e] bly aan + rand.*
the gang will us keep on ?
'The gang will keep on attacking us.'

  (b) i. **Die dorpsjapies sal [aan die afval weg e]*
the townsmen will to/on the tripe away
bly lê.
keep lay

     ii. *Die dorpsjapies sal [aan die afval e e]*
the townsmen will to/on the tripe
bly weg + lê.
keep away lay
'The townsmen will keep on tucking into the
tripe.'

With modal auxiliaries, instead of a verb such as bly, a
similar difference in syntactic cohesiveness is exhibited

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by semantically compositional (46a) and semantically non-
compositional (46b) verb-particle combinations respectively.
However, unlike the (i)-sentences in (45) above, Du Plessis
does not consider (46bi) to be unacceptable. He (1972:15,
38) merely considers it to be "not normal usage".

(46)
(a) i. Die inbreker sal [in die huis _in_ e] { moet / kan / wil } _kom_ .

        the burglar will in the house in { have / be able / want } come

        'The burglar will { have / be able / want } to get into the house.'

   ii. Die inbreker sal [in die huis e e] { moet / kan / wil } _in_ + _kom_ .

        the burglar will in the house { have / be able / want } in   come

(b) i. ?Die gemeente   sal [die kerk   _in_ e] { moet / kan / wil } _wy_ .

        the congregation will the church in { have / be able / want } consecrate

        'The congregation will { have / be able / want } to consecrate the
        church.'

   ii. Die gemeente   sal [die kerk e e] { moet / kan / wil } _in_ + _wy_ .

        the congregation will the church { have / be able / want } in   con-
        secrate

In aan die + infinitive constructions in Afrikaans, the par-
ticle often has to appear adjacent to the verb. Kempen (1984:
194-195) provides the following example:

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(47)(a) *Op die veld is die spannetjie hom   <u>teen</u>
          on the field is the   team   itself against
          aan die   <u>sit</u>.
          PROGRESSIVE   put

    (b)   Op die veld is die spannetjie hom   aan die
          on the field is the   team   itself PROGRESSIVE
          <u>teen</u> + <u>sit</u>.
          against put
          'On the field the team is offering opposition.'

However, particles which Du Plessis considers to be ordinary
prepositions or adverbs rather than particles --- see (44)
above --- can also appear separated from the verb in aan
die + infinitive constructions in Afrikaans, as illustrated
in (48), where aan't is a variant form of aan die.

(48)(a)   Hy was <u>weg</u> aan't   <u>hardloop</u> toe hy skielik
          he was away PROGRESSIVE   run   when he suddenly
          gly.
          slip
          'He was running away when he suddenly slipped.'

    (b)   Hy was aan't   <u>weg</u> + <u>hardloop</u> toe hy skielik
          he was PROGRESSIVE away   run   when he suddenly
          gly.
          slip

With regard to the rules of Topicalization and PP-over-V,
Afrikaans and Dutch verb-particle combinations appear to pat-
tern alike. Thus, whereas ordinary intransitive prepositions
can topicalize in Afrikaans, as shown in (49a), the particle
constituent of a verb-particle combination cannot, as shown
in (49b).

(49)(a)   i. Die son het <u>buite</u>   geskyn.
              the sun has outside shone
              'The sun was shining outside.'

ii. *Buite*   *het die son geskyn.*
     outside has the sun shone
     'Outside, the sun was shining.'

(b) i. *Hy het my dikwels op + gebel.*
         he has me often   up   rung
         'He often rang me up.'

     ii. **Op het hy my dikwels gebel.*
         up has he me   often   rung

However, if the meaning of the verb-particle combination is
fully compositional --- as in (50a) --- or at least
highly transparent in the sense of par. 2.4 --- as in
(50b) --- a sentence with the particle in the topicalized
position is judged either completely acceptable (50 aii) or
not totally unacceptable (50 bii) by speakers of Afrikaans.

(50)(a) i. *Ek kon   nie weg + kyk   nie.*
             I   could not away look not
             'I could not look away.'

        ii. *Weg   kon   ek nie kyk   nie.*
             away could I   not look not

    (b) i. *Hulle kan nie wil   voor +   loop nie!*
             they can not want in front walk not
             'It cannot be true that they are leading (in
             the game)!'

        ii.? *Voor   kan hulle nie wil   loop nie!*
             in front can they   not want walk not

Although ordinary intransitive prepositions in Afrikaans can
undergo the rule of PP-over-V, as illustrated in (51a), the
particle constituent of a verb-particle combination can not,
as shown in (51b).

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(51)(a) i. *dat Jan <u>agter</u>   gemaklik   sit*
              that John in the back comfortably sits
              'that John sits comfortably in the back'

      ii. *dat Jan gemaklik   sit <u>agter</u>*
              that John comfortably sits in the back

   (b) i. *dat Jan vinnig <u>agter</u> + <u>raak</u>*
              that John fast   behind gets
              'that John is falling behind fast'

      ii. **dat Jan vinnig <u>raak</u> <u>agter</u>*
              that John fast   gets behind

The degree of cohesiveness which a verb-particle combination
exhibits with regard to the rule of gapping in Afrikaans ap-
pears to be related to the degree of semantic transparency
of the combination as well. Thus, sentence (52aii), in which
a constituent of a semantically compositional, hence complete-
ly transparent, verb-particle combination is gapped, is accep-
able to speakers of Afrikaans. Sentence (52bii), in which a
constituent of a semantically noncompositional but, arguably,
still transparent verb-particle combination is gapped, is
slightly less acceptable. By contrast, sentence (52cii) in
which a constituent of a noncompositional, semantically non-
transparent verb-particle combination is gapped, is completely
unacceptable.

(52)(a) i. *Hy <u>loop aan</u> en sy <u>loop terug</u>.*
              he walks on and she walks back
              'He walks on and she walks back.'

      ii. *Hy <u>loop aan</u> en sy <u>terug</u>.*
              he walks on and she back

   (b) i. *Sy <u>maak</u> telkens   <u>uit</u> en hy <u>maak op</u>.*
              she makes time and again out and he makes up
              'She breaks off the relationship time and again
              and he repairs it.'

      ii.? *Sy <u>maak</u> telkens   <u>uit</u> en hy <u>op</u>.*
              she makes time and again out and he up

(c) i. *Piet <u>gee   oor</u> en Jan <u>gee   om</u>.*
       Peter gives over and · John gives about
       'Peter surrenders and John cares.'

   ii. **Piet <u>gee   oor</u> en Jan <u>om</u>.*
       Peter gives over and John about

And, finally, the Afrikaans facts with regard to the possibi-
lity of modification of the particle constituent of verb-
particle combinations are similar to the Dutch facts cited
in (43) above. Thus, corresponding to (43a), we have (53a)
and corresponding to (43b), we have (53b) in Afrikaans.

(53)(a)   **Jan <u>bel</u>   my heeltemal <u>op</u>.*
           John rings me completely up

   (b)   *Jan <u>eet</u> sy kos heeltemal <u>op</u>.*
           John eats his food completely up
           'John finishes all his food.'

Notice that the ability of the particle to be modified by
an adverb in (53b), but not in (53a), once again correlates
with the fact that *opeet* in (53b) is semantically composi-
tional whereas *opbel* in (53a) is not. Thus, it is signifi-
cant that if *op* in (53a) were to be interpreted as having the
meaning 'finished', i.e. roughly the meaning of *op* in (53b),
but in the figurative sense of 'exhausted', then (53a) would
be more acceptable.

2.8   Phonological stress on the particle

The last property of verb-particle combinations to be men-
tioned here is a phonological one, viz. their characteristic
stress pattern. In English, Dutch and Afrikaans, the parti-
cle carries the primary stress, as shown in (54). Primary
stress is indicated with a "´".[21]

(54)(a)   English:

        to drop oút   *to put oút*

        to break úp   *to take óff*

  (b)   Dutch:

        meé + maken   *dóor + halen*

        with make   through haul

        'to experience'   'to pull through'
                       'to scratch out'

        óver + lopen   *toé + geven*

        over walk   to give

        'to overflow'   'to give more than is re-
                       quired'

        'to defect'   'to admit'

  (c)   Afrikaans:

        áan + gee   *óp + klim*

        to give   up climb

        'to hand (to)'   'to climb up'

        uít + stel   *ín + staan*

        out put   in stand

        'to postpone'   'to stand in'

As has often been pointed out, the stress pattern of verb-
particle combinations in Dutch and Afrikaans is the same as
that of compounds, i.e. the primary stress typically falls
on the lefthand, nonhead constituent.[22]

2.9   Summary

The following properties were shown above to be considered
in the literature as characteristic properties of verb-parti-
cle combinations in English, Dutch, and Afrikaans:

(55)(a)   syntactic separability, i.e. the ability of
            the verb and the particle to be nonadjacent
            in syntactic structure (cf. par. 2.2);

    (b)   internal inflection, i.e. the ability of verb-
            particle combinations to take inflectional
            affixes internally (cf. par. 2.3);

    (c)   semantic noncompositionality, i.e. the tendency
            for verb-particle combinations to have meanings
            which are not entirely predictable from the
            literal meanings of their constituents and the
            relation between these constituents (cf. par.
            2.4);

    (d)   idiosyncratic subcategorization, i.e. the abi-
            lity of verb-particle combinations to have
            subcategorization properties which differ from
            those associated with the verb on its own
            (cf. par. 2.5);

    (e)   ability to serve as the bases of word forma-
            rion rules such as rules of derivational
            affixation, compounding, and zero-derivation
            (cf. par. 2.6);

    (f)   syntactic cohesiveness, i.e. the tendency of
            verb-particle combinations to behave like a
            single word with regard to syntactic rules of
            conjunction, gapping, topicalization, and PP-
            postposing, and also with regard to adverbial
            modification of the particle, and (in the case
            of Dutch and Afrikaans) in V-raising and
            aan ... het/die + infinitive constructions (par.
            2.7);

    (g)   phonological stress on the particle, i.e. the
            characteristic stress pattern of verb-particle
            combinations whereby the particle carries pri-
            mary stress --- like compounds in the case
            of Dutch and Afrikaans (par. 2.8).

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The list of properties in (55) must not be considered ex-
haustive. A number of properties other than those listed
in (55) have been mentioned by various linguists in their
discussions and analyses of verb-particle combinations.
Some of these will be mentioned further on.   As will
become clear from the critical discussion in chapters 3
and 4 of a number of analyses of verb-particle combinations
which have been proposed in the recent literature, the pro-
perties discussed in this chapter are particularly relevant
to the question of whether verb-particle combinations should
be assigned the status of words or of phrases.

Chapter   3

LEXICALIST ANALYSES OF VERB-PARTICLE COMBINATIONS

3.1   General

In this chapter we take a critical look at three analyses
of verb-particle combinations which are presented within the
framework of a lexicalist approach to word formation such as
that outlined in chapter 1.   The three analyses to be dis-
cussed are Simpson's (1983a, b) lexical $\overline{V}$ analysis of verb-par-
ticle combinations in English (par. 3.2), Baayen's overlap
analysis of verb-particle combinations in Dutch (par. 3.3),
and Selkirk's (1982) dual structure analysis of verb-particle
combinations in English (par. 3.5).   Of the three analyses,
those proposed by Simpson and Baayen to account for the pro-
perties of verb-particle combinations in English and Dutch
respectively are similar in that on both these analyses
verb-particle combinations are assigned the status of phrases.
A phrase, for purposes of the present discussion, will be
taken to be any category that is higher in the $\overline{X}$ hierarchy
than the category X^0, hence a category of the level $X^{1<}$.
On Selkirk's analysis, by contrast, verb-particle combina-
tions are claimed to be both words, i.e. X^0 categories, and
phrases, i.e. $\overline{X}$ (or X^1) categories.

The immediate aim of the discussion in this chapter is, on
the one hand, to identify and analyze the shortcomings of
the analyses in question and, on the other hand, to examine
the major general linguistic assumptions underlying these
analyses.   The ultimate aim is to show that some of the short-
comings of the analyses must be taken to reflect negatively
on the lexicalist construal of the relationship between syntax
and morphology which was outlined in chapter 1.

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The discussion will be organized as follows. First, in par.
3.2, the central claims made on Simpson's analysis, as well
as the formal devices proposed to express these claims, will
be outlined briefly. This will be followed by a discussion
of the major shortcomings of her analysis. Next, in par.
3.3, we will consider the central claims made and formal
devices proposed on Baayen's analysis, as well as the major
shortcomings of this analysis. The general linguistic as-
sumptions underlying Simpson's and Baayen's analyses will be
examined in par. 3.4. In par. 3.5 we will briefly consider
Selkirk's far less detailed analysis of verb-particle combi-
nations in English. Once again, an outline of the central
claims made and formal devices proposed will be followed by
an attempt to identify both the major shortcomings of the
analysis and the general linguistic assumptions on which it
is based.

3.2   Simpson's lexical $\overline{V}$ analysis

3.2.1   Claims and formal devices

Simpson (1983a:8) proposes that verb-particle combinations
in English belong to the category $\overline{V}$ which is, exceptionally,
generated by a rule of morphology/word formation. Thus,
both instances of a verb-particle combination such as *look up*
in (1) are derived from the underlying structure shown in (2).

(1)(a)   *look up* the number
   (b)   *look* the number *up*

(2) $[\ [look]_V \ [up]_P \ ]_{\overline{V}}$

On the one hand, the category level of the verb-particle com-
bination is claimed to be that of a syntactic verb phrase,
i.e. $\overline{V}$. The structure (2) differs from that of a phrase, how-

ever, in that the nonhead constituent, i.e. the particle, is
not a maximal projection of the lexical category P as required
by $\overline{X}$-theory.[1]   On the other hand, despite the phrasal cate-
gory level of the structure as a whole, (2) resembles a com-
pound verb structure and is in fact claimed to be generated
by an (unformulated) word formation rule by Simpson. As all
word formation rules apply in the lexicon on the general
theory of word formation which Simpson accepts, I shall refer
to her analysis of verb-particle combinations as the "lexi-
cal $\overline{V}$ analysis".

By assuming that verb-particle combinations are generated
in the word formation component of the grammar, Simpson
(1983a:8) claims to be able to account for the fact that
these constructions exhibit properties that are characteris-
tically associated with words. According to Simpson, her
analysis can explain why verb-particle combinations behave
like words with regard to meaning, subcategorization and
ability to serve as bases for other rules of the word form-
ation component. Specifically, the fact that both continuous
verb-particle combinations such as *look up* in (1a) and dis-
continuous verb-particle combinations such as *look ... up* in
(1b) have the same noncompositional meaning and idiosyncra-
tic subcategorization is accounted for by assigning them a
single underlying structural representation, viz. (2) above.

In order to account for the properties which verb-particle
combinations share with phrases, viz. their syntactic separa-
bility and their ability to take inflectional affixes inter-
nally, an additional assumption is needed within Simpson's
general theory of word formation. She (1983a:8) assumes
without argument that $\overline{X}$ categories formed in the word form-
ation component are analogous to syntactic $\overline{X}$ categories in
that their internal structure is visible, i.e. accessible,
to all rules which may subsequently apply to these catego-
ries.[2]   Thus, rules of inflectional affixation, which apply
after rules of compounding on her theory, cannot normally
attach an inflectional affix to a constituent of a compound,

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only to the compound as a whole. Yet inflectional affixes
can be attached to the verbal constituent of a verb-particle
combination. Since, as a $\overline{V}$ category, a verb-particle combi-
nation has a visible internal structure, the verbal consti-
tuent is available as a base for the application of the rule
inserting the past tense suffix.

The separability of the verb and the particle too follows
from the assumption that $\overline{X}$ categories have a visible inter-
nal structure. Because of its visible internal structure,
the constituents of a verb-particle combination can be in-
serted under the V and P(reposition) nodes dominated by $\overline{V}$ in
a syntactic structure according to Simpson (1983a:9).

As an independent constituent of $\overline{V}$, the particle can be
moved to the post-direct object position, accounting for
the discontinuity of the verb and the particle in (1b).

3.2.2   Shortcomings

3.2.2.1   Lexically generated $\overline{X}$

A first set of problems with Simpson's lexical $\overline{V}$ analysis
concerns her assumption that $\overline{X}$ categories can be generated
by word formation rule. Given this assumption, it is pre-
dicted that other $\overline{X}$ categories, apart from $\overline{V}$, may be gene-
rated in the word formation component as well. However,
Simpson (1983a:10 n. 9) cites only one other instance in
which it would, putatively, be necessary to assume that an
$\overline{X}$ category is generated in the word formation component,
viz. the case of compound nouns such as *hanger on* which
take plural affixes internally as in *hangers on*. Accord-
ing to Simpson, for the plural affix to appear internally
a compound such as *hanger on* must have a visible internal
structure, i.e. it must be an $\overline{N}$.

The fact that a form such as *hangers on* displays internal
inflection can hardly be regarded as convincing evidence
for the hypothesis that $\overline{X}$ categories may be generated in
the word formation component, however. First, the data
concerning the internal inflection of *hangers on* fail to
satisfy the requirement of evidential comprehensiveness,
i.e. the requirement in terms of which the extent of the
factual justification for a hypothesis is related to the
size of the corpus of evidence for the hypothesis.[3]
Second, the fact that Simpson provides no examples of $\overline{A}$
(and $\overline{P}$) categories generated by word formation rule in
the lexicon may be construed as an indication that the
hypothesis in question makes incorrect predictions.
Whereas it is predicted that, apart from lexically gene-
rated $\overline{V}$ categories, lexical $\overline{N}$, $\overline{A}$, and $\overline{P}$ categories should
occur as well, only $\overline{V}$ categories and a single instance of
an $\overline{N}$ category are apparently attested.

Third, the data concerning the internal inflection of
hangers on fail to satisfy the requirement of evidential
independence, i.e. the requirement in terms of which the
extent of the factual justification which a given hypo-
thesis derives from the evidence adduced for it is related
to the degree of independence of the evidence.[4]   Thus
Selkirk (1982:128 n. 12) points out that agent nouns such
as *hanger on* occur "only if the corresponding verb-parti-
cle construction does". The existence of compound nouns
such as *hanger on* appears therefore to be closely related
to the existence of the corresponding verb-particle com-
bination, viz. *hang on*. But if the occurrence of compound
nouns such as *hangers on* is thus closely related to that
of the corresponding verb particle combinations, the oc-
currence of the former expressions can hardly be regarded
as independent evidence for an assumption that is made in
order to account for the properties of the latter construc-
tions in English.

In order to justify the assumption that $\overline{X}$ categories may
be generated by word formation rule, Simpson would have

to cite additional evidence involving syntactically com-
plex expressions, specifically nominal, adjectival and
prepositional expressions, that are completely unrelated
to verb-particle combinations. She would have to show
that, in order to account for the properties of these
expressions, it must be assumed that $\overline{X}$ categories may be
generated in the word formation component of the grammar.
In the absence of such evidence, two conclusions must be
drawn. First, the assumption that $\overline{X}$ categories may be
generated by word formation rule in the lexicon forms the
basis of incorrect predictions regarding the occurrence
of lexical $\overline{A}$ and $\overline{P}$ categories and therefore cannot be
maintained in its full generality. Second, even a weaker
version of the assumption, providing only for the genera-
tion of $\overline{N}$ and $\overline{V}$ categories in the word formation compo-
nent of the grammar, cannot be maintained, as it forms
the basis for wrong predictions about the occurrence of
lexically generated $\overline{V}$ and $\overline{N}$ categories other than verb-
particle combinations and expressions related to such
combinations. Thus, the only version of the assumption
that can be maintained, given the evidence provided by
Simpson, may be formulated as follows: $\overline{X}$ categories may
be generated in the word formation component if these
categories contain verb-particle combinations or expres-
sions related (in a sense to be made precise) to verb-
particle combinations. In other words, Simpson's assump-
tion that $\overline{X}$ categories may be generated in the word for-
mation component is ad hoc in the sense that it can be
motivated only with reference to verb-particle combina-
tions, i.e. to the phenomena for the analysis of which
this assumption is made in the first place.

Moreover, the assumption that $\overline{X}$ categories may be gene-
rated in the word formation component entails the postu-
lation of (a) word formation rule(s) which is/are iden-
tical in function to the syntactic phrase structure rule(s)
generating syntactic $\widetilde{X}$ categories. The postulation of
rules generating $\overline{X}$ categories in the word formation com-

ponent of the grammar thus constitutes a conceptual redundancy within the grammar. The fact that it entails conceptual redundancy also reflects negatively on Simpson's assumption that $\overline{X}$ categories are generated by word formation rule.

3.2.2.2   Distinguishing between lexical and syntactic $\overline{V}$

A second problem with Simpson's lexical $\overline{V}$ analysis concerns the fact that the analysis, as outlined above, incorrectly predicts that verb-particle combinations will display the same syntactic behaviour as phrases. If the syntactic separability of the verb and the particle is predicted by the hypothesis that verb-particle combinations are assigned the category level $\overline{V}$, then it must also follow from this hypothesis that the constituents of verb-particle combinations will exhibit other properties typically associated with the constituents of $\overline{V}$, i.e. with the constituents of phrasal categories. It was pointed out in par. 2.7 above that the constituents of verb-particle combinations do not behave like the constituents of syntactic phrases with regard to syntactic processes such as conjunction, modification, gapping and preposing. In order to explain why, apart from being separable by syntactic rule, verb-particle combinations are otherwise syntactically highly cohesive, a lexical $\overline{V}$ analysis would have to include a mechanism for distinguishing between lexically and syntactically generated $\overline{V}$. Simpson (1983a:10-11 n. 11) recognizes this and suggests that the difference in syntactic behaviour between the constituents of lexically generated $\overline{V}$ and those of syntactically generated $\overline{V}$ may be ascribed to the fact that a lexically generated $\overline{V}$ is "a single lexical item". That is, the fact that a $\overline{V}$ consisting of a verb and a particle is generated in the lexicon must somehow be encoded on the relevant $\overline{V}$ node in a syntactic structure in order to bar certain syntactic rules from applying to the constituents of that $\overline{V}$.

It could be argued that such an "encoding" device is indepen-
dently required for idioms, i.e. syntactic phrases with a
noncompositional meaning, the constituents of which exhibit
varying degrees of inaccessibility to syntactic rules.[5]
However, idioms are "lexical items" in the sense of being
listed in the lexicon. Verb-particle combinations, accord-
ing to Simpson, are "lexical items" by virtue of being gene-
rated by a, presumably productive, word formation rule opera-
ting in the lexicon. She (1983a:7) explicitly denies that
verb-particle combinations are lexicalized phrases on a par
with, e.g. *hit the bottle*. According to her, verb-particle
combinations are only "sometimes lexicalized". The lexical
origin of those verb-particle combinations that are not lexi-
calized, in the sense of listed in the lexicon, would thus
have to be specified by some other device than that which is
independently required for the specification of the lexical
origin, and the accompanying syntactic cohesiveness, of idiom-
atic phrases.

Simpson makes no suggestion as to how the lexical origin of
lexically generated $\overline{V}$ is to be signalled by the grammar.
Within the general framework which Simpson assumes, the dis-
tinction between lexically and syntactically generated com-
plex expressions is conventionally signalled by a difference
in category level: X^0 in the former and $X^{1<}$ in the latter
case. But category level cannot draw the required distinction
between lexically and syntactically generated V-P strings,
given Simpson's lexical $\overline{V}$ analysis of verb-particle combina-
tions. Thus, the required distinction must be drawn by some
other kind of device, the form and mode of application of
which are unclear. In addition, the grammar would have to
include a constraint stipulating that $\overline{V}$ categories marked in
this way as being lexical in origin may not be operated upon
by syntactic rules such as rules of conjunction, gapping, and
preposing and the rules responsible for generating adverbial
modifiers. But such a constraint would represent a global
constraint, i.e. a constraint governing an entire syntactic
derivation by taking into account not only the structure to

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which a given rule applies, but also the derivational history
of this structure. Global rules and constraints that have
been proposed in the literature have repeatedly been argued
to represent an objectionable kind of theoretical device
which has to be rejected because it is descriptively far too
powerful and therefore has no explanatory power.[6] Moreover,
the constraint in question would have to restrict an arbitra-
ry subclass of syntactic rules from applying to lexically
generated $\bar{V}$ categories. Whereas the rules responsible for
gapping, conjunction, preposing, and adverbial modification
have to be prevented from applying to lexically generated $\bar{V}$
categories, the rule of Particle Movement must not be so re-
stricted. Simpson (1983a:10 n. 11) admits that the distinc-
tion between those rules that can and those that must not be
allowed to apply to lexically generated $\bar{V}$ categories cannot
be drawn in a principled way within the framework of her
analysis.

Thus, Simpson's lexical $\bar{V}$ analysis may be criticized for
either making incorrect predictions about the syntactic cohe-
siveness of verb-particle combinations in English, or re-
quiring the postulation of (i) an obscure kind of device in
order to distinguish between lexically and syntactically
generated $\bar{V}$ categories, and (ii) a global constraint restric-
ting the applicability of an arbitrary subclass of syntactic
rules to structures containing verb-particle combinations on
the strength of the lexical origin of these structures. .
Simpson's lexical $\bar{V}$ analysis requires the postulation of both
the obscure kind of device referred to above and a constraint
with the arbitrary nature and excessive power of a global
constraint in order to prevent this analysis from making
wrong predictions about the syntactic behaviour of verb-par-
ticle combinations in English. This fact reflects negatively
on the lexical $\bar{V}$ analysis.

3.2.2.3   Lexical insertion at nonterminal node level

A third problem with Simpson's lexical $\bar{V}$ analysis concerns
the view of lexical insertion expressed by Simpson's (1983a:
9) claim that

> "The verb-particle ... combinations will enter
> the syntax with brackets intact. They will
> be lexically_inserted as V and Preposition...
> ...., under $\bar{V}$."

Underlying this claim is the assumption that lexical inser-
tion can occur at the level of nonterminal nodes in phrase
structure. That is, it is assumed that lexical insertion
can consist in the substitution of a nonterminal $\bar{V}$ node in a
syntactic structure by a $\bar{V}$ category generated by morphologi-
cal rule in the lexicon. This view of lexical insertion is
at odds with the view of lexical insertion assumed both in
the GB theory of grammar and in lexicalist variants of this
theory, such as that within which Simpson couches her propo-
sal. On both the Government-Binding (hence GB) theory and
lexicalist versions of GB theory, lexical insertion is as-
sumed to involve the substitution of lexical categories,
i.e. categories of the type X^0, for terminal nodes in syn-
tactic phrase structures.[7]   Thus, Simpson's postulation of
a lexical insertion device which operates at nonterminal
node level may well be taken to represent an extension of
the formal power of the grammar as conceived within a GB
framework. The question is whether such an extension is
warranted.

Let us consider first a potential objection which can not
be considered to be a valid objection to Simpson's adoption
of a device of lexical insertion at nonterminal node level.
It might be objected that Simpson appears to operate with a
notion of lexical insertion which is similar in some respects
to the notion of lexical insertion assumed by the propounders
of the theory of Generative Semantics in the late sixties and
early seventies. Thus, McCawley (1968:72) proposed that

> "each 'dictionary entry' could be regarded as a
> transformation, namely a transformation which
> <u>replaces a portion of a tree</u> that terminates
> in semantic material by a complex of syntactic
> and phonological material" [my emphasis ---
> CleR].

The similarity between McCawley's proposal and Simpson's
notion of lexical insertion for verb-particle combinations
is only superficial, however. The lexical and syntactic sub-
structures that were to be matched on McCawley and other
Generative Semanticists' account were essentially semantic
structures, i.e. structured composites of semantic predi-
cates and/or arguments. If a semantic substructure created
in the "syntax" matched a semantic substructure in the lexi-
con, the phonological matrix associated with the lexical
structure could replace the "syntactic" structure. However,
as the structures to be matched on Simpson's account are not
semantic structures, but rather structures created by diffe-
rent sets of "syntactic" rules, viz. word formation and
phrase structure rules respectively, the criticisms levelled
at the Generative Semanticists' notion of lexical insertion
are irrelevant to Simpson's proposal and therefore do not con-
stitute valid grounds for objecting to the proposal.

Simpson's adoption of a device of lexical insertion at non-
terminal node level could be argued to be objectionable on
other grounds, however. Thus, consider Simpson's failure
to provide justification for the postulation of the device
in question. The fact that Simpson provides no independent
evidence for the adoption of such a device could be construed
as an indication that her assumption that lexical insertion
of verb-particle combinations can occur at nonterminal node
level is ad hoc, its sole function being to enable her to
uphold her lexical $\overline{V}$ analysis of these constructions. Alter-
natively, her failure to provide the required justification
could indicate that she regards the use of this device to have
been so well argued in the literature that its well-foundedness
may be assumed without further argument.

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Similar proposals concerning lexical insertion at nonterminal
node level have in fact been made within the framework of
transformational grammar. Thus, Jackendoff (1975:662) pro-
posed that idioms "must be inserted onto a complex of deep-
structure nodes, in contrast to ordinary words which are
inserted onto a single node". Fraser (1976:109) makes a
similar proposal for idioms, and specifically mentions (1976:
110 n. 7) that "the use of just the topmost complex symbol
[i.e. the node dominating a verb and a particle --- CleR]
in the process of lexical insertion is relevant for verb-
particle combinations ....". More recently, Fabb (1984:240)
has suggested that "idioms, and V-Prt pairs [i.e. verb-parti-
cle combinations --- CleR] ... may be lexical items which
are paired with non-terminal nodes in the syntax".

However, not one of these proponents of lexical insertion at
nonterminal node level considers the question of whether the
extension of the descriptive apparatus of the general lin-
guistic theory required by the proposal is justified. It may
well turn out to be impossible to give an adequate account
of idioms and/or verb-particle combinations without extend-
ing the descriptive power of the grammar. But then it is
still the responsibility of those grammarians who consider
such an extension to be required, to present convincing argu-
ments showing, first, that an extension of the descriptive
power of the grammar by the adoption of the device in ques-
tion is inevitable and, second, that the analysis requiring
such an extension has greater merit than alternative analy-
ses which have been proposed to account for the phenomenon
in question and which do not require the use of this device.[8]

Notably, neither kind of justification is provided by Simp-
son. In the absence of such justification, Simpson's adop-
tion of a device of lexical insertion at nonterminal node
level may be criticized on the grounds that no claims are
made about either the formal properties or the descriptive
power of the device and that it is therefore obscure in

nature. It may also be criticized on the grounds that she
fails to provide independent justification for the use of
this device. Given these criticisms, Simpson's assumption
that lexical insertion may occur at nonterminal node level
must be considered an ad hoc measure the sole purpose of
which is to protect her lexical $\overline{V}$ analysis.

3.2.2.4   Summary

Simpson's lexical $\overline{V}$ analysis of verb-particle combinations in
English has been shown to have the following shortcomings:

(3)(a)   A lexical $\overline{V}$ analysis entails the postulation of
         a morphological rule for generating $\overline{X}$ categories
         which is (i) ad hoc and (ii) introduces concep-
         tual redundancy into the grammar by duplicating
         the function of phrase structure rules.

  (b)   A lexical $\overline{V}$ analysis either makes incorrect pre-
         dictions about the syntactic cohesiveness of verb-
         particle combinations, or it requires the postula-
         tion of (i) an obscure kind of device for signal-
         ling the lexical origin of certain $\overline{V}$ categories
         and (ii) a global constraint on the applicability
         of an arbitrary subclass of syntactic rules to $\overline{V}$
         categories generated in the lexicon.

  (c)   The device of lexical insertion at higher level
         nodes required by a lexical $\overline{V}$ analysis (i) is
         obscure in that no claims are made regarding its
         formal properties and descriptive power and
         (ii) is assumed without proper justification.

This concludes our discussion of the claims, formal devices,
and major shortcomings of Simpson's lexical $\overline{V}$ analysis of
verb-particle combinations in English. Before turning to a
consideration of the general linguistic assumptions under-

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lying Simpson's analysis, however, we shall first consider
Baayen's analysis of verb-particle combinations in Dutch as
well. The general linguistic assumptions underlying both .
analyses will be considered in par. 3.4.

3.3   Baayen's overlap analysis

3.3.1   Claims and formal devices

Baayen (1986:41) proposes that verb-particle combinations in
Dutch are formed in what he calls an optional "overlap area
of lexicon and syntax". This overlap area, according to him
(1986:62), is an area in which principles of both the lexical
and syntactic components of a grammar "are equally valid".
Verb-particle combinations constitute an overlap phenomenon
by virtue of being analyzable simultaneously as morphologi-
cally complex verbs generated by the lexical word formation
rule (4a) and as syntactic phrases generated by the syntactic
rule (4b) according to Baayen (1986:41).

(4)(a) $[_V \ X] \longrightarrow [_{V^i} \ [_{PP} \ (P)] \ [_V \ X]]$

   (b) $V^i \longrightarrow (PP) \quad V$

As regards the use of the superscript "i" in (4), note that
Baayen (1986:41) uses the superscript "!" to indicate the
category level of the verb-particle combination in his for-
mulation of the rules, but switches to the superscript "i"
later on. I shall use the latter notation throughout to avoid
confusion.

The category level V^i, according to Baayen (1986:44), is
"a level intermediate between V^0 and V^1", i.e. between the
word category level (V^0) and the phrase category level (V^1
or $\bar{V}$).[9]

On Baayen's (1986:41) analysis, the verb-particle combination
opbelt in (5a) below has the structural representation (5b).
The structural representation (5b) is derived as follows. The
lexical structure (6a) is generated by the word formation
rule (4a), whereas the syntactic configuration (6b) is gene-
rated independently by the syntactic rule (4b). At the level
of lexical insertion the lexical structure (6a) is "matched"
with the syntactic structure (6b) to yield (5b).

(5)(a) dat   Jan   haar *op* + *belt*
        that John her   up   rings
        'that John rings her up'

(b)

$$V^i$$

PP $\quad$ V

P^2

P^1

P

op $\qquad$ *belt*
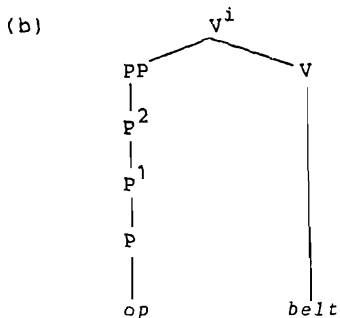
(6)(a) lexical structure: $\qquad$ (b) syntactic structure:

$$V^i$$

PP $\quad$ V

P

op $\qquad$ *belt*

$$V^i$$

PP $\quad$ V

P^2

P^1

P

In addition to the rules of (4), Baayen (1986:41) proposes
"a lexical filter which prohibits phonologically empty con-
stituents as sisters of P or P^1 in the overlap area". The
filter is presented here as (7).

(7)   *[XP_e , P^n] $n \leqslant 2$

The filter (7) has to account for the fact that a PP gene-
rated as part of a v^i constituent in the overlap area cannot
be freely expanded. Apart from bare particles such as *op* in
(5) above, only a few idiomatic PPs, such as that of (8), can
appear in this position according to Baayen (1986:39-40).

(8)   [$_{PP}$ onder de tafel] drinken
              under the table drink
         'to make hopelessly drunk'

Thus, whereas the structure (9a) would be ruled out by the
filter (7) because the particle node (P) has a phonologically
empty sister constituent (NP) which may be lexically expanded
in the syntax, the structure (9b) is not ruled out because
the NP *de tafel* is phonologically specified as the idiomatic
object of the P *onder* in the lexicon.

(9)(a)   *v^i (b) v^i

Baayen (1986:42) claims that by assuming verb-particle combinations to be formed in the overlap area at the interface of the lexical and syntactic components, he can account for the fact that these constructions exhibit "a mixture of lexical and syntactic characteristics". On the one hand, according to Baayen (1986:42), an overlap analysis can explain why the constituents of verb-particle combinations in Dutch can be separated by syntactic rules such as V-second and V-raising as illustrated in par. 2.2 above. On Baayen's analysis, verb-particle combinations can have both the structural representation (6a) and (6b). The structure (6b) is a syntactic structure generated by the syntactic rule (4b). Syntactic rules such as V-second and V-raising can therefore move the verb out of the V^i category of which it is a (syntactically) independent constituent.

On the other hand, Baayen (1986:42) claims that an overlap analysis on which verb-particle combinations are simultaneously syntactic and lexical constructs, can account for the fact that verb-particle combinations in Dutch display properties that are typically associated with words. First, according to Baayen (1986:41), the assumption that the particle "can be prespecified lexically", i.e. combined with the verb in the lexicon before insertion into a syntactic structure, can account for the fact that a verb-particle combination may display subcategorization properties which differ from those of the verb alone. According to Baayen (1986:39), an alternative analysis on which particles are freely inserted under the P node in syntactic structures such as (6b) cannot account for the fact that, whereas a verb such as *lopen* is normally intransitive in Dutch, it becomes transitive when combined with a particle such as *af* or *in* in the sentences presented as (23) in par. 2.5 above and repeated here as (10).

(10)(a)   *Hij loopt 'de tentoonstelling af.*
        he   walks the exhibition.   down
        'He visits the exhibition.'

(b) *Hij loopt de schoenen in.*

    he   walks the·shoes   in

    'He tries out the shoes.'

Thus, the idiosyncratic·subcategorization properties of verb-particle combinations are accounted for by assuming that verb-particle combinations are formed by means of the lexical rule (4a) and, like the output of lexical rules generally, may be assigned an appropriate subcategorization.

Second, according to Baayen (1986:43-44), the typical compound stress contour exhibited by verb-particle combinations can be accounted for by his overlap analysis. The category V^i, being generated in the overlap area, is simultaneously a lexical and a syntactic node. As a lexical node, V^i would constitute a possible domain for the application of the phonological ·rules assigning stress to (lexical) compounds in Dutch.

Third, Baayen's overlap analysis can also partly explain the syntactic cohesiveness of verb-particle combinations in Dutch. As was pointed out in par. 2.7 above, particles differ from ordinary intransitive prepositions in that particles allow only limited modification, as was illustrated in (43) in par. 2.7, repeated here as (11). In both (11a) and (11b) the particle *op* is modified by the adverb *helemaal*, but whereas (11b) is acceptable, (11a) is not.

(11)(a) **Jan belde me helemaal   op.*

       John rang me completely up

    '*John rang me up completely.'

   (b)   *Jan at zijn eten helemaal   op.*

       John ate his   food completely up

     'John finished his   meal completely.'

Baayen (1986:42) claims that the difference in acceptability between (11a) and (11b) can be accounted for by assuming that

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the value of n in the lexical filter (7) may be subject to
variation. Thus, given the value of n as specified in (7),
where n ≤ 2, the structure (12b) underlying the acceptable
sentence (11b) above is not ruled out by the filter. The
structure (12a), which is the structure underlying the un-
acceptable sentence (11a), is ruled out due to a "lexically
determined strengthening" of the filter (7), with the value
of n ≤ 3 instead of n ≤ 2.

(12)(a) ... (b) ...

helemaal op bellen   helemaal op eten
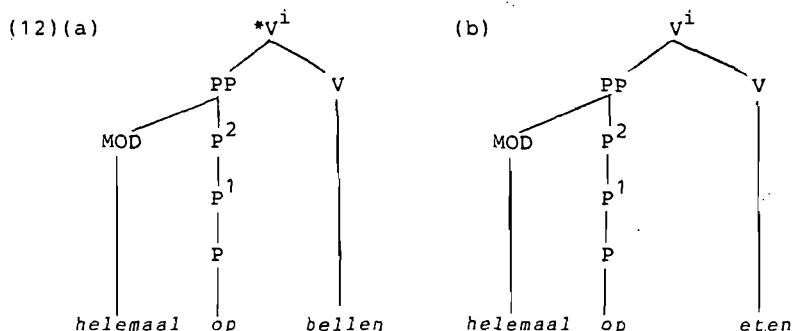
The fact that a particle such as *op* cannot be modified when
it is a constituent of a verb-particle combination such as
opbellen, is thus attributed to the lexical fixing of a para-
meter. The parameter in question is the value of n in the
filter (7). On Baayen's analysis the filter is independent-
ly required to account for the fact that the NP object of P
is never expanded syntactically if P dominates a particle,
except in the case of idomatic PPs such as that of (8) above.

Baayen's analysis can presumably account for the cohesiveness
of verb-particle combination in V-raising and *aan het* + in-
finitive constructions as well. The fact that the verb can
be raised along with the particle --- see (6) in par. 2.2
above --- could be explained by assuming that V-raising
can apply to V^i as well as to V^0.[10] In the case of the
aan het + infinitive construction, the assumption would have
to be that progressive aspect may be "spelled out" (in some

sense to be made precise, depending on the analysis assumed
for these constructions) at either the V^i level or the V^0
level. Thus it may be concluded that Baayen's overlap ana-
lysis can account for the syntactic cohesiveness of verb-
particle combinations in Dutch.

The remaining properties of verb-particle combinations men-
tioned in chapter 2 above could presumably be accounted for
on Baayen's overlap analysis as well. Thus, their ability
to take inflectional affixes internally would be consistent
with the fact that, according to Baayen (1986:63, 66 n. 11),
rules of inflection too are located in the overlap component
of the grammar. And, given that constructions generated in
the overlap component are "in the scope of the lexicon" as
claimed by Baayen (1986:66 n. 11), an overlap analysis of
verb-particle combinations would have no trouble accounting
for the characteristic semantic noncompositionality of these
combinations, or for the fact that they may serve as bases
of word formation rules.

However, Baayen's overlap analysis of verb-particle combina-
tions in Dutch also has serious shortcomings. Particularly,
this analysis achieves the descriptive success outlined
above at the cost of introducing into the grammar of Dutch
a number of formal devices which will be shown in the next
section to exhibit an array of problematic properties.

3.3.2   Shortcomings

3.3.2.1   An overlap component in the grammar

Central to Baayen's analysis of verb-particle combinations
in Dutch is the claim that the grammar of Dutch may option-
ally include a marked overlap component situated at the
interface of the lexicon and syntax, where the lexicon is
taken by Baayen to include the word formation component.
Specifically, in proposing that verb-particle combinations

in Dutch are generated in an overlap component, Baayen claims
that these constructions are derived both lexically and syn-
tactically, i.e. that they are generated simultaneously by
both a (lexical) word formation rule --- (4a) above ---
and a syntactic phrase structure rule --- (4b) above.

A first question which arises in connection with Baayen's
claim is whether the underlying assumption that the grammars
of human languages may include an overlap component could be
shown to be non-ad hoc. In order to answer this question,
let us consider the evidence provided by Baayen for this as-
sumption.

According to Baayen (1986:63), the postulation of an overlap
component in the grammar is required in order to account for
the properties of a number of different constructions in a
variety of unrelated languages. He shows that the existence
of an overlap component, initially proposed to account for
the properties of the genitive construction in Akkadian, can
also account for incorporation phenomena in Nahuatl and
Greenlandic Eskimo, compounds in Finnish and Sanskrit, and
posthead modification in Basque NPs. In addition, according
to Baayen (1986:63), an overlap component is required in
order to account for phenomena other than verb-particle com-
binations in Dutch, viz. idioms and (possibly) inflectional
affixation. Baayen claims that the fact that the phenomena
in question all exhibit a mixture of syntactic and lexical
properties can be accounted for only if it is assumed that a
degree of overlap occurs between the otherwise distinct syn-
tactic and lexical components of the grammars in question.

The fact that the properties of a wide array of phenomena
can be accounted for if the grammar is assumed to include an
overlap component does not constitute sufficient grounds for
concluding that the proposal is non-ad hoc, however. In
order for the assumption in question to be judged non-ad hoc,
it would not only have to be shown to be supported by ex-
tensive evidence, but it would also have to be shown to be
independently motivated. Baayen, however, argues for the

postulation of an overlap component in the grammar on the basis of evidence relating exclusively to the mixture of syntactic and lexical properties displayed by the construc- tions concerned.

A striking fact about the phenomena for which an overlap analysis is proposed by Baayen is that these phenomena would otherwise require an account which would be inconsistent with what Baayen (1986:1) calls "a widely held version of the lexicalist hypothesis". This is the version outlined in chapter 1 above on which word formation rules are taken to be located in the lexicon and the possible interdependence of the lexicon and syntax is taken to be highly restricted by constraints such as the Lexical Integrity Hypothesis and the No Phrase Constraint. The phenomena cited by Baayen as evi- dence for the postulated existence of an overlap component in the grammar, like verb-particle combinations in Dutch, all exhibit a mixture of syntactic and lexical properties which cannot be adequately described given the relevant lexicalist view of the organization of the grammar. He does not relate the existence of such "overlap" phenomena in the languages concerned to some other property of these languages or to one or more general linguistic principles. His failure to do so entails that the postulation of an overlap component in the grammar is motivated solely by the existence of pheno- mena which appear to pose a challenge to the lexicalist con- strual of the relationship between the lexicon and syntax. But if the existence of apparent counterexamples to the rele- vant version of the lexicalist hypothesis were the only moti- vation for proposing an overlap component in the grammar, then Baayen's proposal could indeed be argued to be ad hoc. As a formal device the postulated overlap component would represent a mere protective mechanism: a convenient waste- basket for phenomena which cannot be accounted for given the relevant conception of the relationship between the lexicon qua word formation component on the one hand and syntax on the other hand.

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It could be argued that Baayen's (1986:pp. 62ff) claim that
the overlap component is a highly marked subsystem of the
grammar relieves him of the obligation to show that the
presence of an overlap component in the *grammar of a given*
language is related to some other property of the language
concerned.   Such an argument is unsound, however, as it
rests on the   *incorrect assumption that markedness claims*
represent an escape hatch whereby the linguist can evade the
responsibility for adducing evidence in support of an analy-
sis which requires an apparently ad hoc extension of the
formal devices of a grammar.   The opposite is true in fact:
the claim that a particular grammatical option, such as the
option of making use of an *overlap* component, is marked, is
itself an empirical claim that has to be substantiated.
Moreover, it has been argued that the kind of evidence that
must be adduced in support of markedness claims has to differ
from that which is presented for ordinary grammatical and
general linguistic hypotheses.[11]   Lightfoot (1979:77) states
this requirement as follows:

> "For specific proposals concerning marked
> values to entail testable claims, these
> claims will have to hold of an 'external'
> domain, a domain other than that of the
> distribution of morphemes or grammatical
> well-formedness."

In effect then, an analysis postulating a device by which
a particular phenomenon is assigned the status of a marked
phenomenon must not only be shown to be the most highly
valued analysis available, it must also be shown to meet an
additional requirement, viz. that of making correct predic-
tions about external, i.e. extragrammatical, phenomena.
That is, the claim that the property of including an overlap
component is a marked property of some grammars increases,
not decreases, the linguist's evidential responsibility.

A second question which arises in connection with the claim
that the grammar of Dutch (as well as those of a number of

other languages) includes an overlap component concerns the
refutability of the claim. In order for this claim to be
refutable the content of the notion 'overlap component',
which is central to the claim, has to be both clear and pre-
cise. It has to be clear, first of all, what kinds of rules
and principles could overlap. Second, it has to be clear
what the constraints on the extent of the overlap between
the lexicon and syntax are. And, third, the nature and mode
of application of and the constraints on formal devices that
are unique to the overlap component, as well as the condi-
tions on which such devices are allowed, have to be clearly
specified. Unless these (minimal) requirements are met, any
claim to the effect that a given construct X is generated
in the overlap component, or that a given formal device Y
applies in the overlap component, is irrefutable.

Baayen's explication of the content of the notion 'overlap
component' clearly does not satisfy the requirements listed
above. First, according to Baayen (1986:24, 62ff), the
actual set of lexical and syntactic rules and/or principles
which constitute the overlap component of the grammar may
differ from one language to the next. Moreover, in the case
of Dutch, the rules constituting the overlap component are
neither an ordinary word formation rule in the case of (4a),
nor an ordinary syntactic rule in the case of (4b). These
rules, which are required only for generating verb-particle
combinations, both refer to a category V^i which is apparently
unique to the overlap component.

Second, there appears to be in principle no upper limit to
the extent of overlap between the lexicon and syntax which
may be allowed in a grammar. Baayen (1986:64) claims that
the languages which he has found to make use of an overlap
component each admits "only one type of productive word for-
mation" in the overlap component. However, this may be
merely an accidental fact about the languages which he hap-
pens to have investigated. It does not follow from any
principled constraint on the overlap component. The possibi-

lity is therefore not excluded that a language could be
found in which all word formation (or all of syntax for that
matter) was located in the overlap component.

Third, as part of his analysis of verb-particle combinations
in Dutch, Baayen proposes a filter --- see (7) above ---
which apparently applies only in the overlap component. He
does not indicate, however, whether filters are the only
kind of formal device that can apply uniquely in the overlap
component. Neither does he address the question of the rela-
tionship between devices, such as the rules (4a) and (4b),
which are claimed to constitute the overlap component and
devices, such as the filter (7), which are claimed to apply
in the overlap component. The latter omission is even more
damaging given that, as was pointed out above, even the
rules (4a, b) which Baayen claims to constitute the overlap
area between the lexicon and syntax of Dutch are unique to
the overlap component in that they appear not to be required
independently in the lexicon and the syntax respectively.

It must be concluded that Baayen fails to explicate the
notion 'overlap component' and that, as a result of this
failure, the claim that verb-particle combinations in Dutch
are generated in the overlap component is irrefutable.

In conclusion: it has been argued that the claim that verb-
particle combinations in Dutch are generated in an overlap
component of the grammar is problematic because (i) the
underlying assumption that the grammars of human languages
may include an overlap component is ad hoc, and (ii) the
claim is irrefutable by virtue of its being presented in
terms of an obscure notion 'overlap component'.

In addition to the problems outlined above, it will be
argued in the following sections that the claim that verb-
particle combinations are generated in an overlap component
of the grammar can be maintained only at the cost of postu-
lating additional formal devices such as a category level V^i,
a lexical filter and a device of lexical matching at higher

level nodes in the grammar of Dutch. The latter fact '
reflects negatively on the claim that verb-particle combina-
tions in Dutch are generated in an overlap component of the
grammar for two reasons. First, it will be shown that the
sole function of these additional devices is to protect
Baayen's overlap hypothesis from potentially disconfirming
evidence. This seriously detracts from the refutability of
the latter hypothesis. Second, these mechanisms themselves
will be shown to have various problematic properties which
render them undesirable as grammatical mechanisms. The fact
that these mechanisms can be argued to have problematic pro-
perties reflects negatively on the merit of the overlap
hypothesis which necessitates their postulation.

3.3.2.2   A category level V^i

We turn next to the second formal device proposed by Baayen,
viz. a category level V^i. Baayen (1986:44) claims that verb-
particle combinations belong to the category level V^i, "a new
level in the projection line of V". Baayen argues for the
postulation of an additional $\bar{X}$ level for verbs by showing
that verb-particle combinations can be assigned neither to
the category level V^0, nor to the category level V^1.

On the one hand, assigning verb-particle combinations to the
category level V^0 would have two unacceptable consequences.
First, verb-particle combinations would be structurally
nondistinct from prefixed verbs which, being generated by
rules of the word formation component, are dominated by the
lexical category V^0. If both verb-particle combinations such
as (13a) and prefixed verbs such as (13b) were assigned to
the category V^0, it would be impossible to explain why the
former, but not the latter, are separable in the syntax ac-
cording to Baayen (1986:42).

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(13)(a) *Jan* *weegt* *de brief* *over*.
          John weighs the letter over
          'John weighs the letter again.'

   (b) *Jan* *over* + *weegt* *het voorstel*.
          John over   weighs the proposal
          'John considers the proposal.'

Second, assignment of verb-particle combinations to the cate-
gory level V^0 would entail an analysis on which the particle
was Chomsky-adjoined to the verb. That is, verb-particle
combinations such as *opbellen* would have the structural repre-
sentation $[[op]_{PP} [bellen]_V0]_V0$. According to Baayen
(1986:44), extraction of the verb *bellen* from such a struc-
ture would violate the A-over-A Principle.[12]

On the other hand, assigning verb-particle combinations to
the category level V^1, i.e. one level higher in the $\overline{X}$ hierar-
chy than V^0, would have unacceptable consequences as well.
First, on such an analysis verb-particle combinations would
be structurally nondistinct from sequences consisting of an
intransitive PP and a verb according to Baayen (1986:42).
In the absence of a structural distinction between the two
types of constructions, no explanation would be available
for the differences in their syntactic behaviour illustrated
in (39)-(42) in par. 2.7 above.

Second, assigning verb-particle combinations to the category
level V^1 would make it impossible to differentiate structu-
rally between verb-particle combinations and what Baayen
(1986:45ff) calls "idiomatic groupings", or idioms. Failure
to differentiate structurally between verb-particle combina-
tions such as (14a) and idioms such as (14b) below would
make it impossible to explain why the former are productive-
ly formed and "can be understood without problems", whereas
the latter are "typically isolated and unsystematic" and
"have to be explained before they are understood", according
to Baayen (1986:46-47).[13]

(14)(a) $[_{V}i \quad [_{PP} \; op \;] \quad [_{V}0 \; bellen \;]]$

   (b) $[_{V}1 \quad [_{PP} \; de \quad dood \quad voor \quad ogen] \; [_{V}0 \; hebben \;]]$
                    the death before eyes   to have
         'to face the prospect of certain death'

According to Baayen (1986:47), the unproductivity and unsys-
tematic nature of (completely noncompositional) idioms, as
opposed to the productivity and "regularity" of the semicom-
positional verb-particle combinations, is explained by as-
signing idioms to the category level V^1 and verb-particle
combinations to the category level V^i. Baayen argues that
because V^1 structures, i.e. ordinary verb phrases, are cha-
racteristically compositional in meaning, it is predicted
that noncompositional V^1 structures will be "isolated and
unsystematic". By assigning verb-particle combinations to
the same category level as idioms, the former constructions
would be wrongly predicted to be as unproductive and to
display as high a degree of semantic noncompositionality as
idioms. We shall consider the assumptions underlying
Baayen's argument in par. 3.4 below.

On the strength of considerations such as those mentioned
above, Baayen (1986:44) concludes that verb-particle combi-
nations can be assigned neither to the category level V^0,
nor to the category level V^1. The only alternative, accor-
ding to him, is to create a new category level, viz. V^i.
The question is whether the claim that verb-particle combi-
nations belong to a category level V^i is not made merely
to protect Baayen's overlap analysis from disconfirming
evidence. For recall that, on an overlap analysis of verb-
particle combinations in Dutch, these constructions are pre-
dicted to exhibit all the properties of verbs (V^0) by virtue
of being generated by the (lexical) word formation rule (4a)
above <u>and</u> to exhibit all the properties of syntactic PP-V
sequences by virtue of being generated by the syntactic
rule (4b) above. But, of course, this prediction is incor-
rect.

On the one hand, verb-particle combinations exhibit at
least one property that is not typically associated with V^0
categories within the general framework which Baayen adopts:
viz. the property of separability by syntactic rule. On the
other hand, verb-particle combinations exhibit properties
which Baayen claims not to be typically associated with V^1
categories: e.g., properties such as noncompositional
meaning, idiosyncratic subcategorization and syntactic cohe-
siveness. It is to protect his overlap analysis of verb-
particle combinations from the negative impact of counter-
evidence such as this, that Baayen is forced to propose
the creation of the category level V^i. If verb-particle
combinations belong to the category level V^i, none of the
facts listed above pose a threat to the overlap hypothesis.

Such protection would be nonobjectionable only if it could
be shown that there was independent evidence (i) for the
postulation of a category level V^i in the grammar of Dutch
and (ii) for the claim that verb-particle combinations
should be assigned to the category level V^i. In the absence
of such independent evidence, the proposal could be argued
to be essentially ad hoc.

Baayen attempts to justify the postulation of a category
level V^i in the grammar of Dutch with reference to two pieces
of evidence. His first piece of evidence concerns postposi-
tions in Dutch. He argues that the creation of a category
level V^i allows for a descriptively adequate treatment of
the phenomenon of postposition incorporation. Whereas post-
positional phrases behave just like prepositional phrases
with respect to syntactic rules such as PP-*over*-V, Topicali-
zation, and the *aan het* + infinitive construction in Dutch,
postpositions, unlike prepositions, can optionally behave
like particles with respect to V-raising and the *aan het* +
infinitive construction. Baayen (1986:42f) illustrates this
point with reference to the sentences in (15a) and (15b).

(15)(a) *dat   hij [[$_{PP}$het water e$_i$] snel e$_i$ e$_j$] probeert*
      that he   the water   quickly   tries

      <u>in</u>$_i$ te <u>springen</u>$_j$
      in to jump
      'that he tries to jump quickly into the water'

    (b) *dat   hij [$_{PP}$ de berg e$_i$] aan het   <u>af</u>$_i$ +*
      that he   the mountain PROGRESSIVE down

      <u>rijden</u> is
      drive is
      'that he is driving down the mountain'

According to Baayen (1986:42-43) the particle-like behaviour
of postpositions such as *in* and *af* in (15) above can be ac-
counted for by assuming that they may be moved into the par-
ticle position in a syntactic structure, i.e. to the PP
position within V^i. On such an analysis the movement, or
incorporation (as Baayen calls it), of a postposition is
predicted to be possible only if the PP position within V^i
is empty, i.e. if it is not occupied by a particle. This
prediction is correct according to Baayen (1986:43). More-
over, because the incorporation is accomplished by a syn-
tactic movement rule and not by matching of lexically and
syntactically generated structures in the overlap component,
it is predicted that after incorporation of a postposition
the verb will have the same meaning and subcategorization
that it had before application of the incorporation rule.
This prediction too is correct according to Baayen.

Thus, according to Baayen, the postulation of a category
level V^i also makes it possible to account for the incorpo-
ration of postpositions in Dutch, which is a purely syntac-
tic phenomenon and not, like the formation of verb-particle
combinations, an overlap phenomenon which is partly lexical,
partly syntactic. The fact that it can account for the in-
corporation of postpositions would constitute independent
evidence for the postulation of a category level V^i if it
could be shown that a V^i account had more merit than alter-

native accounts of the behaviour of postpositions in Dutch.
Baayen offers no evidence for assuming that the category
dominating a verb and an incorporated postposition should be
V^i rather than V^0 or V^1. Notice, however, that the only
arguments that Baayen would be able to adduce in favour of
V^i rather than V^0 category status for the node dominating
the incorporated postposition, would be the very arguments
that were used to justify the postulation of the category
level V^i for the analysis of verb-particle combinations in
the first place. It could be argued, therefore, that the
data concerning postposition incorporation which Baayen ad-
duces to justify the postulation of a category level V^i in
Dutch fail to meet the requirement of evidential independence.

The second piece of evidence for the postulation of a cate-
gory level V^i concerns the putative explanatory success of
an analysis on which V^i category status is assigned to Dutch
verb-particle combinations. According to him (1986:44f),
such an analysis can explain why the suffix -baar, which is
normally stress-neutral as shown in (16a), becomes stress-
shifting when it is sister to a verb-particle combination,
as shown in (16b).

(16)(a) *beántwoord*   -   *beántwoordBAAR*
         to answer   answerable

   (b) *ómkoop*   -   *omkóopBAAR*
         around buy   around buy -able
         'to bribe'   'bribeable'

According to Baayen (1986:45), the difference in the stress
behaviour of the suffix -baar illustrated in (16a) and (16b)
can be explained by relating the difference in stress beha-
viour to a difference in the category level of the consti-
tuent to which -baar is affixed, viz. V^0 in the case of (16a)
and V^i in the case of (16b).

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There may be an alternative explanation for the phenomenon
in question however. If the stress-shifting behaviour of
-baar in (16b) were to be linked to the V^i category status
of omkoop, we would expect other suffixes to display simi-
lar variation in their stress-shifting properties when their
sister constituent is a verb-particle combination. It ap-
pears, however, that it is only adjective-forming suffixes
and never noun-forming suffixes which, when added to verb-
particle combinations, attract stress in the way that -baar
does. Thus we find the pattern of (17).

(17)(a)   Adjective-forming suffixes:

      i.   *úitdagen*   *uitdágEND*
            out challenge   out challenge -ing
            'to challenge'   'challenging'

      ii.   *aánsteken*   *aansték(E)LIJK*
            on stick   on stick -y
            'to infect'   'infectious'

   (b)   Noun-forming suffixes:

      i.   *úitgeven*   *úitgevER*
            out give   out give -er
            'to publish'   'publisher'

      ii.   *úitsluiten*   *úitsluitING*
            out lock   out lock -ing
            'to lock out'   'locking out'

      iii. *úitsteken*   *úitsteekSEL*
            out stick   out stick -ment
            'to stick out'   'protrusion'

Note that, whereas the suffix -(e)lijk is always stress-
shifting, the behaviour of -end is exactly parallel to that
of -baar: it attracts stress when its base is a verb-particle
combination, but not in other cases, as illustrated in (18).

(18)   *veróordelen*   *veróordelEND*
          'to condemn'   'condemnatory'

The fact that it is apparently only adjective-forming suf-
fixes that become stress-shifting when affixed to verb-parti-
cle combinations, and never noun-forming suffixes, suggests
that the phenomenon in question may be linked to some pro-
perty of the affixes themselves and not to the category level
of the sister constituents of the affixes. Booij (1977:par.
2.2.1.3) in fact mentions the problematic status of a number
of adjective-forming suffixes in Dutch whose stress-shifting
behaviour is inconsistent with other properties which these
affixes have in common with stress-neutral affixes. Though a
much better understanding of the stress properties of Dutch
affixes is required, it should be clear from these quite gene-
ral observations that there may conceivably be an alternative
account of the stress behaviour of *-baar*. The possibility of
an alternative account reduces the power of Baayen's argument
for the postulation of a category level V^i in that it places
a question mark over the relevance of the evidence on which
the argument is based.

It appears then that neither of the two pieces of evidence
for the postulation of a V^i category level which Baayen pre-
sents can be considered convincing, because neither piece of
evidence satisfies the applicable evidential requirements.
First, it has been shown that the data concerning postposi-
tion incorporation in Dutch fail to meet the requirement of
evidential independence. Second, it has been argued that an
alternative account of the data concerning the stress beha-
viour of the Dutch suffix *-baar* may conceivably be given, in
which case the data in question would fail to satisfy the
criterion of evidential relevance. Given the lack of con-
vincing independent evidence for the postulation of a cate-
gory level V^i for the analysis of verb-particle combinations
in Dutch, it must be concluded that the proposal is essen-
tially ad hoc.

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Thus, on the one hand, the claim that verb-particle combinations in Dutch belong to the category level V^i can be argued to be ad hoc. On the other hand, serious questions also arise about the well-foundedness of the underlying assumption that the grammar of Dutch provides for a category level V^i. For, given that constituents of the category level V^i are claimed to be both lexical and syntactic categories but, at the same time, neither fully lexical, nor fully syntactic, it may be asked what typical differences are predicted to obtain between a V^i constituent and V^0 constituents on the one hand, and between a V^i constituent and V^1 constituents on the other hand. Baayen fails to provide answers to questions such as these. In the absence of answers to such questions, on the one hand, it cannot be explained why constituents such as verb-particle combinations which are claimed to belong to the category V^i should exhibit the particular combination of lexical and syntactic properties which they do, rather than some other arbitrary set of properties. On the other hand, it is unclear what kind(s) of evidence would count as disconfirming evidence for the claim that a class of constituents X, e.g. verb-particle combinations, should be assigned the category level V^i. Thus, not only is the assumption concerning the inclusion of a category level V^i in the grammar of Dutch without any explanatory force, but it can also be accorded little merit in terms of the criterion of refutability.

In addition to the serious criticisms that have been levelled at Baayen's claim that verb-particle combinations in Dutch belong to the category level V^i in the discussion above, questions concerning the general linguistic import of the proposal arise as well. Thus it may be asked whether languages other than Dutch require the postulation of a V^i category level. Baayen (1986:53) provides only one other example of a language which makes use of the category level V^i, viz. Greenlandic Eskimo. In addition, it may be asked whether it is only the category Verb that requires an additional level in its projection line. Baayen provides no

examples of N^i, A^i, or P^i categories and offers no explana-
tion of this omission. Neither does he indicate what impli-
cations the creation of a new level in the projection line
of the category Verb has for $\overline{X}$ theory. This question would
become even more pertinent if it should appear that no cor-
responding projection level is required for the other lexical
categories, or that the relevant projection level is not
required in the grammars of human languages other than Dutch
and Greenlandic Eskimo. Questions such as these would have
to be answered before the proposal could be considered as a
serious proposal about the structure of the Dutch grammar.

In conclusion: it has been argued that the postulation of
a V^i category level is a protective measure which has the
sole function of protecting Baayen's overlap analysis of
verb-particle combinations in Dutch from potentially discon-
firming evidence. As a protective grammatical device, the
V^i hypothesis is problematic because it is both ad hoc and
apparently irrefutable. Moreover, its relation to other
rules and principles of the general linguistic theory within
the framework of which it is postulated is unclear. It must
be concluded, then, that the postulation of a V^i category
level in the grammar of Dutch is unwarranted.

3.3.2.3   A lexical filter

A third formal device required in the grammar of Dutch on
Baayen's overlap analysis of verb-particle combinations in
that language is the lexical filter presented as (7) above.
Recall that Baayen (1986:41) proposes the filter in order to
account for the fact that prepositions which function as
particles, i.e. form part of a V^i constituent, can take
neither non-lexically specified NP complements, nor prehead
modifiers (subject to lexical variation). The filter (7)
is repeated as (19) below for ease of reference.

(19) $*[XP_e, P^n]$ $n \leq 2$

A first problem with the filter (19) concerns the implica-
tions which its adoption has for the organization of the
grammar. According to Baayen (1986:42), the filter (19) has
to rule out structures such as (20a) and (20b), i.e. structures
that result from the matching of a lexically generated V^i
structure with a syntactic V^i structure in which the PP node
dominates another node apart from the lexically specified P
node. At the same time, the filter (19) must allow struc-
tures such as (20c) in which the NP node dominated by PP con-
tains a lexically specified NP.

(20)(a) ... (b) ...

(c) ...
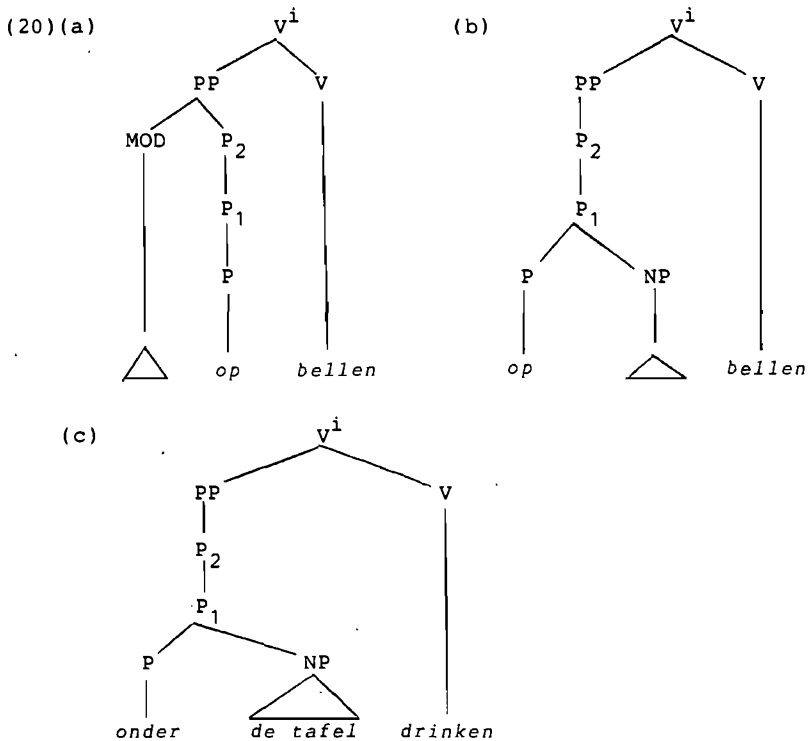
In order to account for the well-formedness of (20c) and the
ill-formedness of (20a, b), it would have to be assumed that
there are two kinds of lexical insertion, the output of only
one of which is subject to the filter (19). On the one hand,

there is the process by which lexically specified material
associated with a lexically generated structure is mapped
onto the structure resulting from the matching of such a
lexical structure with a syntactically generated structure.
On the other hand, there is ordinary lexical insertion, i.e.
the insertion of non-lexically specified material into con-
figurations generated by the phrase structure rules.

In order to rule out the structures (20a, b), the filter
(19) must presumably be assumed to apply to the structures
resulting from lexical matching. Crucially, however, the
filter (19) must be assumed not to apply to structures which
have been fully expanded lexically by the application of
ordinary lexical insertion rules. For, once the MOD and NP
nodes in (20a) and (20b) have been lexically expanded by
ordinary lexical insertion, the structures containing them
would no longer satisfy the structural description of the
filter (19) and would, wrongly, be ruled well-formed by the
filter. Thus, for the filter (19) to have the desired ef-
fect, it would have to be assumed, crucially, that lexical
matching and ordinary lexical insertion represent distinct
kinds of lexical insertion operations and that only the out-
put of the former kind of operation is subject to the filter
(19). This, of course, would create problems for the theory
of lexical insertion. We shall return to this point in par.
3.3.2.4 below.

A second problem with the filter (19) concerns Baayen's
(1986:46) proposal that the filter (19) should also apply
at the level of S-structure, i.e. after application of all
movement rules. According to Baayen, viewing the filter
as applying at the level of S-structure as well makes it
possible to account for the fact that movement from the PP
in (20c), as well as movement out of the nonverbal consti-
tuent of idioms such as those of (21), is generally prohi-
bited.

(21)(a) $[_V1 \ [_{NP} \ een \ bok] \ [_V0 \ schieten]]$
                    a   goat   to shoot
        'to blunder'

   (b) $[_V1 \ [_{AP} \ het \ goed] \ [_V0 \ hebben \ ]]$
                    it   good   to have
        'to be well off'

   (c) $[_V1 \ [_{PP} \ de \ dood \ voor \ ogen] \ [_V0 \ hebben]]$
                    the death before eyes   to have
        'to be faced with the prospect of certain death'

As was pointed out in par. 3.3.2.2 above, idioms are V^1
structures generated in the overlap component according to
Baayen (1986:46). As overlap phenomena they are subject to
the filter (19), as reformulated by Baayen to provide for
the fact that the sister constituent of V^0 may be an NP, an
AP, or a PP.

On the assumption that the filter (19) applies to the struc-
tures created by lexical matching as discussed above, the
fact that constituents of idioms cannot be syntactically
modified can be ascribed to the unavailability of empty nodes
into which modifiers may be inserted at the level of repre-
sentation at which ordinary lexical insertion takes place.
On the further assumption that the filter (19) applies at the
level of S-structure, movement from the PP in (20b), and from
the NP, AP, and PP in (21), is prohibited as well. Movement
would leave a trace, which is an empty category. And empty
categories are prohibited as sister constituents of P, N, and
A in structures generated in the overlap component by the fil-
ter (19).

Thus, if lexical matching and lexical insertion take place
at D-structure --- and Baayen makes no claim to the contrary
--- then the filter (19) has to apply twice: once at the
level of D-structure to filter out matched structures contain-
ing unexpanded nodes, and once at the level of S-structure to

filter out structures in which a constituent has been moved
out of a V^i or idiom V^1 node. To avoid having to propose
that the filter (19) be stated twice, once as a well-formed-
ness condition on D-structure representations and once as a
well-formedness condition on S-structure representations,
Baayen (1986:46) proposes that the filter (19) should be
regarded "as one of the lexical requirements which has to be
satisfied at all representational levels" in terms of a wide-
ly accepted principle of generative grammar, viz. the Projec-
tion Principle.[14]   The latter principle may be informally
formulated as follows:

(22)   Projection Principle

         The subcategorization properties of lexical
         items must be satisfied at every level of
         syntactic structure, viz. D-structure, S-
         structure, and LF.

That is, the filter (19) is proposed to be on a par with
lexical requirements such as the subcategorization properties
of a verb which are specified in the lexical entry of the verb
and which, by the Projection Principle, have to be met at
every level of syntactic representation --- i.e. at the
levels of D-structure, S-structure and LF representation ---
of any expression in which the verb may appear. A first
problematic aspect of this proposal is that the filter (19)
is not a lexical property of individual lexical items as are
subcategorization properties. The filter (19) applies to
all items formed by means of the productive lexical rule (4a).
It is thus not strictly a lexical requirement in the same
sense as that in which subcategorization properties are lexi-
cal requirements. Therefore, it is not at all obvious that
the requirement imposed by the filter (19) falls naturally
within the class of lexical requirements which have to be
satisfied at all representational levels in terms of the Pro-
jection Principle (22).

A second problematic aspect of the proposal that the filter
(19) be regarded as a lexical requirement to be satisfied
at all levels of representation is that Baayen fails to con-
sider the question of whether the filter (19) holds at the
level of LF as well, as is implied by the formulation of his
proposal. It is by no means evident that the filter should
hold at the level of LF. And if it does not, Baayen has no
grounds for claiming that the filter (19) holds at all levels
of syntactic representation and that its applicability at
both D-structure and S-structure follows from the Projection
Principle.

In the absence of evidence for the proposal that the require-
ment expressed by the filter (19) is stated only once in the
lexicon whence it is projected onto all levels of representa-
tion, the filter (19) would have to be stated twice in the
grammar: once at the level of D-structure and once at the
level of S-structure. The need to state the same condition
twice is a clear indication that a generalization is being
missed. If the relevant condition has to be stated as two
separate filters, it appears to be merely accidental that
both the impossibility of movement from the nonverbal consti-
tuent of verb-particle combinations and idioms, and the fail-
ure (in most cases) of particles and constituents of idioms
to take modifiers or complements, follow from a prohibition
on the occurrence of empty categories within the nonverbal
constituent of idioms and verb-particle combinations in Dutch.
Thus, the adoption of a lexical filter such as (19) could be
argued to entail loss of generalization.

A third problem with the filter (19) is that it is not clear
how the filter is to be restricted in a non-ad hoc manner
from applying to structures not generated in the overlap com-
ponent of the grammar. If, as Baayen claims, the filter is
stated only once in the lexicon, there would be no means of
identifying the filter as a mechanism relevant only to the
description of overlap phenomena, as is the case with the
rule generating V^i categories. The latter rule is identified
as a mechanism of the overlap component by virtue of being

stated twice: once in the lexicon and once in the syntax.
The filter (19) would have to be constrained in some way so
as to ensure that it applies only to V^i structures (and to V^1
structures only in case the latter are idioms). Such a con-
straint would have to be imposed if the filter were to rule
out as ill-formed only a structure such as (23a) underlying
the unacceptable expression (23b), and not a well-formed
structure such as (24a) which is claimed by Van Riemsdijk
and Williams (1986:297) to be the structure underlying the
acceptable expression (24b) below.[15]

(23)(a) $[_V1$ $[_{NP}$ een $[_N1$ $[_{AP}$ e$][_N0$ bok$]]]$ schieten$]$

   (b) *een wilde bok   schieten
        a   wild goat to shoot
        'to blunder'

(24)(a)   dat ik niet $[_V1$ $[_{PP}$ er$_i$ op e$_i$ $]$ vuur$]$

   (b)   dat ik niet erop vuur
         that I not it at fire
         'that I do not fire at it'

It is not clear how the problem of restricting the filter
(19) from ruling out structures such as (24a) above as ill-
formed can be solved by any means other than mere stipula-
tion.

In conclusion: it has been argued that the filter (19) has
serious shortcomings. Its adoption has been shown, first,
to presuppose a problematic distinction between two kinds of
lexical insertion and, second, to entail loss of generaliza-
tion. Third, it was shown that the filter would have to be
restricted in an apparently ad hoc manner from applying to
structures other than those generated in the overlap compo-
nent.

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The filter (19) is indispensable to Baayen's overlap analy-
sis of verb-particle combinations in Dutch, however. It is
clear that, without the filter, Baayen's overlap analysis
would make incorrect predictions about the properties of
verb-particle combinations. Particularly, Baayen's overlap
analysis predicts that verb-particle combinations will dis-
play all the properties typically displayed by words, on the
one hand, and all the properties typically displayed by
phrases, on the other hand. This prediction has already been
shown to be false. We have seen that, unlike ordinary PP-V
sequences, the PP in a verb-particle combination cannot be
freely expanded: specifically the head P cannot take a non-
lexically specified complement and in most cases cannot be
modified either. The sole function of the filter (19) is to
draw the required distinction between verb-particle combina-
tions on the one hand and ordinary syntactic phrases on
the other hand. The filter serves no other purpose than to
account for the differences in behaviour between the former
and the latter construction, which the structural represen-
tations assigned to these constructions on Baayen's overlap
analysis fail to predict.

As was indicated above, Baayen fails to argue convincingly
that the lexical filter (19) can also account for the impos-
sibility of movement out of the nonverbal constituent of V^i
and V^1 structures generated in the overlap component. The
failure of Baayen's argument entails that he is unable to
present convincing independent evidence for the adoption of
the filter (19). Moreover, he makes no attempt to show
that the need for such a filter follows from any other pro-
perty of the grammar of Dutch or from a general linguistic
principle. It must be concluded then that the filter (19)
represents an ad hoc protective mechanism whose sole func-
tion it is to protect Baayen's overlap hypothesis from poten-
tial refutation.

Given, therefore, that the only function of the filter (19)
is to protect Baayen's overlap analysis of verb-particle com-
binations in Dutch from the negative impact of counterevidence

such as that mentioned above, and given also that, as such
a protection device, the filter has the shortcomings men-
tioned above, its adoption has to be considered problematic.

3.3.2.4   Lexical insertion at nonterminal node level

A fourth formal device required by Baayen's overlap analysis
of verb-particle combinations in Dutch is the device of lexi-
cal matching to which reference was made in par. 3.3.2.3
above. The device of lexical matching is a lexical insertion
mechanism which entails the matching of constituents at a
nonterminal node level. Recall that on Baayen's analysis
the structural representation of a verb-particle combination
is a product of the matching of a V^i structure generated by
a lexical rule with a V^i structure generated by a syntactic
rule --- see (4) and (6) above. Thus, whereas lexical in-
sertion is implicitly or explicitly assumed by the majority
of both GB theorists and lexical grammarians to involve the
matching of lexical items and terminal category nodes in syn-
tactic structures, Baayen's proposal requires matching of a
lexical item (in the sense of a unit generated by a lexical
rule) with a nonterminal category node in a syntactic struc-
ture, viz. the node V^i.[16]

Baayen's proposal concerning lexical matching at the level
of V^i is analogous to Simpson's proposal regarding lexical
insertion at the category level $\overline{V}$. The criticisms levelled
at Simpson's device of lexical insertion at a higher node
level in par. 3.2.2.3 above therefore apply to Baayen's
device of lexical matching at nonterminal category level as
well. Recall that the lexical insertion device adopted by
Simpson was criticized on the grounds that it is obscure,
i.e. that no claims are made regarding its formal properties
and descriptive power and, moreover, that it is assumed with-
out proper justification. Baayen's proposal fares no better.
Baayen too fails to make any claim at all regarding the pro-
perties, mode of application and, particularly, the restric-

tions on the proposed device of lexical matching. Moreover,
Baayen provides no independent motivation for the proposed
mechanism of matching at higher node level. It apparently
applies only to structures generated in the overlap component,
i.e. verb-particle combinations and idioms. It may thus be
argued to be merely another ad hoc mechanism adopted by Baayen
for the protection of his overlap analysis.

An additional point of criticism may be raised in connection
with Baayen's mechanism of lexical matching. This criticism
concerns the relationship between the mechanism of lexical
matching and the filter (19), and the bearing which this has
on assumptions about the relationship between the mechanisms
of lexical matching and lexical insertion. It was shown in
par. 3.3.2.3 that in order for the filter (19) to have the
desired effect, it has to apply to the structures created by
lexical matching but not to those resulting from ordinary
lexical insertion. It will be argued that the assumption
about the relationship between lexical matching and ordinary
lexical insertion, which is implicit in a claim such as the
one which the adoption of the filter (19) entails, is in con-
flict with the assumption about this relationship which is
implicit in Baayen's discussion of lexical insertion. More-
over, it will be shown that the former assumption, which
Baayen would be forced to make if application of the filter
(19) were to yield the correct results, has some highly pro-
blematic aspects.

Baayen does not directly address the question of the rela-
tionship between the mechanisms of lexical matching at non-
terminal node level and ordinary lexical insertion. However,
it is clear from the few brief comments which he does make
about lexical insertion, that he implicitly assumes lexical
matching to be essentially nondistinct from lexical inser-
tion. In a note he (1986:67 n. 16) observes that

> "it is only natural for lexical insertion to
> belong to the overlap area. Lexical struc-
> tures generated in the overlap area are
> matched with their syntactic equivalents...
> ... . In fact .... the same can be said of
> the output of the core lexicon, ... here
> matching takes place with terminal nodes
> .... ."

In Baayen's view, the only difference between lexical inser-
tion and lexical matching, apparently, is the fact that in
the case of the former matching takes place at the level of
terminal nodes, whereas in the latter case matching takes
place at nonterminal node level.

But this trivial difference between lexical insertion and
lexical matching would not constitute a valid basis for the
proposed differential application of the filter (19) to
which reference was made in par.3.3.2.3. Recall that in
order for the filter (19) to apply correctly it would have
to apply to the structures generated by lexical matching,
but not to those generated by ordinary lexical insertion
rules. But then Baayen would have to assume that lexical
matching and (ordinary) lexical insertion are, in a nontri-
vial sense, distinct kinds of mechanisms. Only by making
this assumption would Baayen be able to account for the fact
that the output of lexical matching, and not that of lexical
insertion, is subject to the well-formedness condition im-
posed by the filter (19).

The assumption that lexical matching and lexical insertion
represent distinct kinds of mechanisms is problematic, how-
ever. First, in the absence of independent evidence for such
an assumption, the assumption could be argued to represent
an ad hoc protective measure, the adoption of which has only
one purpose, viz. to ensure the correct application of the
filter (19) and thereby safeguard Baayen's overlap analysis
from counterevidence. Second, acceptance of the assumption
that lexical matching and lexical insertion are distinct
kinds of mechanisms would introduce conceptual redundancy in-

to the grammar and, thus, result in loss of generalization.
The fact that conceptual redundancy arises as a result of
the adoption of the filter (19) could be adduced as the basis
for an additional argument against the adoption of the fil-
ter.

In conclusion: it has been argued that the proposed mecha-
nism of lexical matching at higher node levels has several
problematic aspects. Like the analogous mechanism proposed
by Simpson, Baayen's lexical matching device is obscure as
regards its properties and mode of application, and is
adopted without justification. Moreover, the interaction
between the device of lexical matching at higher node level
and the filter (19) has been shown to presuppose a problema-
tic assumption about the relationship between lexical match-
ing and (ordinary) lexical insertion, viz. the assumption
that these mechanisms are distinct in a nontrivial sense.
This assumption is problematic because it is no more than
an ad hoc protective measure and introduces conceptual re-
dundancy into the grammar.

3.3.2.5   Summary

Baayen's overlap analysis of verb-particle combinations in
Dutch has been shown to exhibit the following shortcomings:

(25)(a)   The claim that verb-particle combinations in
          Dutch are generated in an overlap component of
          the grammar is problematic because

              i.   the underlying assumption that the grammars
                   of human languages may include an overlap
                   component is ad hoc;

              ii. the claim is irrefutable by virtue of its
                   being presented in terms of an obscure no-
                   tion 'overlap component';   and

iii. the claim can be maintained only with the
aid of protective devices with the proble-
matic properties shown in (b)-(d) below.

(b) The proposal of a new category level V^i in the
grammar of Dutch is problematic because

i. in the absence of convincing independent
evidence for a V^i category level, it re-
presents an ad hoc mechanism whose sole
function it is to protect Baayen's over-
lap analysis from potential disconfirma-
tion;

ii. it fails to meet the requirement of refu-
tability; and

iii. its general linguistic import is unclear.

(c) The proposal that the grammar of Dutch include the
lexical filter (19) is problematic because

i. the adoption of the filter (19) presupposes
a problematic distinction between two kinds
of lexical insertion;

ii. its adoption entails loss of generalization;

iii. the filter would have to be restricted in an
apparently ad hoc manner from applying to
structures other than those generated in the
overlap component; and

iv. the filter is an ad hoc device whose sole
function it is to protect Baayen's overlap
analysis from counterevidence.

(d) The proposal of a mechanism of lexical insertion
at a higher level node in the grammar of Dutch is
problematic because

i. the mechanism is obscure as regards its for-
mal properties and mode of application and
is adopted without proper justification;

    ii.   the nature of its relationship with the
filter (19) presupposes a nontrivial dis-
tinction between lexical matching and
lexical insertion which introduces con-
ceptual redundancy into the grammar and
is ad hoc in that the sole function of
the distinction is to ensure correct ap-
plication of the filter (19).

3.4   General linguistic assumptions underlying Simpson's and Baayen's analyses

The individual shortcomings of the analyses proposed by
Simpson and Baayen to account for the properties of verb-
particle combinations in English and Dutch respectively
were discussed in detail in the preceding paragraphs. In
this paragraph, I wish to consider the general theoretical
assumptions underlying the claims expressed by these analy-
ses with a view to, ultimately, broaching the question of
the general theoretical import of the shortcomings of the
mechanisms required to express these claims. Simpson's
and Baayen's analyses express essentially the same fundamen-
tal claims about verb-particle combinations in English and
Dutch respectively. These claims are presented in (26).

(26)(a) Verb-particle combinations are generated by
        lexical rule.

    (b) Verb-particle combinations are assigned a
        phrasal category level.

On Simpson's account, verb-particle combinations in English
are generated by a word formation rule in the lexicon. Hence
they are lexical in origin. However, they are assigned a
phrasal category level, viz. $\overline{V}$. The $\overline{V}$ node dominating a
verb-particle combination has to be matched with a syntacti-

cally generated $\overline{V}$ node whenever the verb-particle combination
is inserted into a sentential structure. On Baayen's account
too, Dutch verb-particle combinations are generated by lexi-
cal rule but assigned a phrasal category level, viz. V^i.
The V^i node dominating a verb-particle combination is matched
with a V^i node generated in the syntax. Hence these constructions
are called "overlap phenomena" by Baayen: an explicit
assertion of both claims (26a) and (26b).

Let us consider the assumptions in terms of which the proper-
ties of verb-particle combinations discussed in chapter 2 are
brought to bear on the claims (26a, b) by Simpson and Baayen.
First, in the discussion of Simpson's and Baayen's analyses
in the preceding sections, it became clear that the fact that
verb-particle combinations are syntactically separable ---
see par. 2.2 --- is considered by both linguists to consti-
tute evidence in favour of analyzing verb-particle combina-
tions as non-word categories, i.e. as evidence for the claim
(26b). In both cases verb-particle combinations are assigned
a phrasal category, crucially, to account for the syntactic
separability of the constituents of verb-particle combina-
tions. The assumption in terms of which this property of
verb-particle combinations constitutes evidence for the claim
that verb-particle combinations in English and Dutch should
be analyzed as phrases may be formulated as follows:

(27)   The constituents of (syntactically complex)
         words cannot be separated by syntactic rule.

Thus, Simpson and Baayen explicitly argue that if the consti-
tuents of word, or X^0, categories are syntactically insepara-
ble, then it follows that verb-particle combinations cannot
be words since their constituents can be separated in the
syntax. Hence they must be phrases, or X^0 categories given
the familiar assumptions of $\overline{X}$ theory. The assumption (27),
of course, is merely a reflex of the Lexical Integrity Hypo-
thesis presented as (6) in chapter 1 above and repeated here
as (28).

(28)   Lexical Integrity Hypothesis (strong version)

         Syntactic rules can neither analyze nor change
         word structure.

That this is so is explicitly acknowledged by both Simpson
(1983a:1ff) and Baayen (1986:38).

Second, only Simpson explicitly adduces the fact that verb-
particle combinations take inflectional affixes internally
as evidence for assigning these expressions a phrasal struc-
ture. The assumption in terms of which the occurrence of
inflectional affixes within verb-particle combinations could
be taken to constitute evidence for the assignment of a
phrasal category to these constructions may be formulated as
follows:

(29)   Inflectional affixes cannot be attached to
         the constituents of (syntactically complex)
         words.

Given (29), the fact that inflectional affixes are attached
to the verbal constituent of a verb-particle combination
argues against analyzing these combinations as (syntactically
complex) words. Rather, the assumption (29) necessitates an
analysis in terms of which verb-particle combinations are
phrases.

If rules of inflectional affixation were taken to be syntac-
tic rules, the assumption (29) too would be a mere corollary
of the Lexical Integrity Hypothesis (28). However, within
the general theoretical framework assumed by Simpson (1983a:
1, 9), rules of inflection are taken to apply in the lexicon
after all rules of derivation and compounding have applied.
Given that inflection takes place in the lexicon, the assump-
tion (29) cannot be inferred from the Lexical Integrity Hypo-
thesis, which prevents only syntactic processes from having
access to the internal structure of complex words. The as-
sumption (29) can, however, be inferred from another princi-

ple which forms part of the general theoretical framework
which Simpson adopts, viz. the Bracket Erasure Convention.
The Bracket Erasure Convention, which ensures that all inter-
nal brackets of a word created at a given level in the lexi-
con are erased once this word forms the input to rules apply-
ing at a higher level, --- see also n. 2 above --- is
formulated as follows by Simpson (1983a:2):

(30)   Bracket Erasure Convention

         The internal categorial brackets of words
         which are created by affixation or compound-
         ing, are erased at the end of every level,
         thus making the boundaries invisible to rules
         operating at the next level.

If the internal brackets of words formed by rules of deriva-
tion and compounding are erased after these rules have applied,
it follows that inflectional affixes cannot be attached to
constituents of these words, since these constituents are no
longer visible as constituents. Thus, the assumption (29)
follows from the Bracket Erasure Convention (30).

The Bracket Erasure Convention (30), in turn, formally expres-
ses a general constraint on word formation rules which is for-
mulated as follows by Botha (1980:111):[17]

(31)   Morphological Island Constraint

         The individual constituents of the complex
         words formed by means of WFRs [= word forma-
         tion rules --- CleR] lose the ability to
         interact with inflectional, derivational and
         syntactic processes.

The Morphological Island Constraint as presented in (31) in
fact subsumes the Lexical Integrity Hypothesis (28) as well.
However, for purposes of the present discussion, we are inte-

rested in the consequences which the Morphological Island
Constraint has for the accessibility of the constituents of
complex words, not to syntactic rules, but to rules of in-
flection (and derivation).

Baayen has nothing to say about the way in which the occur-
rence of inflectional affixes within verb-particle combina-
tions in Dutch bears on the analysis of these constructions.
Neither does he present a general theory of inflection or a
specific theory of inflectional affixation for Dutch. It is
therefore not possible to state the assumption(s) in terms of
which the inflectional properties of verb-particle combina-
tions in Dutch might be explained and hence serve as evidence
for either of the claims in (26) on Baayen's account.

Each of the remaining properties of verb-particle combina-
tions, i.e. those presented in paragraphs 2.4-2.8 above, is
considered by at least one of the linguists concerned to con-
stitute evidence for the claim (26a) that verb-particle com-
binations are lexical in origin, if not in category. Thus
consider, in the third place, the semantic noncompositiona-
lity of (a significant subset of) verb-particle combinations
--- see par. 2.4. This property is considered explicitly
by both Simpson (1983a:7) and Baayen (1986:46f) to constitute
evidence in favour of deriving these combinations by means of
a productive (lexical) word formation rule which just happens
to assign a nonlexical category to its output: $\bar{V}$ (or V^1) in
the case of Simpson and V^i in the case of Baayen.

Both consider a putative difference in degree of noncomposi-
tionality between idioms and verb-particle combinations to
argue against assigning these combinations an analysis in
terms of which they are ordinary, syntactically generated
phrases. They argue that if verb-particle combinations were
to be analyzed as ordinary, syntactically generated verb
phrases ($\bar{V}$) with noncompositional meanings that are listed in
the lexicon, these expressions would be indistinguishable from
idioms. And, if no distinction were drawn between verb-parti-
cle combinations and idioms in the grammar, such a grammar

would be unable to account for certain differences which they
claim to exist between the former and the latter type of ex-
pression. These differences are formulated as shown in (32a)
by Simpson (1983a:7) and as in (32b) by Baayen (1986:46-47).

(32)(a)   ".... while verb-particle constructions are some-
          times lexicalized, they are still nowhere near
          as idiosyncratic as idioms."

     (b) "Idioms are typically isolated and unsystematic
          phrasal expressions .... In contrast --- sepa-
          rable verbal compounds [i.e. verb-particle com-
          binations --- CleR] ... may be called idioma-
          tic groupings, but they can be productively
          formed and the regularity of their appearance
          is in sharp contrast with that of idioms. New
          or unknown idioms have to be explained before
          they are understood. A newly formed separable
          verbal compound can be understood without pro-
          blems."

The quoted remarks by Simpson and Baayen are singularly lack-
ing in clarity and explicitness, with the result that it is
almost impossible to ascertain exactly what is being claimed.
The use of vague qualifications such as "sometimes" and "no-
where near" by Simpson in (32a) and Baayen's use of undefined
expressions such as "isolated" and "unsystematic", "idiomatic
grouping", "productively formed" and "regularity of appear-
ance" in (32b) serve to obscure rather than illuminate the
putative differences that are claimed to exist between verb-
particle combinations and idioms. The lack of evidence for
these claims further detracts from their merit.

Simpson appears to be claiming that verb-particle combina-
tions and idioms differ as regards the degree of their seman-
tic idiosyncracy, whereas Baayen is apparently claiming that
verb-particle combinations and idioms differ both in degree
of semantic idiosyncracy and in productivity. I shall assume
that this interpretation of the remarks quoted in (32) is cor-
rect. The question, then, is what the assumption is in terms
of which the putative differences between verb-particle combi-

nations and idioms are brought to bear on the analyses as-
signed to verb-particle combinations by Simpson and Baayen.
In order to adduce the alleged differences between verb-
particles and idioms as evidence for the claim that verb-
particle combinations are generated by a lexical word forma-
tion rule, both Simpson and Baayen must assume the following:

(33)   Noncompositional meanings associated with the
         structures generated by syntactic rules are
         less transparent than noncompositional mean-
         ings associated with the structures generated
         by lexical rules.

Given (33), the putative fact that verb-particle combinations
are characteristically noncompositional in meaning, yet more
readily interpretable than idioms, dictates an analysis where-
by verb-particle combinations are products of a lexical rather
than a syntactic rule. That is, they must be formed by means
of a word formation rule in the lexicon in terms of the gene-
ral theoretical framework assumed by Simpson and Baayen.

Neither Simpson nor Baayen presents factual evidence bearing
on the validity of the assumption (33). Baayen (1986:46f)
attempts to relate the assumption (33) to a view which is
held by, amongst others, Aronoff (1980:64f) and which may be
formulated as in (34).[18]

(34)   Semantic noncompositionality is a characteris-
         tic property of structures generated by lexi-
         cal rules, but not of structures generated by
         syntactic rules.

Thus, consider Aronoff's (1980:64f) remarks in connection
with the phenomenon that verbs derived from nouns by zero-
derivation are more likely to acquire noncompositional mean-
ings than syntactic phrases containing the nouns in question:

> "The verbs are a product of word formation,
> while the phrases are syntactic in origin.
> They therefore differ in their *lexicaliza-*
> *tion,* the degree to which their interpreta-
> tion is fixed. It is well-known that words
> desire permanence, a place in the lexicon,
> while phrases shun such status. ... [n. 10]
> This is not to say that phrases never lexi-
> calize, but rather that they are much less
> likely to do so than words. Words normally
> lexicalize, phrases only exceptionally."

Baayen (1986:46f) implicitly claims that there is some kind
of relationship between (34) and (33). According to him,
the fact that "new or unknown idioms have to be explained
before they are understood" is related to the fact that
"only a small number of all possible V^1 structures is idioma-
tic in character". In other words, the assumption (34), viz.
that the structures generated by syntactic rules are not nor-
mally assigned noncompositional meanings, entails the follow-
ing, according to Baayen. It entails that, whenever the
structures generated by syntactic rules are, exceptionally,
assigned noncompositional meanings, these meanings will be
less transparent than would the meanings of the structures
generated by lexical rules, which are characteristically
nontransparent. But, in order for the entailment to hold,
it has to be assumed that there is a relationship between
the typicalness or frequency with which a given type of
structure is associated with a noncompositional meaning on
the one hand and degree of semantic transparency on the
other hand. This assumption, like the assumption (33), is
not necessarily correct. There appears to be concensus
amongst linguists who have trodden the treacherous terrain
of semantic noncompositionality that both words and phrases
may exhibit various degrees of semantic noncompositionality,
ranging from highly transparent to completely nontransparent
meanings.[19] Factual evidence that semantically noncomposi-
tional phrases are typically less transparent than semanti-
cally noncompositional words would be hard to come by.

Given, therefore, that the assumption on which the entail-
ment rests is probably incorrect, Baayen's attempt to relate
(33) to (34) is highly suspect. This of course reflects
negatively on the assumption (33) as well. Thus, not only
do Simpson and Baayen fail to provide factual evidence in
support of the claims expressed by (33), but they are also
unable to relate this assumption to the more general assump-
tion (34).

It may be argued that Baayen's view is consonant with
another assumption that is commonly made by generative gram-
marians, viz. that there is a relationship between (un)pro-
ductivity and semantic (non)compositionality.[20] Thus Aronoff
(1976:39), following Zimmer, observes that

> "As far as I can tell, there is a direct
> link between semantic coherence and pro-
> ductivity."

And again (1976:45):

> ".... productivity goes hand in hand
> with semantic coherence."

The putative link between (un)productivity and semantic
(non)compositionality ties in with the Aronovian view that
items that are listed in the lexicon tend to acquire noncom-
positional meanings. Given that, in the words of Sproat
(1985:493), "unproductive formations must be listed under
anybody's theory", such "unproductive formations" may be as-
sumed to be in the lexicon and are therefore expected to have
noncompositional meanings. Hence the correlation between
unproductivity and noncompositional meaning. The output of
fully productive rules, by contrast, is not listed in the
lexicon and must therefore also be semantically compositional
in order to be interpretable.

Note, however, that it does not follow from the (putative) existence of a link between (un)productivity and semantic (non)compositionality that there will necessarily be a link between (un)productivity and degree of semantic (non)compositionality as Baayen presupposes. It is in any event not clear what content Baayen gives to the notion 'productive'. He (1986:46f) describes idioms as being

> "typically isolated and unsystematic phrasal
> expressions [my underlining ---   CleR]".

Verb-particle combinations, by contrast,

> "can be productively formed and the regula-
> rity of their appearance is in sharp con-
> trast with that of idioms [my underlining
> ---   CleR]".

This difference he (1946:46) calls a difference in produc- tivity. However, structurally, idioms are syntactic phrases, according to Baayen. Therefore they must be generable by the fully productive syntactic PS-rules. If "isolated" is taken to mean 'unproductive', as is implied by the contrast with "productively formed" in the quotations above, then the notion 'productive' as used by Baayen must be understood to have the content 'frequently occurring with a noncomposition- al meaning'. This is not the content that the notion 'pro- ductive' has for most generative grammarians.[21] Thus con- sider Wood's (1986:6) informal account of the various uses of the term "productivity" by generative grammarians. 'Lexi- cal' productivity, the converse of 'lexical frozenness' is defined as follows:

> "Productivity of form of an expression is used,
> as in morphology, to denote the ability to
> form new combinations freely. A complex ex-
> pression is productive if substitutions in
> one or more of its constituents produce other
> acceptable complex expressions".

'Lexical' productivity must be distinguished from 'syntac-
tic' productivity, viz.

> "the ability to undergo transformations."

The converse of the latter notion of productivity is 'trans-
formational deficiency' according to Wood. The two meanings
of "productivity" mentioned above must in turn be disting-
uished from the meaning which this term has when used to de-
note a property of syntactic rules. The latter notion of
productivity is explicated as follows by Botha (1968:150):

> "A set of syntactic rules is fully productive
> when it is formulated in terms of non-ad hoc
> concepts only and generates grammatical forms
> only. It is restrictedly productive when in
> its unrestricted form, it generates both gram-
> matical and ungrammatical forms, and if the
> generation of the ungrammatical ones has to
> be prevented by the introduction of ad hoc
> theoretical devices."

Although the above definitions of 'productivity' vary in
clarity and explicitness, it is clear that generative gram-
marians do not define this notion in the same way as it ap-
pears to be defined by Baayen.

Fourth, the fact that verb-particle combinations may display
idiosyncratic subcategorization -- see par. 2.5 -- is explicitly con-
sidered by Simpson (1983a:7) and by Baayen (1986:38f, 42) to
argue in favour of an analysis in terms of which verb-parti-
cle combinations are products of lexical rather than syntac-
tic rules. According to them, the fact that the subcatego-
rization of a verb-particle combination may differ from that
of the verb which is the head of the combination, can be
explained only if these combinations are assumed to be gene-
rated by lexical rule.

But, idiosyncratic subcategorization can be considered to
constitute evidence in favour of a lexical analysis only if
the following assumption is made:

(35)   Lexical, but not syntactic, rules can
            affect the subcategorization of a word.

Given (35), it follows that verb-particle combinations, by
virtue of the fact that they may display idiosyncratic sub-
categorization, must be generated by lexical rule.

According to Simpson (1983b:9), the assumption (35) follows
from the Projection Principle which was presented as (22)
in par. 3.3.2.3 above. In terms of this principle the sub-
categorization properties of lexical items are to be observ-
ed at all syntactic levels of representation. It follows
that a syntactic rule which created complex expressions
which differed in subcategorization from their heads would
violate the Projection Principle. Subcategorization changes
could only be effected by rules which applied in the lexicon,
whence the "new" subcategorization properties would be pro-
jected onto the relevant syntactic levels of representation.

Fifth, the ability of verb-particle combinations to serve
as bases of word formation rules --- see par. 2.6 --- is
implicitly or explicitly considered by both Simpson and
Baayen to be compatible only with an analysis on which verb-
particle combinations in English and Dutch, respectively,
are nonsyntactic in origin. Simpson (1983a:7-8) explicitly
cites the ability of verb-particle combinations to "form
passives which are used as adjectives", to "undergo zero-
derivation to form nominals" and to "have derivational suf-
fixes attached" as evidence that these combinations are
created by a word formation rule in the lexicon. According
to Baayen (1986:66 n. 10), one of the advantages of a V^i
analysis of verbs with predicative complements in Dutch is
that "Derivation is possible because ... the small clause
[i.e., the verb and its complement --- CleR] is part of a
structure in the overlap area and thus lexical". Implicit
in this claim is the assumption (36).

(36)   Lexically, but not syntactically, generated
         structures can serve as bases for word form-
         ation rules.

Given the assumption (36), it follows that if verb-particle
combinations can serve as the bases of (lexical) word form-
ation rules, they must themselves be generated in the lexi-
con. The assumption (36) is a reflex of the so-called No
Phrase Constraint which was presented as (7) in chapter 1,
and which is repeated here for ease of reference.

(37)   <u>No Phrase Constraint</u>

         Morphologically complex words cannot be
         formed (by WFRs [= word formation rules
         --- CleR]) on the basis of syntactic
         phrases.

Sixth, the syntactic cohesiveness of verb-particle combina-
tions --- see par. 2.7 --- is taken by Simpson and
Baayen to be an indication that verb-particle combinations
are lexical in origin. Thus, Simpson (1983a:11 n. 11) ob-
serves that "gapping in these structures [i.e. verb-particle
combinations --- CleR] is prohibited because the Verb and
Particle form a single lexical item". Baayen (1986:42, 46,
48) cites the resistance to prehead modifiers of verb-
particle combinations, as well as their resistance to move-
ment rules such as Topicalization and PP-*over*-V, as evidence
for not analyzing verb-particle combinations as purely syn-
tactic in origin but rather as constructs generated in the
overlap area. Because he (1986:66 n. 11) assumes the over-
lap area to be "within the scope of the lexicon", verb-
particle combinations are expected to be more "rigid", i.e.
cohesive, syntactically than ordinary syntactic phrases.

Implicit in Simpson's and Baayen's reference to the syntac-
tic cohesiveness of verb-particle combinations as evidence
for considering these expressions to be "lexical items"

(Simpson) or generated "within the scope of the lexicon"
(Baayen) is an assumption that may be formulated as in (38).

(38)   Expressions generated in the lexicon are
         syntactically cohesive.

The assumption (38), clearly, is merely a variant of the as-
sumption formulated as (27) above. As such, (38) too follows
from the Lexical Integrity Hypothesis.

Seventh, and lastly, the characteristic compound stress pat-
tern of verb-particle combinations in Dutch is considered by
Baayen to constitute evidence for generating verb-particle
combinations by lexical rule. According to him (1986:44),
generating verb-particle combinations in the overlap area
ensures that the V^1 node dominating these expressions "is
available as a lexical node and can be argued to constitute
the domain for the lexical rules of compound stress". In
order to adduce the compound stress pattern of verb-particle
combinations as evidence for the lexical origin of these ex-
pressions, Baayen has to make the assumption (39).

(39)   Lexically, but not syntactically, generated
         structures can serve as bases for word-level
         stress assignment rules.

The assumption (39) is a basic tenet of lexicalist phono-
logists/morphologists who hold that all phonological rules
which are sensitive to the internal structure of words
apply in the lexicon along with the word formation rules
and that, as a result, syntactically generated complex ex-
pressions are not available as bases for word-level phonolo-
gical rules.[22]   The assumption (39) in fact represents an
extension of the No Phrase Constraint which was presented as
(37) above. Whereas the No Phrase Constraint, as formulated
above, prohibits only word formation rules from applying to
syntactic phrases, (39) also prohibits word-level phonologi-

cal rules from applying to syntactically generated bases.
This extension of the domain of the No Phrase Constraint fol-
lows naturally given a theory of grammar on which both word
formation rules and word-level phonological rules apply
within the lexicon. The Extended No Phrase Constraint may
be formulated as follows:

(40)   The Extended No Phrase Constraint

        Syntactic phrases can serve as bases neither
        for word formation rules nor for word-level
        phonological rules.

The stress pattern of verb-particle combinations in English
is not mentioned by Simpson in the motivation of her analy-
sis of these constructions. The reason for this is probably
that the stress properties of verb-particle combinations in
English do not constitute strong evidence in support of
either a lexical or a syntactic analysis of these expres-
sions. On the one hand, the fact that verb-particle combi-
nations in English display a typical phrasal stress pattern
could be argued to constitute evidence for an analysis on
which these expressions are ordinary, syntactically gene-
rated phrases. On the other hand, the fact that the pri-
mary stress is on the nonhead constituent of verb-particle
combinations in English, as is typical of compounds, could
be used to argue for an analysis on which verb-particle
combinations are generated in the lexicon. They could then
be argued to receive primary stress in the same way as ordi-
nary compounds, viz. on the nonhead constituent, which just
happens to be the righthand constituent in the case of verb-
particle combinations. However, in view of the fact that
Simpson chooses not to indicate how the stress pattern of
verb-particle combinations in English bears on the analysis
of these expressions, any attempt to state the assumptions
in terms of which the property in question might be explain-
ed by and, hence, serve as evidence for the claims in (26)
would be mere speculation.

To summarize: it has appeared that in order to argue for the claims (26a) and (26b) on the basis of evidence relating to the properties of verb-particle combinations, Simpson and/or Baayen make the following assumptions:

(41)(a) The constituents of (syntactically complex) words are not separable by syntactic rule [= (27)].

  (b) Inflectional affixes cannot be attached to the constituents of (syntactically complex) words [= (29)].

  (c) Noncompositional meanings associated with the structures generated by syntactic rules are less transparent than noncompositional meanings associated with the structures generated by lexical rules [= (33)].

  (d) Lexical, but not syntactic, rules can affect the subcategorization of a word [= (35)].

  (e) Lexically, but not syntactically, generated structures can serve as bases for word formation rules [= (36)].

  (f) Expressions generated in the lexicon are syntactically cohesive [= (38)].

  (g) Lexically, but not syntactically, generated structures can serve as bases for word-level stress assignment rules [= (39)].

In addition, the assumptions of (41) have been either argued by Simpson and/or Baayen, or shown in the foregoing discussion, to follow from the following general theoretical assumptions:

(42)(a) The assumptions (41a) and (41f) follow from the Lexical Integrity Hypothesis as formulated in (28).

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(b) The assumption (41b) follows from the Morpho-
     logical Island Constraint as formulated in (31).

(c) The assumption (41c) is argued (although not
     convincingly) to follow from the Aronovian
     view of noncompositionality as formulated in
     (34).

(d) The assumption (41d) follows from the Projec-
     tion Principle as formulated in (22).

(e) The assumptions (41e) and (41g) follow from
     the Extended No Phrase Constraint as formu-
     lated in (40).

In addition to the general theoretical assumptions of (42),
both Simpson and Baayen subscribe to the following hypothe-
sis about the organization of a grammar:

(43)   All word formation rules (as well as word-
          level phonological rules) apply in a sepa-
          rate component of the grammar, viz. the
          lexicon.

In the case of Simpson, (1983a:1f) the hypothesis (43) is
assumed as part of the theoretical framework which she
adopts, viz. the Lexical Phonology and Morphology frame-
work of Kiparsky (1982). Baayen's adoption of the hypo-
thesis (43) is implicit in his (1986:22ff) proposals con-
cerning the way in which the putative "overlap" component
fits into the general model of a generative grammar.

Jointly, the assumptions of (42) and (43) constitute the
general theoretical framework within which Simpson's and
Baayen's analyses of verb-particle combinations are couched.
Assumptions such as the Lexical Integrity Hypothesis, the
No Phrase Constraint and the assumption (43) about the loca-

tion of word formation rules in the lexicon were shown in
chapter 1 to be constitutive of the lexicalist construal
of the organization of a grammar. These assumptions are
also accepted by Selkirk to whose analysis of verb-particle
combinations in English we now turn.

3.5   Selkirk's dual structure analysis

3.5.1   Claims and formal devices

Selkirk (1982) does not present a detailed analysis of verb-
particle combinations in English. Her proposal, sketchy as
it may be, deserves some attention, however, because of inte-
resting similarities between her analysis and Van Riemsdijk's
analysis which will be discussed in par. 4.2 below. Like the
latter analysis, Selkirk's analysis expresses the fundamental
claim that verb-particle combinations are assigned both a
word structure and a phrase structure. The only significant
difference between the two analyses lies in the nature of
the formal device that is proposed to relate the two struc-
tures. In Van Riemsdijk's case, the formal device proposed
to relate the two structural representations of a verb-par-
ticle combination is a syntactic rule. In Selkirk's case,
the rule in question is a lexical rule, as we shall see
directly below. The difference in formal devices proposed to
express essentially the same claim reflects a difference in
the general theoretical framework adopted by Selkirk and Van
Riemsdijk respectively. Whereas Selkirk explicitly accepts
the basic tenets of lexicalist morphology as set out in chap-
ter 1, Van Riemsdijk does not. This difference between the
two affords an invaluable basis for comparing and assessing
the relative merit of lexicalist and nonlexicalist approaches
to word formation.

Selkirk (1982:27-28) proposes that continuous verb-particle
combinations such as *look up* in (44a) and discontinuous verb-
particle combinations such as *look ... up* in (44b) should be
assigned different structural representations.

(44)(a) *look up the number*
    (b) *look the number up*

According to her, *look up* in (44a) is a compound verb with
the structure $[V \ P]_V$ as shown in (45a), whereas *look* and
up in (44b) are constituents of a syntactic verb phrase with
the structure $[V \ ... \ PP]_{VP}$ as shown in (45b). The symbols P
and PP stand for "preposition" (not "particle") and "prepo-
sitional phrase" respectively.

(45)(a) $[[[look]_V \ [up]_P \ ]_V \ [the \ number]_{NP} \ ]_{VP}$
    (b) $[[look]_V \ [the \ number]_{NP} \ [[up]_P \ ]_{PP} \ ]_{VP}$

The relation between (45a) and (45b) is established via a
"lexical rule", the precise nature of which Selkirk fails
to spell out.

Given that the notion 'lexical rule' could be made precise
and could be shown to be nonobjectionable, the fact that
verb-particle combinations display both properties characte-
ristically associated with words and properties that are
considered to be phrasal properties would follow from a dual
structure analysis in a straightforward way. On the one
hand, as regards the word-like properties of verb-particle
combinations, Selkirk (1982:27) points out, first, that a
compound verb analysis can account for the fact that verb-
particle combinations can serve as bases for the morpholo-
gical rule of zero-derivation which is responsible for the
formation of nouns such as *worn out, laid off* and *tuned in*.
If verb-particle combinations are compound verbs, they are
words and, as such, are available as bases of word formation
rules --- see par. 2.6 above.

Second, an analysis on which verb-particle combinations are
assigned the status of compound verbs, can account for the
syntactic cohesiveness of the verb and the particle ---
see par. 2.7 above. Selkirk (1982:28) mentions the fact that

a particle must be deleted along with the verb by the syntactic rule of Gapping which deletes a verb under identity with another verb in the sentence.[23]   She does not provide any details, but the argument presumably runs along the following lines. If the particle *up* is assumed to be part of the compound verb *looked up* in (46a), it is correctly predicted that (46b) in which the particle is deleted along with the verb will be grammatical, whereas (46c) in which only *looked* has been deleted will be ungrammatical. If *up* did not form a compound verb with *looked* the facts would be different, as illustrated by (47) in which *up* is part of a prepositional phrase *up the chimney* and therefore cannot form a compound verb with *looked*. In this case *up* cannot be deleted along with the verb, as evidenced by the ungrammaticality of (47b) and the grammaticality of (47c).

(46)(a)   *He looked up the information and she looked up*
          the results.
   (b)   *He looked up the information and she _____ __*
          the results.
   (c)   **He looked up the information and she _____ up*
          the results.

(47)(a)   *He looked up the drain-pipe and she looked up*
          the chimney.
   (b)   **He looked up the drain-pipe and she _____ __*
          the chimney.
   (c)   *He looked up the drain-pipe and she _____ up*
          the chimney.

Thus, according to Selkirk, at least two word-like properties of verb-particle combinations in English can be accounted for by assigning them the status of compound verbs, viz. their ability to serve as bases of word formation rules and their cohesiveness with respect to the Gapping rule.

On the other hand, the fact that *look* and *up* can be discon-
tinuous in a sentence such as (44b) can be accounted for by
assigning (44b) the structural representation (45b) in which
look and *up* are generated independently as constituents of
the verb phrase by the base rules. That is, the fact that
verb-particle combinations display properties typically as-
sociated with phrases is accounted for as well on a dual
structure analysis such as that proposed by Selkirk.

Despite the obvious advantages of assigning different struc-
tural representations to continuous and discontinuous verb-
particle combinations, however, a dual structure analysis
also has serious drawbacks, as evidenced by a number of short-
comings exhibited by Selkirk's analysis.

3.5.2   Shortcomings

3.5.2.1   The lexical rule

A first shortcoming of Selkirk's dual structure analysis
concerns the formal device proposed by her to relate the
two structural representations assigned to a given verb-
particle combination in English.

The assignment of distinct structural representations such
as (45a) and (45b) to a continuous verb-particle combination
such as *look up* in (44a) and the corresponding discontinuous
combination *look ... up* in (44b) respectively, expresses the
claim that the former and the latter instances of the verb-
particle combination *look up* are totally unrelated.   More
specifically, such an analysis cannot explain why *look up* in
(44a) and *look ... up* in (44b) (i) have exactly the same
noncompositional meaning (in the sense of par. 2.4 above),
and (ii) display subcategorization properties which differ
from those of the simple verb *look* in exactly the same, un-
predictable, way. The latter property is illustrated in (48)
and (49).

(48)(a)   *He looked ill.*
    (b) **He looked up ill.*
    (c) **He looked ill up.*

                         •

(49)(a)   i. **He looked the information in the library.*
         ii. *He looked in the library.*   •

    (b)   i. *He looked up the information in the library.*
         ii. **He looked up in the library.*

    (c)   i. *He looked the information up in the library.*
         ii. **He looked up in the library.*

It is clear from (48) that, whereas *look* subcategorizes for
a predicative adjective complement, neither *looked up* in
(48b), nor *looked ... up* in (48c) can occur with a predica-
tive adjective, where *look up* is a verb-particle combination
with the meaning 'search for'. By contrast, whereas the
verb *look* can never take a direct object-NP, as shown in
(49a), both the continuous verb-particle combination *looked
up* in (49b) and the discontinuous combination *looked ... up*
in (49c) obligatorily take a direct object-NP. That the co-
occurrence of *look* and *up* in the relevant verb-particle com-
bination has an unpredictable effect on subcategorization is
clearly illustrated by the fact that the cooccurrence of *look*
and *up* (meaning 'lift one's gaze') in (50) does not result
in the same subcategorization change as does the cooccurrence
of *look* and *up* (meaning 'search for') in (44) above.

(50)(a)   *He looked up (from his work).*
    (b) **He looked up the information from his work.*

The fact that the two instances of *look up* in (44) have the
same noncompositional meaning and idiosyncratic subcategori-
zation would receive a natural account on an analysis by
which (44a) and (44b) are derived from a single underlying
structure containing the verb *look up*, the conventional way
of accounting for the fact that two expressions with dis-

tinct surface structures are synonymous and that their struc-
tures satisfy the (projected) subcategorization properties
of one and the same verb. However, Selkirk maintains that
(44a) and (44b) are derived from distinct underlying struc-
tures. To account for facts such as the similarity in mean-
ing and subcategorization between (44a) and (44b), she pro-
poses that the structures underlying the two occurrences of
look up be related by lexical rule. Selkirk does not expli-
cate the notion 'lexical rule', but the lexical rule which
she envisages would clearly have to be some kind of a redun-
dancy rule. In order to establish the required relationship,
the rule would have to stipulate that for every compound
verb of the form $[V \ \ P]_V$ generated by the word formation
rules of the grammar, there exists a corresponding syntac-
tic phrase of the form $[V \ \ (NP) \ \ PP]_{VP}$ generated by the
syntactic base rules. The syntactic phrase would be predic-
ted by this rule to have exactly the same meaning and subca-
tegorization properties as the compound verb to which it is
related.

Notice, however, that a lexical rule with the power to esta-
blish the kind of relationship which Selkirk envisages would
represent a unique kind of device within generative gram-
mar.[24]   She presents no evidence which would indicate that
there is an independent need for a rule stipulating that a
(syntactically complex) verb can also, redundantly, be a
syntactic phrase. If no such evidence can be adduced, the
postulation of such a rule for the grammar of English must
be assumed to be ad hoc. The ad hocness of the putative
rule is further evident from the fact that the rule would
have to be stated so as to apply only to an arbitrary sub-
set of all possible types of complex words in English, viz.
complex verbs. And, moreover, it would have to be restric-
ted from applying to all but those complex verbs with the
structure $[V \ \ P]_V$. Selkirk offers no reason to believe that
the postulated lexical rule would not have to be thus arbi-
trarily restricted.

Thus, it appears that Selkirk's dual structure analysis of
verb-particle combinations in English can account for the
idiosyncratic meaning and/or subcategorization properties
exhibited by verb-particle combinations only by assuming
the existence of an ad hoc device, viz. a lexical rule re-
lating complex verbs and syntactic verb phrases in some,
unexplicated, way.

3.5.2.2   Compound status of continuous verb-particle combinations

A second shortcoming of Selkirk's dual structure analysis
has to do with the claim expressed by such an analysis that
(continuous) verb-particle combinations are compound verbs.
This claim entails that verb-particle combinations represent
the only left-headed compound type in English, as pointed
out by Selkirk herself (1982:19). This gives rise to two
problems.

The first is that, whereas the left-headedness of verb-part-
icle combinations in English would follow from a phrasal
analysis of such constructions in a straightforward way, it
is inconsistent with a compound analysis given the Righthand
Head Rule proposed by Williams (1981:248). The latter rule,
according to Selkirk (1982:19), expresses the language-speci-
fic generalization that "For the most part, ... English com-
pounds are right-headed endocentric constructions".

However, Selkirk (1982:20) argues that the left-headedness
of verb-particle combinations in English is explained by her
revised version of Williams's Righthand Head Rule. The
revised version of Williams's rule is informally formulated
as follows by Selkirk (1982:21):

(51)   Righthand Head Rule (revised)

        The rightmost category in X^n with the
        feature complex X will be the head.

Thus, in verb-particle combinations with the structure
[V P]$_V$ the verb is designated as the head by virtue not of
its being the rightmost constituent of the compound, but by
virtue of its being the rightmost category with the same
feature complex as the dominating category, V.

However, the reformulated Righthand Head Rule says little
more than that a complex word is right-headed when the head
is on the right and left-headed when the head is on the
left. It describes the facts of English without offering
an answer to the question why verb-particle combinations
should differ from other compounds in English by being left-
headed. For it is clear from Selkirk's (1982:ch. 2) discus-
sion of compounds in English that all endocentric compounds,
except verb-particle combinations, obey Williams's Righthand
Head Rule which states that the head of a morphologically
complex word is defined as the righthand constituent of that
word.

Thus, any attempt to account for the left-headedness of verb-
particle combinations on the basis of the revised Righthand
Head Rule (51), amounts to no more than a mere stipulation
of the exceptionality of verb-particle combinations in this
regard.

The second problem with the claim that verb-particle combi-
nations in English are left-headed compounds is that such
an analysis would require an additional ad hoc stipulation
in the grammar in order to be able to account for the in-
flectional properties of verb-particle combinations in Eng-
lish. In order to see why this is so, let us consider, .
first, how the ability of verb-particle combinations to take
inflectional affixes internally could be accounted for given
Selkirk's dual structure analysis.

On the general theory of morphology within which Selkirk's
analysis of verb-particle combinations is couched, inflec-
tional affixes are added in the word formation component of
the grammar and not in the syntax. According to Selkirk

(1982:53), inflectional affixes are subcategorized in the
lexicon for sister constituents of the category level Word
(X^0). As both a compound and its constituents belong to the
category level Word by hypothesis, an inflectional affix may
be attached either to a compound as a whole or to one of its
constituents, given that the relevant constituent satisfies
the subcategorization requirement of the affix concerned,
e.g. is a verb in the case of the past tense suffix *-ed*.
Given these assumptions, the appearance of the past tense
affix *-ed* as part of the lefthand constituent of a verb
such as *cleaned out* in (52a) would be no more unexpected
than its appearance on the verb *cleaned* in (52b).

(52)(a)   *John cleaned out his room.*
    (b)   *John cleaned his room out.*

The fact that *cleaned* in (52a) would be analyzed as part of
a compound verb and *cleaned* in (52b) as a single verb on
Selkirk's account, would make no difference to its ability
to serve as a base for the relevant inflectional affixation
rule.[25]

There is an aspect of the inflectional properties of verb-
particle combinations that remains unexplained on this ac-
count, however. If, by virtue of their subcategorization,
inflectional affixes are free to attach either to a consti-
tuent of a compound or to the compound as a whole, then it
is wrongly predicted that both (53a i) in which the suffix
-ed is attached to the verbal constituent of the compound
clean out and (53a ii) in which the suffix is attached to
the compound as a whole should be well-formed. The struc-
tures corresponding to (53a i) and (53a ii) are presented
in (53b i) and (53b ii) respectively.[26]

(53)(a)   i.   *cleaned out*
         ii. **clean outed*

(b) i.

```
              V
            /  \
          V      P
        /  \     |
       V    Af   |
       |    |    |
     clean -ed  out
```

ii.

```
              V
            /  \
          V      Af
        /  \     |
       V    P    |
       |    |    |
     clean out  -ed
```
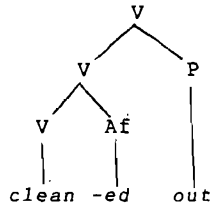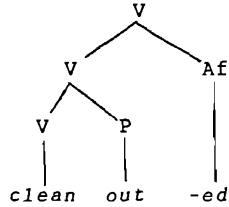
In order to prevent *clean outed from being generated, it
would have to be stipulated in the grammar that, in the case
of left-headed compounds, inflectional affixes must be at-
tached to the head of the compound and not to the compound
as a whole. Unless it could be shown that the property in
question follows from some general property of left-headed
compounds, or some property of rules of inflectional affix-
ation in general, such a stipulation would be ad hoc.

Alternatively, it would have to be assumed that inflectional
affixes always attach to the head of a compound. Apart from
making incorrect predictions about the (semantic) scope of
the affix in the case of many right-headed compounds, this
would have far-reaching implications for Selkirk's theory of
inflection. It would mean that she would either have to
give up the assumption that a compound and its constituents
both belong to the same category level, or she would have to
assume that rules of inflection are ordered before rules of
compounding. Both the latter assumptions would be problema-
tic given her general theory of word structure and her part-
icular theories of compounding and affixation in English.
Selkirk (1982:50ff), for instance, explicitly argues against
drawing a distinction between the category level of a com-
pound and the category level of its constituents, on the
grounds that such a distinction would make incorrect predic-
tions about the distribution of inflectional affixes in Eng-
lish. As regards the possibility of ordering compounding
rules after inflectional rules, Selkirk herself (1982:93)
points out that "in a context-free rewriting system (such as
the one which she assumes for the characterization of word

structure in English --- CleR], there is strictly speaking
no ordering of rules".

It therefore appears that, given Selkirk's dual structure
analysis of verb-particle combinations, it must be accepted
that the grammar of English would have to include an ad hoc
stipulation to the effect that inflectional affixes must
attach to the head of a compound just in case this compound
is left-headed.

It has to be concluded that a dual structure analysis on
which (continuous) verb-particle combinations are claimed
to be left-headed compounds has two undesirable consequen-
ces. First, the fact that verb-particle combinations are
exceptions to the Righthand Head Rule, as formulated by
Williams, has to be stipulated in the grammar. Second, the
grammar of English would have to include an ad hoc stipula-
tion to ensure that inflectional affixes attach to the head
constituent of left-headed compounds.

3.5.2.3   Empirical problems

Let us briefly consider some of the empirical consequences
of the assumption that, whereas *look up* in (44a) is a com-
pound verb, *look ... up* in (44b) is a syntactic phrase. Such
a dual structure analysis predicts that *look up* in (44a)
will behave syntactically as a single verb, whereas *look ...
up* in (44b) will display the syntactic behaviour of a phrase.
A review of the sentences presented in (35)-(38) in par. 2.7
above will show that the prediction is incorrect. Whereas
one would expect a particle which is part of a compound and
one which is not to behave differently with regard to syn-
tactic processes such as conjunction, modification, gapping
and preposing, it is clear from the data presented in par.
2.7 that they do not. That the particle cannot be conjoined
with another particle, modified by a manner adverbial, gap-
ped, or preposed is to be expected if the particle is part

of a compound verb given a constraint such as the Lexical
Integrity Hypothesis which, on the strong version (28)
above, prevents syntactic rules from changing or referring
to part of a (complex) word. But a PP which is an indepen-
dent constituent of a syntactic phrase is not expected to
be similarly restricted. Thus we would expect the (ii)-
sentences in (54) to be grammatical on an analysis such as
Selkirk's in terms of which the particle *up* is assigned the
same categorial status as the underlined expressions in the
corresponding (i)-sentences, viz. the status of a PP:

(54)(a) i. *He threw the ball up and over the wall*.
         ii. *He looked the information up and over*.

   (b) i. *He pushed the card quickly up his sleeve*.
        ii. *He looked the information quickly up*.

   (c) i. *John threw a stone up the drainpipe and
              Mary a wire over the edge of the gutter*.
        ii. *John looked the information up and Mary
              the figures over*.

   (d) i. *Up the garden path he ran!*
        ii. *Up he looked the information!*

As is clear from (54), Selkirk's assumption that a discon-
tinuous verb-particle combination such as *look ... up* in
(44b) is a syntactic verb phrase makes incorrect predictions
about its syntactic behaviour.[27] Verb-particle combinations
in which the verb and the particle are discontinuous are no
less cohesive syntactically than the corresponding combina-
tions in which the verb and the particle are adjacent.

The converse appears to be true as well: verb-particle com-
binations in which the verb and particle are adjacent are no
more cohesive syntactically than the corresponding combina-
tions in which the verb and the particle are discontinuous.
Thus, for instance, Kroch (1979:223) cites the sentence
(55a), in which the verbal constituent of the discontinuous

verb-particle combination *called (the tanks) in* has been
gapped, as acceptable. But (55b), in which *called* has been
gapped as well, is equally acceptable although in this case
called and *in* are adjacent.

(55)(a) *The general called the artillery off and* ____
the tanks in.

(b) *The general called off the artillery and* ____
in the tanks.

On Selkirk's dual structure analysis, a contrast in accept-
ability between (55a) and (55b) is predicted. Whereas (55a)
in which part of a verb phrase has been gapped is predicted
to be acceptable, (55b) in which part of a complex verb has
been gapped is predicted to be unacceptable.

Similarly, adverbial modification of a particle is possible
in some cases, regardless of whether the particle is discon-
tinuous from its associated verb or not. Thus, Kroch (1979:
222) cites (56a), in which the discontinuous particle *up* is
modified by the adverbial phrase *part way*, as acceptable.
But, given a suitably "heavy" direct object-NP to counter-
balance (prosodically) the "heaviness" of the adverbially
modified particle, a sentence such as (56b), in which the
modified particle is adjacent to the verb, is as acceptable
as its counterpart (56c) in which the modified particle is
nonadjacent to the verb.[28]

(56)(a) *The attendant filled the tank PART WAY up.*

(b) *The attendant filled ONLY PART WAY up the tank*
of which the top had been damaged by a stone.

(c) *The attendant filled the tank of which the top*
had been damaged by a stone ONLY PART WAY up.

Once again, Selkirk's dual structure analysis wrongly pre-
dicts that (56b), in which a constituent of a complex verb
is adverbially modified, should be unacceptable, in contrast
to (56c) in which, on her analysis, the modified constituent
is not part of a complex verb.

In response to such criticism Selkirk could argue that *fil-
led up* is a discontinuous verb-particle combination in both
(56b) and (56c) and that its adjacency to the verb in (56b)
is merely the result of the application of a rule of Heavy
NP Shift, a rule which moves "heavy" NPs --- see n. 28
above --- to the end of the sentence. However, the assump-
tion of a rule of Heavy NP Shift would have unwelcome conse-
quences for Selkirk. The fact that a particle always follows
a pronominal direct object—NP has been argued by, e.g. Bo-
linger (1971:50ff) and Hoffman (1978:342ff) to be the result
of the heaviness of the particle in relation to pronouns.
If the sentence-final position of heavy constituents were
to be taken to be the result of the application of a move-
ment rule, the unacceptability of (57a) and the acceptabi-
lity of (57b) below would have to be accounted for in terms
of such a movement rule.

(57)(a) *The attendant *filled up* it.
    (b) The attendant *filled* it *up*.

Specifically, it would have to be assumed that the unaccept-
ability of (57a) is the result of nonapplication of the rule
moving heavy constituents (the particle in this case) to the
sentence-final position. Such a solution, however, would
presuppose that the particle can be moved, which would be
embarrassing to Selkirk's dual structure analysis on which
the particle in sentences such as (57a) is part of a complex
verb and hence inaccessible to syntactic movement rules.

Hoffman (1978:342) proposes that the obligatory sentence-
final position of particles when the direct object-NP is a
pronoun, as well as heavy-NP-shift phenomena, may be accoun-
ted for by adopting the following surface filter:

(58)   *PP NP   unless NP is heavier than PP.

Given a filter such as (58) (suitably modified so as to
apply to sentences such as (57a) as well), the unacceptabi-
lity of (57a) could be accounted for without the embarras-
sing consequences for a dual structure analysis that an
account in terms of movement would have. Sentences such as
(57a) would be generated by the grammar, as predicted by
Selkirk's dual structure analysis but would be ruled ill-
formed by the filter (58) which is part of the PF component
according to Hoffman, and therefore presumably not subject
to syntactic constraints such as the Lexical Integrity Hypo-
thesis.

Thus, it appears that an account of the facts of (57) above
in terms of a filter such as (58) would be consistent with
Selkirk's dual structure analysis of verb-particle combina-
tions, but not an account in terms of a movement rule. If
this is so, however, Selkirk could not argue that the accept-
ability of (56b) above is the result of the application of
a rule of Heavy NP Shift. The acceptability of this sen-
tence would be the result of the fact that the NP *the tank
of which* ...., for purposes of the filter (58), is not
judged to be heavier in the appropriate sense than the
modified particle *only part way up*. Hence, the criticism
that Selkirk's dual structure analysis wrongly predicts a
contrast in acceptability between (56b) and (56c) above
would stand.

It must be concluded, then, that in assigning distinct
structural representations to continuous and discontinuous
verb-particle combinations respectively, Selkirk's dual
structure analysis makes incorrect predictions about the
syntactic behaviour of these constructions.

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3.5.2.4   Summary

Selkirk's dual structure analysis of verb-particle combina-
tions in English has been shown to have the following short-
comings:

(59)(a)   In order to account for the fact that conti-
           nuous and discontinuous verb-particle combina-
           tions have the same (often idiosyncratic)
           meaning and subcategorization properties, a
           dual structure analysis entails the postula-
           tion of a unique kind of device, viz. a
           lexical rule, the properties of which are un-
           clear.

     (b)   A dual structure analysis entails that verb-
           particle combinations are analyzed as left-
           headed compounds. Without additional ad hoc
           stipulations in the grammar such an analysis

           (i)   is counter to the Righthand Head Rule
                 as formulated by Williams, and
           (ii) forms the basis of incorrect predic-
                 tions regarding the position of the
                 inflectional past tense affix.

     (c)   A dual structure analysis incorrectly predicts

           (i)   that the constituents of discontinuous
                 verb-particle combinations will be more
                 accessible to syntactic rules than the
                 constituents of the corresponding conti-
                 nuous verb-particle combinations, and
           (ii) that the constituents of continuous
                 verb-particle combinations will be less
                 accessible to syntactic rules than the
                 constituents of the corresponding dis-
                 continuous combinations.

3.5.3   General linguistic assumptions

Let us turn now to the general linguistic assumptions under-
lying the central claims expressed by Selkirk's dual struc-
ture analysis of verb-particle combinations in English. The
central claims expressed by Selkirk's dual structure analy-
sis have been shown to be the following:

(60)(a)   Continuous verb-particle combinations are
          compound verbs.

   (b)   Discontinuous verb-particle combinations are
          syntactic phrases.

   (c)   Continuous and discontinuous verb-particle
          combinations are related by lexical rule.

Consider, first, the claim (60a). Selkirk is forced to hypo-
thesize that verb-particle combinations are compound verbs
in English because, as we saw in par. 3.5.1 above, she (1982:
27) wants to be able to argue that apparently exocentric
nominal and adjectival compounds such as *sit-in, runaway,
worn out, laid off*, etc. are not exocentric at all. She
claims that they are zero-derived from the corresponding
verb-particle combinations instead. However, the latter claim
would hold just in case verb-particle combinations themselves
were compound verbs rather than syntactic phrases, since Sel-
kirk (1982:8) accepts the following general constraint on the
input to word formation rules:

(61)   Major constituents of the syntax do not ap-
          pear within morphological structures generated
          by the word structure rules.

The assumption (61), clearly, is nondistinct from the No
Phrase Constraint presented as (37) above. Thus, given (61),
and given also that Selkirk wishes to maintain that verb-par-

ticle combinations can serve as bases for the rules of zero-derivation responsible for generating the relevant nominal and adjectival compounds, it follows that verb-particle combinations cannot be syntactic phrases, but must themselves be (complex) words as claimed in (60a).

Consider next the claim (60b). Given that Selkirk has independent reasons for maintaining that (continuous) verb-particle combinations must be analyzed as compound verbs, as shown above, there are in principle two possible analyses of discontinuous verb-particle combinations available to her. The first is an analysis on which discontinuous verb-particle combinations are derived from the same underlying structure as the corresponding continuous combinations. The second is an analysis on which continuous and discontinuous verb-particle combinations are derived from distinct underlying structures.

Now, with regard to the first possibility, the crucial question would be what kind of formal device is available for deriving discontinuous verb-particle combinations from an underlying compound structure given the general theoretical framework adopted by Selkirk. Selkirk (1982:19) explicitly denies that lexical transformations play a role in the grammar of English. Nor does she provide for discontinuous lexical insertion. Therefore, neither of these formal mechanisms is available for the derivation of the structure underlying a discontinuous verb-particle combination from the (compound) structure underlying the corresponding continuous combination. The only device available within Selkirk's framework is a syntactic movement rule. But the rule deriving the discontinuous verb-particle combination from the structure underlying the corresponding continuous combination would have the effect of changing the structure of a (complex) word. And this is impossible since Selkirk (1982:70) accepts the following general condition on syntactic rules:

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(62)   No deletion or movement transformation may
         involve categories of both word structure and
         phrase structure.

The condition (62) is merely a reflex of the Lexical Inte-
grity Hypothesis (28) above and was in fact presented as
the weaker version of the latter hypothesis in (5) in
chapter 1 above.   Given (62), a discontinuous verb-parti-
cle combination cannot be derived from a (complex) word
structure, such as that underlying the corresponding conti-
nuous combination, by means of a syntactic movement rule.

As there is no formal device available for relating a dis-
continuous verb-particle combination to an underlying word
structure, given Selkirk's general theoretical framework,
she has to adopt the alternative analysis on which conti-
nuous and discontinuous verb-particle combinations are
claimed to be derived from distinct underlying structures.
Moreover, having ruled out the possibility of deriving a
discontinuous verb-particle combination from an underlying
(complex) word structure, it follows that such combinations
must be generated as syntactic phrases at the level of D-
structure, as claimed in (60b).

The third claim, (60c), was shown in par. 3.5.2.1 above to
form the basis of a potential explanation for the fact that
corresponding continuous and discontinuous verb-particle
combinations share the same (often noncompositional) meaning
and the same subcategorization properties. The latter pro-
perty of verb-particle combinations could be brought to bear
on the claim (60c) only if Selkirk accepted a version of the
Projection Principle (22) above. That is, given the Projec-
tion Principle, the fact that the subcategorization proper-
ties of corresponding continuous and discontinuous verb-par-
ticle combinations differed from those of their verbal head
in exactly the same way could be accounted for only if the
relevant subcategorization properties were projected from

the same subcategorization frame in the lexicon. On an ana-
lysis such as Selkirk's, within the framework of which the
two combinations are assigned distinct structural represen-
tations, the Projection Principle would be satisfied only
if the two structural representations were related in the
lexicon, i.e. by a lexical rule. Such a lexical rule could
presumably express the generalization that whatever the
lexical properties, e.g. noncompositional meaning and idio-
syncratic subcategorization, that are associated with a
verb-particle combination which is assigned a compound verb
structure by the relevant word formation rule, these lexi-
cal properties are associated with the related structure
generated independently by the phrase structure rules as
well. Although Selkirk does not explicitly present the
argument outlined above, her acceptance of the Projection
Principle is implicit in her (1982:40, 62) acceptance of a
general tenet of Lexical Functional Grammar, viz. the assump-
tion (63).[29]

(63)   Operations which involve changes in the sub-
         categorization properties of words, should
         be viewed as lexical operations.

Recall, next, that Selkirk does not explicitly argue for any
of the claims of (60) on the basis of the inflectional pro-
perties of verb-particle combinations in English. However,
it was shown in par. 3.5.2.2 above that, given an additional
stipulation in the grammar, her dual structure analysis is
consistent with the following assumption which forms part of
her theory of inflection in English:

(64)   An inflectional affix can be attached to any
         constituent of the category level Word (X^0),
         regardless of whether this constituent is
         syntactically complex, noncomplex, or a con-
         stituent of a (syntactically complex) word.

Notice that the assumption (64) is incompatible with the
Morphological Island Constraint presented as (31) above.
As was shown in par. 3.5.2.2 above, the rule introducing
the past tense suffix -ed into verb-particle combinations
assigned a compound word structure has to be assumed to be
sensitive to the internal structure of complex words. If
not, it would be impossible to explain why the past tense
suffix was always attached to the verbal head of the com-
pound, never to the compound as a whole.

Finally, it is impossible to state the general linguistic
assumptions in terms of which the remaining properties of
verb-particle combinations discussed in chapter 2 could be
brought to bear on the claims of (60), as Selkirk does not
argue for any of these claims on the basis of the proper-
ties concerned. The relevant properties are the syntactic
cohesiveness of verb-particle combinations --- see par.
2.7 above --- and the stress pattern of these combina-
tions --- see par. 2.8 above. Recall too that Selkirk's
failure to consider the former property, the syntactic
cohesiveness of verb-particle combinations, was shown in
par. 3.5.2.3 above to cause problems for her dual struc-
ture analysis.

To summarize: underlying the claims (60 a-c) expressed by
Selkirk's dual structure analysis of verb-particle combina-
tions in English are the following assumptions:

(65)(a)   Major constituents of the syntax do not appear
          within morphological structures generated by
          the word structure rules [= (61)].

   (b)   No deletion or movement transformation may in-
          volve categories of both word structure and
          phrase structure [= (62)].

   (c)   Operations which involve changes in the sub-
          categorization properties of words, should be
          viewed as lexical operations [= (63)].

The assumptions of (65) have been argued to be nondistinct
from, or to follow from, the following general linguistic
assumptions:

(66)(a)   The assumption (65a) is nondistinct from the
          No Phrase Constraint presented as (37) above.

    (b)   The assumption (65b) follows from the Lexical
          Integrity Hypothesis presented in (28) above.

    (c)   The assumption (65c) follows from the Projec-
          tion Principle (22) above.

In addition, Selkirk's dual structure analysis was shown to
be inconsistent with the Morphological Island Constraint
presented as (31) above by virtue of including the assump-
tion (64), viz. that an inflectional affix can be attached
to any constituent of the category level Word (X^0), regard-
less of whether this constituent is syntactically complex,
noncomplex, or a constituent of a (syntactically complex)
word.

In conclusion, Selkirk's dual structure analysis is consis-
tent with a view of the place of word formation rules in
the grammar which is expressed as follows by her (1982:10):

(67)   Word formation rules form part of an entire-
          ly distinct component of the grammar, viz.
          the lexical component, or the lexicon.

She (1982:10) stresses, however, that a model of grammar on
which word formation rules formed part of the system of base
rules of the syntactic component would be equally consistent
with her general theory of word structure. Whatever the
exact "location" of the lexicon within the grammar, it is
clear that Selkirk accepts that the structures generated in
the lexicon, or word structure component in Selkirk's termi-
nology, are inserted into syntactic deep structures and are

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treated as units by rules of syntax.

This concludes our discussion of three analyses of verb-
particle combinations which are presented within the frame-
work of various versions of the theory of lexicalist mor-
phology. We considered the major general linguistic as-
sumptions underlying the analyses in question, as well as
some of the shortcomings of these analyses. These short-
comings must ultimately bear negatively on the general
theoretical framework in which the analyses are couched.
The exact import of these shortcomings will be assessed
in chapter 5 after we have considered two alternative ana-
lyses: analyses which differ from those considered in the
present chapter in that they are not presented within an
explicit lexicalist framework.

Chapter   4

NONLEXICALIST ANALYSES OF VERB-PARTICLE COMBINATIONS

4.1   General

This chapter will be devoted to a critical appraisal of two
analyses of verb-particle combinations which are not couched
in an explicit lexicalist general theoretical framework.

The analyses to be discussed are Van Riemsdijk's (1978) ana-
lysis of verb-particle combinations in Dutch (par. 4.2) and
Stowell's (1981) analysis of verb-particle combinations in
both English and Dutch (par. 4.3). Whereas on Stowell's
analysis verb-particle combinations are assigned the single
category label X^0, Van Riemsdijk, like Selkirk, claims that
verb-particle combinations belong to both the category X^0
and the category $\overline{X}$, i.e. that they are both words and phrases.

The immediate aim of the discussion in this as in the pre-
vious chapter is, on the one hand, to identify and analyze
shortcomings of (different kinds of) proposals that have
been made for the analysis of verb-particle combinations in
English and Dutch, and, on the other hand, to identify the
major general linguistic assumptions underlying these analy-
ses. The ultimate aim is to establish a basis for assessing
the adequacy of the lexicalist construal of the relationship
between syntax and word formation as outlined in chapter 1.

The discussion of each analysis will be organized as follows.
First a brief outline will be given of the central claims
embodied in the analysis and the formal devices proposed to
express these claims. This will be followed by a discussion
of the major shortcomings of the analysis. And, finally, an
attempt will be made to identify the major general linguis-
tic assumptions underlying the analysis.

4.2   Van Riemsdijk's P-shift analysis

4.2.1   Claims and formal devices

In a discussion of the syntax of Dutch prepositional phrases
Van Riemsdijk (1978:ch. 3), following Emonds (1972), proposes
that particles in Dutch should be analyzed as belonging to
the same category as prepositions.[1]   Thus, like ordinary
prepositions and postpositions, particles in Dutch are gene-
rated in the P''' position immediately to the left of the verb
by the base rule (1) according to Van Riemsdijk (1978:33, 54).

(1) $V^1 \longrightarrow \begin{Bmatrix} N''' \\ V''' \end{Bmatrix} - \begin{Bmatrix} P''' \\ A''' \end{Bmatrix} - X''' - P''' - V$

Particles can optionally undergo a syntactic rule which Van
Riemsdijk (1978:108) calls P-shift and which has the effect
of incorporating the particle in the verb. That is, the
particle.is moved into, or substituted for, an empty posi-
tion within the constituent dominated by the adjacent V-node.
The P-shift rule is shown in (2).

(2)   P-shift

	X	-	P	-	Y	-	V	-	Z
	1		2		3		4		5
⟹	1		e		2		4		5

The structure of the verb after application of P-shift is
that of a complex verb, as shown in (3).

(3) $[_V \; P - V]_V$

According to Van Riemsdijk (1978:107), the (empty) slot
represented by Y in the structural description of the P-
shift rule (2) is generated by an independently needed word

formation rule, which he formulates as in (4).

(4) $[_V X]_V \longrightarrow [_V [_P (Y)]_P [_V X]_V]_V$

The word formation rule (4) is independently needed in the
grammar of Dutch to account for the occurrence of verbs with
inseparable prefixes according to Van Riemsdijk.[2]

By assuming that particles are independent constituents at
D-structure but may optionally become part of the verb as a
result of the application of P-shift, Van Riemsdijk claims
to be able to account for the ambiguous syntactic behaviour
of verb-particle combinations with respect to syntactic
rules such as V-raising. Thus, on Van Riemsdijk's analy-
sis, the difference between (5a), in which the particle
op is separated from the verb *te bellen* after application
of V-raising, and (5b), in which op moves along with the
verb, is accounted for by deriving both sentences from the
underlying structure (6).

(5)(a)   *omdat   hij [mij op e] probeert te bellen*
         because he   me up   tries   to call
         'because he tries to call me up'

   (b)   *omdat   hij [mij e] probeert op te bellen*
         because he   me   tries   up to call
         'because he tries to call me up'

The structures of the V^1 nodes in (6) below are specified
by the base rule (1) and the structure of the V_y node is
specified by the word formation rule (4).

(6)

omdat hij e mij op e te bellen probeert
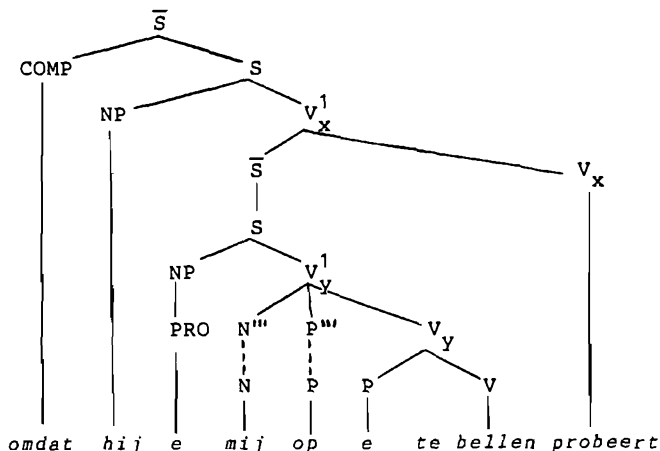
If P-shift does not apply to (6), the particle *op* remains in
the P''' position and the rule of V-raising moves only the
bare embedded verb *te bellen* to the final position in the VP
(V_x^1) of the matrix clause. Thus (5a) is derived. To derive
(5b), P-shift is assumed first to apply to (6) giving the
structure (7).

(7)

omdat hij e mij e op te bellen probeert

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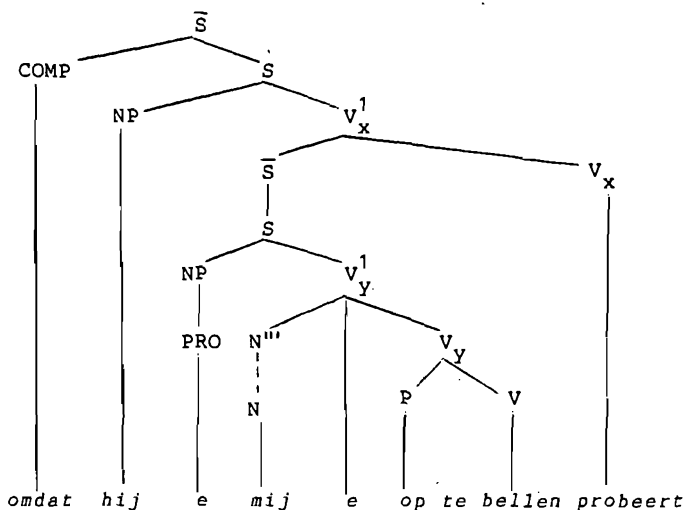
When V-raising subsequently applies to move the embedded
verb (V_y), the incorporated particle is moved along with
the verb.

4.2.2   Shortcomings

Recall that by postulating the rule of P-shift presented in
(2) above Van Riemsdijk can explain why a particle and a
verb can optionally behave like a single verb with respect
to a syntactic rule such as V-raising, as illustrated in (5).
The rule of P-shift has the effect of creating a complex
verb by incorporating the particle in an empty slot in the
substructure of the verb. After application of P-shift,
the verb-particle combination is treated as a single verb
by the relevant syntactic rules. Van Riemsdijk's proposal
that a verb-particle combination created by the applica-
tion of P-shift is a verb, i.e. a lexical category, thus
has the merit of being able to account for the fact that
these combinations display properties which are characte-
ristically associated with words. At the same time, by
assuming that particles and verbs are independent consti-
tuents at D-structure, he has a potential explanation for
the fact that particles are not moved along with the verb
by the rule of V-second and that inflectional affixes at-
tach to the verb alone and not to the verb-particle combi-
nation as a whole. That is, the fact that verb-particle
combinations exhibit properties typically associated with
phrases would follow from the hypothesis that they are
phrases at D-structure.

Van Riemsdijk's analysis exhibits a number of systematic
and empirical shortcomings, however. We first consider the
systematic shortcomings.

4.2.2.1   Problems of a systematic nature

A first systematic shortcoming of Van Riemsdijk's analysis
concerns the claim that the rule of P-shift presented in
(2) above is a syntactic substitution rule which inserts a
lexical item into an empty structural position already pre-
sent in the verbal substructure. At least three nontrivial
objections may be raised to this claim. First, Van Riems-
dijk's claim is based on the assumption that empty positions
generated within complex word structures by the rules of
word formation are available as receptacles for constituents
moved by syntactic rules. The principle of structure-
preservation to which he (1978:107) appeals to warrant this
assumption, however, is irrelevant to the issue at hand, as
is clear from the way in which the principle is defined by
Van Riemsdijk and Williams (1986:47):

(8)   "Universal Grammar specifies that certain
          transformations must be structure preserving.
          This implies --- that <u>positions generated</u>
          <u>by the phrase structure rules</u> [my emphasis
          --- CleR] need not be filled by lexical in-
          sertion but may be filled at a later stage
          of the derivation by a movement rule."

The principle of structure preservation, as formulated,
does not refer to positions generated by word formation
rules. This principle can therefore not be considered to
warrant the assumption made by Van Riemsdijk.

Second, apart from being based on an unwarranted assump-
tion, the claim that P-shift is a substitution rule in the
intended sense entails that P-shift apparently represents
a unique kind of mechanism in the grammar of Dutch. On the
one hand, if the grammar of Dutch is to include a rule
which allows a syntactic constituent to be moved into an
empty position in a complex verb structure, then surely it
is to be expected that the grammar of Dutch will also con-

tain rules for moving syntactic constituents into empty
positions within the substructures of other productively
formed complex lexical categories, such as compound nouns
and adjectives. Yet Van Riemsdijk provides no evidence to
indicate that the P-shift rule generalizes to other cate-
gories. Nor does he provide reasons why the operation
described by the rule of P-shift should be limited to
verbs.

Third, given that Van Riemsdijk's claim entails that the
relevant empty position in the structure of the verb is
accessible to at least one syntactic rule, viz. the rule of
P-shift, it may be expected that this position will be
accessible to other rules and principles applying at the
various levels of syntactic structure as well. Van Riems-
dijk fails to indicate how the syntactically accessible,
empty nonhead constituent in the verbal substructure inter-
acts with syntactic rules and principles other than the
rule of P-shift. This interaction may prove to be nontri-
vial insofar as nouns too may be substituted for this posi-
tion, as noted by Van Riemsdijk (1978:102) and illustrated
in (9) below. In (9) the noun *auto* has been incorporated
into the verb, as is indicated by the fact that it can be
moved along with the verb by the rule of V-raising.

(9)(a) *omdat   hij [auto e_i] kan [rijden]$_i$*
        because he   car   can   drive
        'because he can drive a car'

   (b) *omdat   hij [e_i] kan   [auto rijden]$_i$*
        because he   can   car   drive

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If the empty nonhead position in a complex verbal struc-
ture is available as a receptacle for a moved constituent,
particularly for a noun, then it is legitimate to ask what
the implications of the presence of such an empty position
are as regards the principles of government, binding, Case
assignment, θ-role assignment and the Empty Category Prin-
ciple.   Van Riemsdijk fails to address this question,
however.[3]   For this reason his claim that P-shift is a
substitution rule must be considered problematic.

It must be concluded, then, that Van Riemsdijk's claim
that P-shift is a syntactic substitution rule is proble-
matic because (i) it is based on an unwarranted assump-
tion, (ii) the rule apparently represents a unique kind of
mechanism in the grammar of Dutch, and (iii) it is un-
clear how the rule interacts with principles such as the
principles of government, binding, Case assignment, θ-role
assignment and the Empty Category Principle.

A second problem of a systematic nature with Van Riems-
dijk's analysis relates to the fact that many verb-particle
combinations display idiosyncratic subcategorization pro-
perties.   This property of verb-particle combinations in
Dutch was illustrated in par. 2.5 above. Recall that,
by the Projection Principle which was presented as (22) in
par. 3.3.2.3 above, the subcategorization properties of a
lexical item are projected from the lexicon and must be
satisfied at every level of structure, i.e. at (syntac-
tic) D-structure, (syntactic) S-structure, and the level of
Logical Form.[4]   Given the Projection Principle, the subca-
tegorization properties of a verb as stipulated in the
lexicon must be satisfied at every level of structure,
notably, for purposes of the present discussion, at D-struc-

ture. Hence, if *af* and *loopt* in (23a) of par. 2.5, repeated
here as (10), are analyzed as a P''' - V sequence, i.e. a
syntactic phrase, at D-structure, the D-structure of (10)
must be considered to be a projection of the lexical proper-
ties of the verb *lopen* and not of the complex verb *aflopen*.

(10)   *Hij loopt de tentoonstelling af* .
          he   walks the exhibition   down
          'He visits the exhibition.'

However, as Baayen (1986:38f) notes, *lopen* is an intransi-
tive verb, the subcategorization properties of which cannot
be satisfied by a structure such as that of (10) which con-
tains an object NP. The verb-particle combination *aflopen*,
by contrast, is transitive.[5]   Therefore the structure of
(10) must be assumed to be projected from the subcategori-
zation properties of the complex verb *aflopen*, although
this verb does not occur in the D-structure of (10) on
Van Riemsdijk's analysis. It could be argued that a syn-
tactic phrase such as *af...lopen* behaves like an idiomatic
phrase in this respect. Idiomatic phrases may have sub-
categorizational properties that differ from those of the
verb which is the head of the phrase. Such idiosyncratic
subcategorizational properties must be listed in the lexi-
con as part of the lexical entry of the idiomatic phrase
in question. But this would result in the subcategoriza-
tion properties of *af...lopen* being specified twice: once
as part of the lexical entry for the putative idiomatic
phrase $[[af]_{P'''} [lopen]_V]_{VP}$ appearing at D-structure in
the derivation of (10), and once as part of the lexical
entry for the complex verb $[[af]_P[lopen]_V]_V$ created by
P-shift in the derivation of (11) below. P-shift is as-
sumed to have applied in (11) to account for the fact that
af has been moved along with the verb by the rule of V-
raising.

(11)   *dat   hij [de   tentoonstelling e] wil   kunnen*
         that he   the exhibition   wants can

         [af + lopen]
         down   walk
         'that he wants to be able to visit the exhibition'

Moreover, in addition to its idiosyncratic subcategoriza-
tion properties, *af...lopen* 'to visit' also has a meaning
which cannot be predicted on the basis of the meanings of
af and *lopen* respectively. This noncompositional meaning
too would have to be specified twice in the lexicon: once
for the phrase and once for the complex verb. Thus, Van
Riemsdijk's analysis is unable to express the generaliza-
tion that the phrase *af...lopen* and the complex verb *af-
lopen* have exactly the same meaning and subcategorization
properties. For every complex verb that is created by the
rule of P-shift and which has to be listed in the lexicon
by virtue of having some or other idiosyncratic property,
the corresponding phrase with its identical properties will,
quite redundantly, have to be listed in the lexicon as well.

A third point of systematic criticism that may be raised
in connection with Van Riemsdijk's analysis concerns his
claim that particles and intransitive prepositions are
syntactically indistinguishable and that they can both ap-
pear in the P''' slot immediately to the left of the verb
in base structures generated by the rewrite rule (1). If
this claim is correct, it is predicted that ordinary in-
transitive prepositions, like particles, will be able to
undergo the rule of P-shift. In fact, as noted by Van
Riemsdijk (1978:54), intransitive prepositions cannot be
incorporated into the verb. This is evident from the ill-
formedness of (12b) which is derived from (12a) by applica-
tion of P-shift and subsequent movement of the entire com-
plex verb *boven te wonen* 'to live upstairs' by the rule of
V-raising. By contrast, (12c) in which the preposition
boven remains in its original position, is well-formed.

(12)(a)   *omdat*   *hij [tegenwoordig <u>boven te wonen</u>] schijnt*
          because he   nowadays   above to live   seems
          'because he seems to live upstairs nowadays'

   (b)   **omdat*   *hij [tegenwoordig e$_i$] schijnt [<u>boven te</u>*
         because he   nowadays   seems   above to
         <u>*wonen*</u>$_i$
         live

   (c)   *omdat*   *hij [tegenwoordig <u>boven</u> e$_i$] schijnt [<u>te</u>*
         because he   nowadays   above   seems   to
         <u>*wonen*</u>$_i$
         live

As was shown in (40)-(42) in par. 2.7 above, particles and
intransitive prepositions also behave differently with
regard to the *aan het* + infinitive construction, and with
regard to the rules of Topicalization and PP-*over*-V in
Dutch. In order to ensure that only particles but not ordi-
nary intransitive prepositions are incorporated in the verb,
the rule of P-shift must be able to distinguish between
these two instances of the category P. Van Riemsdijk (1978:
102) tentatively suggests that particle incorporation must
be assumed to be "a lexically governed process" or, as he
(1978:56f) puts it somewhat differently, "the lexical pro-
perties of the particle-verb combinations" must be assumed
to be responsible for their ability to undergo P-shift.

Van Riemsdijk's remarks are not very illuminating. Is he
suggesting that verb-particle combinations are listed as
such in the lexicon and that it is this fact that is respon-
sible for the syntactic incorporability of particles? If
they are listed, are they listed as (complex) words (V^0) or
as phrases (V^1)? If they are lexicalized phrases, how are
they to be distinguished from true idiomatic phrases which,
according to Baayen (1986:46f), differ from verb-particle
combinations both in productivity and in degree of semantic

noncompositionality? How is the fact of having a listed
counterpart encoded on a syntactic (sub)string? Unless
questions such as these can be answered in a satisfactory
way, the notion 'lexical government', which Van Riemsdijk
claims to be the key notion in terms of which the syntac-
tic behaviour of particles vis à vis that of intransitive
prepositions is to be explained, is an obscure notion.
Any claims made in terms of such an obscure notion are of
course untestable.

In addition to the three systematic shortcomings of Van
Riemsdijk's analysis indicated above, the analysis has
empirical shortcomings as well. We turn to these imme-
diately.

4.2.2.2   Problems of an empirical nature

In this section we shall be concerned with two predictions
made by Van Riemsdijk's analysis of verb-particle combina-
tions in Dutch. The first prediction is derived from the
claim that the P-shift rule is an optional rule. The rule
has to be optional to account, amongst other things, for
the fact that particles are only optionally raised along
with the verb by the rule of V-raising, as shown in (5)
above. But if P-shift is optional, then we would expect
both (13a), in which P-shift has not applied, and (13b), in
which both P-shift and V-second have applied, to be well-
formed. This is not the case, however.

(13)(a)   *Hij belde het meisje op.*
          he   rang the girl   up
          'He rang up the girl.'

   (b)   *Hij op + belde het meisje .*
          he up   rang the girl

Similarly, we would expect the (b)-sentences in (14), in
which P-shift is assumed not to have applied, thereby
leaving the particle free to undergo the rules of Topicali-
zation and PP-*over*-V respectively, to be just as acceptable
as the corresponding (a)-sentences.

(14)(a)   i.   *Hij heeft mij op + gebeld.*
           he has   me up   rung
           'He rang me up.'

        ii.   *dat   Jan   achter + raakt*
            that John behind   gets
            'that John falls behind'

  (b)   i.   **Op heeft hij mij gebeld.*
           up has   he   me   rung
           'He rang me up.'

        ii.   **dat   Jan   raakt.achter*
            that John gets   behind
            'that John gets behind'

Once again, the prediction is wrong. It appears, then,
that the claim that P-shift is optional makes incorrect pre-
dictions about the syntactic behaviour of particles. In
order to account for the judgments in (13) and (14) it would
have to be assumed that P-shift can never apply to incorpo-
rate a particle into a verb which is subject to V-second, on
the one hand, and, on the other hand, that P-shift must
apply in order to prevent rules such as Topicalization and
PP-*over*-V from separating the particle from the verb. This,
clearly, is a contradictory state of affairs. It must be
concluded that Van Riemsdijk's claim that P-shift is an
optional rule is incorrect because it makes wrong predic-
tions about the accessibility of particles to syntactic
rules. At the same time it is not at all clear how the rule
of P-shift is to be constrained in a nonarbitrary manner
from making these incorrect predictions.

A second prediction made by Van Riemsdijk's analysis of
verb-particle combinations in Dutch is that particles that
have undergone P-shift and those that have not will behave
differently with regard to syntactic rules. Recall that on
Van Riemsdijk's analysis verb-particle combinations are
syntactic P''' - V strings. After the application of P-shift,
however, the verb-particle combination is a complex verb, i.e.
a word. It is to be expected, therefore, that verb-particle
combinations that have not undergone P-shift will be more
amenable to manipulation by syntactic rules than verb-particle
combinations that have undergone P-shift. P-shift is claimed
to create words, and parts of words cannot be manipulated by
syntactic rules, given the Lexical Integrity Hypothesis, a
weak version of which Van Riemsdijk appears to accept impli-
citly, as will be shown in par. 4.2.3 below. The prediction
is difficult to test, because the surface order of the parti-
cle with respect to the verb is exactly the same whether the
combination is analyzed as a phrase or as a complex verb.
There are some indications that the prediction is wrong, how-
ever. First, we have already pointed out that movement of
the particle by application of the rules of Topicalization
and PP-*over*-V is impossible, regardless of whether the op-
tional P-shift rule has applied or not, i.e. regardless of
whether the particle and the verb are taken to constitute a
syntactic string or a· complex word --- see (14) above.

Second, the rule of Gapping appears not to differentiate
between constructions such as (15a), in which the particle
is left behind by V-raising, thus indicating that P-shift
has not applied, and constructions such as (15b), in which
the particle is raised along with the verb, an indication
that P-shift has applied.[6]

(15)(a) *omdat*   *Jan* <u>*in*</u> *wil*   <u>*lopen*</u> *en* *Marie* <u>uit</u> w̸i̸l̸

        because John in wants walk and Mary   out w̸a̸n̸t̸s̸

        <u>l̸o̸p̸e̸n̸</u>

        w̸a̸l̸k̸

        'because John wants to walk in and Mary out'

(b) o͞mdat Jan wil in+lopen en Marie w̶i̶l̶ uit +
      because John wants in walk and Mary w̶a̶n̶t̶s̶ out
      l̶o̶p̶e̶n̶
      w̶a̶l̶k̶

It is clear that the verb lopen can be deleted by the rule
of Gapping regardless of whether or not P-shift has applied.
If uitlopen was a syntactic P''' - V string in (15a), but a
complex verb in (15b), as claimed by Van Riemsdijk, the
Lexical Integrity Hypothesis would have predicted (15b) to
be unacceptable.[7]

It must be concluded, then, that Van Riemsdijk's analysis,
in terms of which verb-particle combinations are claimed to
be ordinary syntactic strings before the application of P-
shift, and complex verbs after P-shift has applied, makes
incorrect predictions about the syntactic behaviour of verb-
particle combinations in Dutch. Verb-particle combinations
which are assumed to be ordinary syntactic strings by virtue
of not having undergone P-shift on Van Riemsdijk's analysis
are no less cohesive syntactically than those that are ana-
lyzed as complex verbs, i.e. those that have undergone P-
shift. Neither are combinations that have undergone P-shift
syntactically more cohesive than those that have not.

4.2.2.3   Summary

Van Riemsdijk's P-shift analysis of verb-particle combina-
tions in Dutch has been shown to have the following short-
comings:

(16)(a)   The claim that P-shift is a substitution rule is
          problematic because

    i.   it is based on the unwarranted assumption
          that a syntactic rule can move a consti-
          tuent into an empty position in a complex
          word structure;

    ii.   as a substitution rule in the intended
          sense, P-shift would represent a unique
          kind of mechanism in the grammar of Dutch;
          and

    iii. no indication is given as to the way in
          which the relevant empty structural posi-
          tion interacts with syntactic principles
          such as the principles of government,
          binding, Case assignment, θ-role assign-
          ment and the Empty Category Principle.

  (b)   A P-shift analysis necessitates the duplication of
        lexical entries to account for the fact that verb-
        particle combinations display the same idiosyncra-
        tic meaning and subcategorization properties,
        regardless of whether they are base-generated
        phrases or words created by P-shift.

  (c)   The notion 'lexical government' in terms of which
        the rule of P-shift is claimed to distinguish
        between (incorporable) particles and (nonincorpor-
        able) intransitive prepositions is unexplicated
        and, thus, obscure.

  (d)   A P-shift analysis makes incorrect predictions about

    i.   the syntactic behaviour of verb-particle
          combinations;   and

ii.   the differential syntactic behaviour of
       particles that have undergone P-shift
       vis à vis those that have not.

4.2.3   General linguistic assumptions

In this section we shall consider the general linguistic
assumptions underlying Van Riemsdijk's P-shift analysis of
verb-particle combinations in Dutch. The assumptions with
which we will be concerned are those that are explicitly or
implicitly made or would have to be made by Van Riemsdijk
in arguing for the well-foundedness of the claims expressed
by his P-shift analysis on the basis of evidence relating
to the properties of verb-particle combinations as set out
in chapter 2 above. The central claims expressed by Van
Riemsdijk's P-shift analysis may be represented as in (17a,
b) below.

(17)(a) Verb-particle combinations are nondistinct from
         ordinary PP-V sequences at the level of D-struc-
         ture.

   (b) Verb-particle combinations are nondistinct from
        (syntactically complex) words after the rule of
        P-shift has applied.

Turning now to the assumptions in terms of which the pro-
perties of verb-particle combinations in Dutch are brought
to bear on the claims in (17), let us consider, first, the
separability of the verb and the particle as illustrated
in par. 2.2 above. This property of verb-particle combina-
tions in Dutch is adduced by Van Riemsdijk (1978:103) as
evidence for the claim (17a), viz. that verb-particle com-
binations are syntactic phrases at the level of D-structure.
The fact that the verb can be separated from the particle
by the application of the rule of V-raising is adduced by

Van Riemsdijk (1978:103) as evidence against the alterna-
tive claim that verb-particle combinations are syntacti-
cally complex words at the level of D-structure. In order
to bring the separability of the verb and the particle by
the rule of V-raising to bear on the claim that verb-particle
combinations are phrases rather than words at the level of
D-structure, Van Riemsdijk makes the following assumption:

(18)   A syntactic rule which refers ambiguously to V
         in the structure $[_V P - V]_V$ must be taken to
         refer to the higher (or outer) V-node and not
         to the lower (or inner) V-node.

The assumption (18) is a reflex of a general linguistic
principle known as the A-over-A Principle. This principle
is formulated as follows by Van Riemsdijk and Williams
(1986:20):

(19)   A-over-A Principle
         In a structure $...[_A...[_A...]_A...]_A...$, if a
         structural description refers to A ambiguously,
         then that structural description can only ana-
         lyze the higher, more inclusive, node A.

Given the assumption (18), a reflex of the more general
A-over-A Principle (19), extraction of the inner V consti-
tuent of a complex verb with the structure $[_V P - V]_V$ by
V-raising is prohibited. Thus, he argues, a verb-particle
combination cannot have the structure of a complex verb at
the level of structure at which the rule of V-raising
applies because, in order for the rule to have the desired
effect, it would have to be able to refer to the lower (or
inner) V-node within the structure of the complex verb in
violation of the A-over-A Principle. Hence, verb-particle
combinations must be phrases, at least at the level of D-
structure.

Notice, however, that by appealing to the A-over-A Principle
to rule out a complex verb structure for verb-particle com-
binations at the level of D-structure, Van Riemsdijk is
implicitly making the assumption (20).

(20)   Syntactic rules can analyze the internal struc-
         ture of words.

Only if the assumption (20) is made, does it become neces-
sary to adduce a principle such as the A-over-A Principle
as the premiss of an argument against the assignment of a
complex verb structure to verb-particle combinations at the
level of structure at which V-raising applies.

Van Riemsdijk's implicit acceptance of (20) would appear
to indicate that he rejects at least the strong version of
the Lexical Integrity Hypothesis, presented as (6) in
chapter 1 above, which prevents syntactic rules from either
analyzing or changing word structure. In another context
Van Riemsdijk (1978:107) does in fact explicitly admit
that his analysis "is at odds with the idea that parts of
words may never be analyzed by transformations", i.e. the
strong version of the Lexical Integrity Hypothesis.

Second, verb-particle combinations in Dutch were shown in
par. 2.3 to exhibit the property of internal inflectional
affixation. However, Van Riemsdijk has nothing to say about
the way in which the ability of verb-particle combinations
to take inflectional affixes internally is to be accounted
for by his P-shift analysis. Neither does he present a gene-
ral theory of inflection or a specific theory of inflectional
affixation for Dutch. It is therefore not possible to state
the assumption(s) in terms of which the inflectional proper-
ties of verb-particle combinations might be explained and
hence serve as evidence for this analysis.

Third, the tendency of verb-particle combinations to have
noncompositional meanings --- see par. 2.4 above ---
is implicitly adduced as evidence for the claim (17b) by
Van Riemsdijk. That is, the semantic noncompositionality
of verb-particle combinations is implicitly argued to sup-
port the claim that, unlike ordinary PP-V sequences, verb-
particle combinations may be assigned the status of complex
verbs by application of the rule of P-shift. According to
him, (1978:54) the "more idiomatic reading" of verb-particle
combinations vis à vis the "semantically more predictable
reading" of intransitive prepositions constitutes a signi-
ficant difference between particles and intransitive prepo-
sitions. It is one of the differences on the strength of
which he (1978:101ff) proposes that particles, but not
intransitive prepositions, can be syntactically incorpo-
rated into a complex verb structure generated by the word
formation rules of the grammar.

Thus, the tendency of verb-particle combinations to have
noncompositional readings, as opposed to the "more predic-
table" readings of intransitive preposition-and-verb
sequences, is considered by Van Riemsdijk to be one of the
facts that are explained by an analysis on which particles,
but not intransitive prepositions, are incorporable into
complex verb structures generated by the word formation
rules. However, if Van Riemsdijk's P-shift analysis of
verb-particle combinations were to be claimed to serve as
a basis for explaining the characteristic semantic noncom-
positionality of these expressions, the following assump-
tion would have to be made:

(21)   (Syntactically complex) strings which are
         semantically noncompositional must be assigned
         a word structure.

Van Riemsdijk does not explicitly make the assumption (21).
However, it has to be made if the semantic noncompositiona-
lity of verb-particle combinations are to be brought to

bear on the well-foundedness of the claim (17b), as is im-
plied by him.

The assumption (21) is representative of the Aronovian view
of semantic noncompositionality which was presented as (34)
in par. 3.4 above. The version of the Aronovian view which
is implicitly assumed by Van Riemsdijk may be formulated as
in (22).

(22)   Semantic noncompositionality is a characteris-
         tic property of words, but not of phrases.

Fourth, the ability of verb-particle combinations to differ
in subcategorization from the verbs which are the heads of
such combinations --- see par. 2.5 above --- is not con-
sidered by Van Riemsdijk to support either of the claims in
(17) above. He mentions the question of idiosyncratic sub-
categorization within the context of a discussion of simila-
rities and differences between verb-particle combinations
and motional postpositions. The details of the discussion
do not concern us here. What is important, though, is that
it is clear from the statement of the subcategorization
properties of the verb *lopen* proposed by him (1978:94) that
he makes the assumption (23).

(23)   The subcategorization properties of lexical
         items are projected onto syntactic represen-
         tations from the lexicon.

Thus, the subcategorization frame which he proposes for *lopen*
provides for the fact that although *lopen*, as an intransi-
tive verb, cannot take a direct object NP, as shown in (24a),
it can take such an object NP when occurring with the par-
ticle *in*, as shown in (24b).[8]

(24)(a) *omdat   hij het bos loopt
         because he the wood walks

(b) *omdat   hij het bos in loopt*
     because he   the wood· in walks
     'because he walks into the wood'

The assumption (23), however, is merely a reflex of the Pro-
jection Principle which was presented as (22) in par. 3.3.2.3
above.

Thus, Van Riemsdijk appears implicitly to accept the Projec-
tion Principle. But he fails to consider the question of how
the subcategorization changes which may take place when a
verb is combined with a particle other than a motional post-
position bear on the claims of (17), given the Projection
Principle. This omission was shown in par. 4.2.2.1 above to
constitute a shortcoming of his P-shift analysis.

Fifth, Van Riemsdijk does not bring the ability of verb-par-
ticle combinations to serve as the bases of word formation
rules --- see par. 2.6 above --- to bear on either of
the claims expressed by his P-shift analysis. Notice that,
given his claim that verb-particle combinations belong to
the category V^0 after application of the rule of P-shift,
verb-particle combinations could serve as the bases of word
formation rules without violating the general constraint on
word formation rules known as the No Phrase Constraint. This
constraint was presented as (37) in par. 3.4 above. If verb-
particle combinations are complex words after application of
P-shift, then they can presumably serve as the bases of word
formation rules without violating the No Phrase Constraint.
It does not follow, however, that Van Riemsdijk implicitly
accepts the No Phrase Constraint. On the contrary, there is
evidence that he does not accept this constraint as a general
linguistic constraint on word formation rules.

Thus, recall that Van Riemsdijk considers particles to be
nondistinct from intransitive prepositions and proposes
that they be generated as constituents of the category P''' ,
a phrasal category, at the level of D-structure, as shown
in par. 4.2.1 above. Although the particle which is incor-
porated into the substructure of the verb by application of

the rule of P-shift is a bare preposition (i.e. P^0) in the
majority of cases, this need not be so. Baayen (1986:39f)
provides the following example of a sentence in which an
entire prepositional phrase (PP) must be assumed to have
been incorporated into the verb, as evidenced by the fact
that the phrase as a whole is moved along with the verb by
the rule of V-raising.

(25)(a)   *dat   hij [hem e_i e_j] probeert [$_{PP}$ onder de*
          that he   him   tries   under the
          tafel]$_i$ [te drinken]$_j$
          table   to drink
          'that he tries to make him hopelessly drunk'

   (b)   *dat   hij [[het bos e_i] e_j]] probeert [$_{PP}$ verder*
          that he   the wood   tries   further
          in]$_i$ [te lopen]$_j$
          in   to walk
          'that he tries to walk further into the wood'

In both (25a) and (25b) V-raising has moved more than just
a bare particle or postposition along with the verb: a full
prepositional phrase in (25a) and a postposition with its
modifying adverb in (25b). If the ability of some consti-
tuent to be moved along with the verb by V-raising is taken
to be an indication that such a constituent has been incor-
porated into the verb by the rule of P-shift, then it is
clear that PPs must be able to occur in the nonhead (Y)
position of the complex verbs generated by the word forma-
tion rule (4) in par. 4.2.1 above.

The facts of (25) may be argued to follow from Van Riems-
dijk's P-shift analysis, in particular from the claim (17b),
only if the following assumption is made:

(26)   Major syntactic constituents can appear within
          word structures generated by the word formation
          rules.

The assumption (26), of course, is the exact opposite of
the No Phrase Constraint.

Sixth, consider the property discussed in par. 2.7 above,
viz. the syntactic cohesiveness of verb-particle combina-
tions. Van Riemsdijk (1978:54-55) mentions the fact that,
unlike ordinary intransitive prepositions, particles can be
moved along with the verb by the V-raising rule and can be
neither topicalized nor postposed by, what he calls, the P'''
extraposition rule (referred to as the rule of PP-*over*-V in
par. 2.7 above). He does not indicate explicitly which of
the claims (17a) and (17b) could serve as the basis for
explaining the difference in syntactic cohesiveness between
verb-particle combinations and ordinary PP-V sequences. Note,
however, that by claim (17a) particles and intranstive pre-
positions are indistinguishable at the level of D-structure.
Their differential behaviour with regard to rules such as
V-raising, Topicalization and P''' extraposition/PP-*over*-V
can therefore not be explained on the basis of the claim
(17a).

The only difference between intransitive prepositions and
particles on Van Riemsdijk's analysis is that, whereas the
latter may be incorporated into the verb by application of
the rule of P-shift, the former cannot undergo P-shift and,
thus, remain independent constituents of the verb phrase.
The syntactic cohesiveness of verb-particle combinations
vis à vis the noncohesiveness of ordinary PP-V sequences
could therefore only follow from the claim (17b), viz.
that the former, but not the latter, constructions are
assigned the status of lexical categories, or words, after
application of the rule of P-shift.

The question, then, is what the assumption is in terms of
which the syntactic cohesiveness of verb-particle combina-
tions may be argued to follow from the claim (17b). In the
case of V-raising, the A-over-A Principle (19) could be as-
sumed to explain the cohesiveness of the particle and the

verb after incorporation of the particle into the verb to
form a complex verb with the structure $[_V \ P - V]_V$. It
would not be possible to move the verbal constituent from
a structure such as this without violating the A-over-A
Principle. However, the A-over-A Principle cannot be argued
to prevent the rules of Topicalization and P''' extraposi-
tion/PP-*over*-V from extracting the particle from a verb-
particle combination. In the latter cases the A-over-A
Principle is inapplicable as the particle differs in cate-
gory from the category of the complex verb of which it is a
constituent.

Thus, the A-over-A Principle cannot be adduced as the pre-
miss of an argument in terms of which the syntactic cohe-
siveness of verb-particle combinations with regard to the
rules of Topicalization and P''' extraposition/PP-*over*-V is
shown to follow from the claim (17b) expressed by Van Riems-
dijk's P-shift analysis. However, the relevant property of
verb-particle combinations could be argued to follow from
the claim that these constructions are words after applica-
tion of P-shift, if the · following assumption is made:

(27)   The constituents of (syntactically complex)
          words cannot be separated by syntactic rule.

Given (27), it would follow that the constituents of verb-
particle combinations cannot be separated by the application
of rules such as Topicalization and P''' extraposition/PP-
over-V once they have been assigned a word structure by the
rule of P-shift.

The assumption (27) represents a weaker version of the Lexi-
cal Integrity Hypothesis, such as the one which was present-
ed in chapter 1 above and which is repeated here as (28).

(28)   <u>Lexical Integrity Hypothesis</u> (weaker version)
         No deletion or movement transformation may
         involve categories of both word structure'
         and sentence structure.

Thus, although Van Riemsdijk has been shown to reject the
strong version (21) of the Lexical Integrity Hypothesis, it
appears that he implicitly accepts the weaker version (28)
of this hypothesis.

Seventh, and lastly, the typical compound stress pattern
exhibited by verb-particle combinations in Dutch --- see
par. 2.8 above --- is not considered by Van Riemsdijk and
it is therefore impossible to state the assumption(s) in
terms of which the property in question might be explained
by and, hence, serve as evidence for the claims (17a, b)
expressed by a P-shift analysis of verb-particle combina-
tions.

To summarize: it has been shown that in order to argue for
the claims (17a) and (17b) on the basis of evidence relating
to various properties of verb-particle combinations in Dutch,
Van Riemsdijk implicitly or explicitly makes, or would have
to make, the following assumptions:

(29)(a) A syntactic rule which refers ambiguously to V
         in the structure $[_V P - V]_V$ must be taken to
         refer to the higher (or outer) V-node and not
         to the lower (or inner) V-node [= (18)].

    (b) Syntactic rules can analyze the internal struc-
         ture of words [= (20)].

    (c) (Syntactically complex) strings which are seman-
         tically noncompositional must be assigned a word
         structure [= (21)].

    (d) The subcategorization properties of lexical items
         are projected onto syntactic representations from
         the lexicon [= (23)].

(e)   Major syntactic constituents can appear within
      word structures generated by the word forma-
      tion rules [= (26)].

(f)   The constituents of syntactically complex
      words cannot be separated by syntactic rule
      [= (27)].

The assumptions in (29) have been shown in the foregoing
discussion either to be consistent with or to follow from
the following general linguistic assumptions:

(30)(a) The assumption (29a) follows from the A-over-A
         Principle (19) above.

   (b)   The assumptions (29b) and (29f) follow from a
         weaker version of the Lexical Integrity Hypo-
         thesis presented in (28) above.

   (c)   The assumption (29c) is consistent with the
         Aronovian view of semantic noncompositionality
         presented as (34) in par. 3.4 above.

   (d)   The assumption (29d) follows from the Projection
         Principle presented as (22) in par. 3.3.2.3 above.

For purposes of our study it is also significant that Van
Riemsdijk's implicit acceptance of the assumption (29e)
would imply that he rejects the No Phrase Constraint pre-
sented as (37) in par. 3.4 above.

It has been claimed that Van Riemsdijk accepts the weaker
version of the Lexical Integrity Hypothesis presented as
(28) above. It may be asked, however, whether Van Riems-
dijk's rule of P-shift, which incorporates a syntactic
constituent into the substructure of a word, is not incon-
sistent with even this weaker version of the Lexical Inte-
grity Hypothesis. Van Riemsdijk (1978:107) points out that
the rule of P-shift is a substitution rule, not an adjunc-

tion rule. That is, P-shift does not change the structure of
the verb, but merely inserts a lexical item into an empty
structural position already present in the verbal substruc-
ture. He rules out an adjunction analysis, because, as he
(1978:107) puts it:

> "under such an analysis the incorporation
> rule is allowed to build word structures,
> a function normally reserved for word
> formation rules."

The latter statement explicitly indicates that Van Riemsdijk
accepts that word structure is described by word formation
rules and cannot be changed by rules of syntax.

Note, in conclusion, that the statement quoted above also ap-
pears to indicate that Van Riemsdijk accepts that word forma-
tion rules form part of a word structure, or morphological,
component of the grammar, which is distinct from the syntac-
tic component. Thus, he emphasizes that the P-shift rule, as
a syntactic rule, cannot build word structure. The structure
of the complex word resulting from application of P-shift is
determined by a rule of the word formation component and not
by a rule of syntax. Van Riemsdijk has nothing to say about
the place of word formation rules in the grammar, however.

4.3   Stowell's incorporation analysis

4.3.1   Claims and formal devices

4.3.1.1   Proposal for English

Stowell (1981:ch. 5) is concerned with providing an analysis
of verb-particle combinations in English consistent with his
proposal that category-specific phrase structure rules should
be eliminated from the theory of grammar.[9]   According to
Stowell (1981:301, 303), *turned on the light* in (31a) and
turned the light on in (31b) have the structures shown in
(32a) and (32b) respectively.

(31)(a) *Kevin* <u>*turned*</u> <u>*on*</u> *the light.*

   (b) *Kevin* <u>*turned*</u> *the light* <u>*on*</u>.

(32)(a) $[_V \ [_V \ turned] \ [_{Prt} \ on]] \ [_{NP} \ the \ light]$

   (b) $[_V \ [_V \ [_V \ turned] \ [_{NP} \ the \ light]] \ [_{Prt} \ on]]$

The structure (32a) is generated by a rule of Particle In-
corporation, whereas the structure (32b) is derived by
application of a rule of NP Incorporation prior to the
application of the Particle Incorporation rule responsible
for generating (31a). According to Stowell (1981:301), the
rule of NP Incorporation is required independently to
account for double object-NP constructions, such as (33)
which has roughly the structure shown in (34).

(33)   *Wayne sent Robert a telegram.*

(34).   *Wayne* $[_{\overline{V}} \ [_V \ sent - Robert] \ [a \ telegram]]$.

The NP *Robert* must be assumed to be incorporated into the
verb as shown in (34) so as to enable the (complex) verb
to assign Case to the NP *a telegram*. If NP Incorporation
did not apply, the NP *a telegram* would not be adjacent to
the verb *sent* and could not be assigned Case, given the
strict adjacency condition on Case assignment proposed by
Stowell (1981:113). The adjacency condition on Case assign-
ment stipulates that an NP cannot be assigned Case unless
it is strictly adjacent to its governing verb.[10]

Stowell (1981:302) claims that the rules of NP Incorpora-
tion and Particle Incorporation form part of "a component
of extended word formation rules". These rules differ from
"rules of morphology", i.e. ordinary word formation rules,
in their ability to form "syntactic words", i.e. words that
are not phonologically interpreted as single words. Thus
Stowell distinguishes between X^0 categories that are syn-

tactically and phonologically interpreted as single words
and X^0 categories that are syntactically, but not phonolo-
gically, interpreted as single words. On the one hand, a
syntactically complex word which is formed by an ordinary
word formation rule, or rule of morphology, is assigned a
single pair of external word boundaries on the strength of
which the complex as a whole is interpreted as a single
phonological word. A syntactically complex word which is
formed by an extended word formation rule, on the other
hand, presumably retains its internal word boundaries and,
hence, is interpreted as consisting of more than one phono-
logical word.

An analysis on which verb-particle combinations in English
are considered to be complex verbs formed by means of (ex-
tended) word formation rules has a number of potential
advantages according to Stowell (1981:302ff). First, by
claiming that a V-(NP)-Prt sequence is a complex V rather
than a syntactic string at the level of D-structure,
Stowell obviates the need for positing a category-specific
phrase structure rule for VP in English. The latter option
is not available to Stowell, given his (1981:359) claim
that the theory of grammar does not allow for category-
specific rules of phrase structure.

Second, by postulating the rule of Particle Incorporation,
Stowell can explain why, in a string of the form V-Prt-NP,
the NP is assigned Case in apparent violation of the adja-
cency condition on Case assignment. Given that the particle
forms a complex V with the verb after application of Parti-
cle Incorporation, the NP is indeed adjacent to its govern-
ing verb and Case assigner as required.

Third, by claiming that both continuous verb-particle combi-
nations, such as that of (31a), and the corresponding dis-
continuous combinations, such as that of (31b), are generated
by the same extended word formation rule, viz. the rule of
Particle Incorporation, there is no need to relate the two

structures by means of a syntactic movement rule. This is
an advantage, according to Stowell (1981:302), in that the
movement rule in question would have to apply to part
of a word, thereby violating the Lexical Integrity
Hypothesis. On Stowell's account, the discontinuity of the
verb and the particle in sentences such as (31 b) is claimed
to follow from the extrinsic ordering of the two extended
word formation rules proposed by him, viz. NP Incorporation
and Particle Incorporation. The discontinuity of the verb
and the particle in sentences such as (31 b) is merely the
superficial manifestation of the fact that NP Incorporation
has applied before Particle Incorporation in the formation
of the complex verb $[_V$ *turn the light on*].

Fourth, by hypothesizing that the rule responsible for the
formation of verb-particle combinations is a word formation
rule and not a rule of syntax, Stowell (1981:303-306) claims
to be able to account for the arbitrary properties of the
rule, e.g. its partial productivity, its failure to apply
cross-categorially and its language-specificity. Moreover,
according to Stowell (1981:331-336), the hypothesis con-
cerned can also account for two further properties of verb-
particle combinations, viz. that the constituents of these
combinations may display an arbitrary but invariant order,
as shown in (35), and that the verbs appearing in these
combinations are limited to a particular morphological class,
viz. the class of native (i.e. Germanic) verbs, as illustra-
ted in (36).

(35)(a) * I *turned off* it.
    (b)   I *turned* it *off.*

(36)(a)   John *gave away* his money to charity.
    (b) * John *donated away* his money to charity.

As shown in (35a), a particle cannot precede an unstressed
pronominal object, but must follow it. According to Stowell

(1981:284ff), fixed order of morphemes is a characteristic property of complex words. [11] As regards the sentences in (36), the well-formedness of (36a) containing the native verb *give*, as opposed to the ill-formedness of (36b) containing the synonymous latinate verb *donate*, is considered by Stowell (1981:333ff) to be an indication that the rule responsible for the formation of the verb-particle combinations in question is sensitive to the native-latinate distinction. Only rules of phonology and word formation are sensitive to the distinction in question. [12]

Having outlined Stowell's proposal for an incorporation analysis of verb-particle combinations in English, let us briefly consider the way in which he proposes to extend this proposal to the analysis of verb-particle combinations in Dutch.

4.3.1.2 Proposal for Dutch

In a discussion of the phenomenon of preposition stranding in Dutch, Stowell (1981:ch. 7) proposes that Van Riemsdijk's P-shift rule (2) above be reformulated as an extended word formation rule of Particle Incorporation. Since his proposal for Dutch is merely an extension of his proposal for the analysis of verb-particle combinations in English, the discussion will be brief and will concentrate on the differences between Stowell's and Van Riemsdijk's proposals.

Recall that Van Riemsdijk proposes that verb-particle combinations in Dutch are formed by application of a syntactic rule of P-shift. This rule substitutes a particle appearing adjacent to and to the left of the verb for an empty position generated within the substructure of the verb by an independently needed word formation rule --- see par. 4.2.1 above. In par. 4.2.2.1 we saw that, amongst other things, Van Riemsdijk's analysis fails to explain why in-

transitive prepositions, which he assumes to be structurally
indistinguishable from particles, cannot be incorporated
into the verb by application of P-shift --- see (12) above.

According to Stowell (1981:463f), the failure of Van Riems-
dijk's analysis to account for the nonincorporability of
intransitive prepositions stems from the fact that Van
Riemsdijk incorrectly assumes the relevant incorporation
rule to be a syntactic rule. The fact that particles and
intransitive prepositions are lexically but not syntacti-
cally distinguishable, as suggested by Van Riemsdijk (1978:
56), and that the incorporation rule is sensitive to the
distinction, would indicate that the particle incorporation
rule is a word formation rule in Dutch just as in English,
according to Stowell. Thus, whereas (37a) containing an
intransitive preposition and a verb has the structure shown
in (37b), (38a) containing a verb-particle combination
(as indicated by the noncompositional meaning) has the struc-
ture shown in (38b).   In the latter structure the particle
and the verb constitute a complex verb, whereas in the
former structure the preposition and the verb constitute
a phrase.

(37)(a)   *omdat   hij voor   staan*
            because he in front stands
            'because he is standing in front'

    (b)   *omdat   hij [$_{\overline{V}}$ [$_{PP}$ [$_p$ voor]] [$_V$ staan]]*

(38)(a)   *omdat   hij voor   staan*
            because he in front stands
            'because he is leading'

    (b)   *omdat hij [$_{\overline{V}}$ [$_V$ [$_p$ voor] [$_V$ staan]]]*

Because the incorporation rule responsible for incorporating
the particle into the verb is a word formation rule which
must have applied prior to D-structure, there is no way in

which the intransitive preposition *voor* can be incorporated
into the verb in the syntax before the application of V-
raising.[13] Thus, it is predicted that V-raising should be
able to move *voor* along with the verb in the case of (38)
where *voor* is part of the verb, but not in the case of (37)
where *voor* is not part of the verb. This prediction is borne
out, as shown in (39) and (40). Raising of *voor* along with
the verb in (37) yields (39b) which is ill-formed, whereas
(40b), corresponding with (38), is well-formed.

(39)(a) *omdat   hij <u>voor</u>   schijnt <u>te staan</u>*
         because he   in front seems   to stand
         'because he seems to be standing in front'

   (b)   **omdat   hij schijnt <u>voor</u>   <u>te staan</u>*
         because he   seems in front   to stand

(40)(a) *omdat   hij <u>voor</u>   schijnt <u>te staan</u>*
         because he   in front seems   to stand
         'because he seems to be leading'

   (b)   *omdat   hij schijnt <u>voor</u>   <u>te staan</u>*
         because he   seems   in front to stand

Stowell's incorporation analysis of verb-particle combinations
in Dutch succeeds in overcoming at least four of the short-
comings of Van Riemsdijk's P-shift analysis discussed in par.
4.2.2 above. First, Stowell's analysis does not require syn-
tactic rules to analyze word structure, as does Van Riems-
dijk's P-shift analysis. Second, Stowell's incorporation
analysis need not invoke an obscure notion of 'lexical govern-
ment' to account for the difference in incorporability between
particles and intransitive prepositions. Third, because verb-
particle combinations are analyzed only as complex verbs
created by the extended word formation rule of Particle In-
corporation, and not as both complex words and phrases, as
on Van Riemsdijk's account, no generalizations regarding
meaning and subcategorization are missed. Fourth, because
only a single, complex word structure is assigned to verb-

particle combinations on Stowell's analysis, no incorrect or
conflicting predictions are made regarding the syntactic be-
haviour of verb-particle combinations, as is the case with a
dual structure analysis such as Van Riemsdijk's.

4.3.2 Shortcomings

In the previous paragraphs we considered a number of poten-
tial advantages of Stowell's incorporation analysis of verb-
particle combinations in English and Dutch. In addition to
the advantages mentioned there, note that an incorporation
analysis could also serve as a basis for explaining the pro-
blematic properties of these constructions described in chap-
ter 2. Thus, on the one hand, the word-like properties of
verb-particle combinations could be argued to follow from
Stowell's claim that the rules responsible for the formation
of these combinations are (extended) word formation rules.
On the other hand, the claim that extended word formation
rules such as the rules of Particle Incorporation (and NP
Incorporation in the case of English) do not create phono-
logical words, could be argued to serve as a basis for
the explanation of the phrase-like behaviour of verb-
particle combinations in English. Particularly, (morpho)-
phonological properties such as their ability to take in-
flectional affixes internally and the peculiar stress pro-
perties of verb-particle combinations in English, could pre-
sumably be argued to follow from the claim that the struc-
tures generated by extended word formation rules are not
assigned a single pair of external phonological word boun-
daries, but retain their internal phonological word boun-
daries. Because the structures generated by extended word
formation rules are claimed not to be phonological words, it
would not be surprising if rules of inflection and stress
assignment, which are sensitive to phonological word boun-
daries, treated them differently from phonological words.[14]

In addition to the advantages outlined above, Stowell's

incorporation analysis has a number of shortcomings. We
turn to these directly.

4.3.2.1 The extended word formation component

A first problematic aspect of Stowell's incorporation ana-
lysis concerns the well-foundedness of his claim that the
grammars of English and Dutch must be assumed to include a
component of extended word formation rules. At least two
requirements have to be met in order for this claim to be
well-founded. The first is that the content of the notion
'extended word formation rule' should be both clear and pre-
cise. The second is that there should be independent moti-
vation for the inclusion of an extended word formation com-
ponent in the grammar. Unless these requirements are met,
it is impossible to assess the merit of the proposal that
the grammars of English and Dutch be assumed to contain a
component of extended word formation rules. Specifically,
it is impossible to judge the extent to which the putative
extended word formation rules overlap in function with
other rules of the grammar, to what extent their adoption
causes problems elsewhere in the grammar and, finally,
whether or not their adoption entails an unwarranted exten-
sion of the power of the general linguistic theory.

Consider, first, the requirement that the content of the
notion 'extended word formation rule' should be both clear
and precise. If this requirement is not met, it is impos-
sible to ascertain for a given rule whether it qualifies as
an extended word formation rule or not. Put differently,
in the absence of a clearly defined notion 'extended word
formation rule' it becomes impossible to refute the claim
that a given rule X is, or is not, an extended word forma-
tion rule.

From the discussion of various instances of what Stowell
claims to be extended word formation rules in English, e.g.

the rules incorporating prenominal adjectives (Stowell 1981:
282ff), NPs, and particles (Stowell 1981:ch. 5), and the
rules responsible for adding auxiliaries to the verb (Stowell
1981:118, 288-9), it appears that, on the one hand, Stowell
considers the following properties to distinguish extended
word formation rules from morphological word formation rules:

(41) Unlike morphological word formation rules, extended
      word formation rules

      (a)   do not create phonological words (pp. 118,
            302);

      (b)   can take syntactic phrases as their bases
            (p. 361);

      (c)   create complex structures which may be
            spread over more than one head position
            at the level of D-structure (pp. 118f,
            362); and

      (d)   create complex structures, the constituents
            of which are syntactically accessible inso-
            far as they can be thematically linked to
            empty constituents in phrase structure (pp.
            304ff).[15]

On the other hand, extended word formation rules are dis-
tinguished from syntactic rules by virtue of exhibiting a
number of properties that are characteristic of morphologi-
cal word formation rules according to Stowell.

(42) Like morphological word formation rules (and unlike
      syntactic rules), extended word formation rules

      (a)   are highly language-specific (p. 304);

      (b)   do not generalize over categories (p. 303);

      (c)   are sensitive to phonological information
            such as the native-latinate distinction
            (p. 332ff);

(d)   may display partial productivity (p. 306);

(e)   may have idiosyncratic effects on stress
        (p. 286);

(f)   may be extrinsically ordered (p. 341); and

(g)   create lexical categories, the constituents
        of which cannot be separated by the applica-
        tion of syntactic movement rules (pp. 118,
        318, 325).

Note, however, that Stowell's characterization of extended
word formation rules, as presented in (41) and (42), cannot
serve as a basis for distinguishing between extended word
formation rules on the one hand and rules of morphology or
syntax on the other hand.   For instance, Stowell
(1981:ch. 7) proposes a rule of Reanalysis which he consi-
ders to be a syntactic rule despite the fact that it creates
complex verbs, that these complex verbs are not phonologi-
cal words, that they are identical in structure to the com-
plex verbs created by Particle Incorporation (or Particle
Incorporation preceded by NP Incorporation), and that the
complex verbs created by Reanalysis are inaccessible to
syntactic movement rules. [16]   By contrast, he (1981:
285, 301) proposes that the rules adjoining clitics to
verbal stems are "word formation rules".   These rules are
like the rules of NP and Particle Incorporation and the
rule incorporating prenominal adjectives in that the clitic
is linked with a syntactic argument position in $\overline{V}$. Yet
they differ from the foregoing rules in that the clitics
and the verbs to which they are adjoined form a single
phonological word according to Stowell (1981:284).   It is
therefore not clear whether the rules responsible for ad-
joining clitics to verbal stems are rules of morphology or
extended word formation rules, as they display properties
of both rule types.

What is needed, clearly is a theory of extended word forma-
tion on the basis of which it would be possible to draw a

principled distinction between extended word formation rules
and, on the one hand, rules such as the rules of cliticiza-
tion and, on the other hand, the rule of Reanalysis. Stowell's
theory of extended word formation fails to draw the required
distinction, because it is presented in terms of an obscure
notion 'extended word formation rule'. As a consequence of
this failure, Stowell's claim that rules such as Particle
Incorporation and NP Incorporation (and V-raising in Dutch
--- see n.13 above) have the properties which they have
because they are extended word formation rules, is virtual-
ly irrefutable.

Let us consider, next, the question of whether the claim
that the grammars of English and Dutch must be assumed to
include a component of extended word formation rules is in-
dependently motivated. As was mentioned in par. 4.3.1.1,
Stowell proposes the rules of Particle Incorporation and NP
Incorporation in English in order to be able to uphold his
(1981:87) claim that there is no need for category-specific
phrase structure rules in the grammars of human languages.
The proposal forms part of an attempt by Stowell to deal
with apparent counterexamples to his claim that the major
empirical effects of the traditional category-specific
phrase structure rules can be deduced from other principles
of the grammar, such as principles of θ-role assignment,
the Projection Principle and an adjacency condition on Case
assignment. Recall that the latter condition stipulates
that an NP cannot be assigned Case unless it is strictly
adjacent to its governing verb.

Verb-particle combinations in English pose problems for
Stowell's theory of a universal, category-neutral base com-
ponent in that

(43)(a)   the verb-particle construction appears to be
          limited to the verbal system, as evidenced by
          the ill-formedness of the derived nominal
          *the turning (of) the light on;

   (b)   a verb-particle construction such as turned
          on the light apparently violates the adjacency
          condition on Case assignment;

   (c)   the verb-particle construction appears to be
          arbitrarily limited to only a small number of
          languages.[17]

However, if verb-particle combinations are complex verbs
formed by the application of NP Incorporation and/or Parti-
cle Incorporation, the facts of (43) are no longer proble-
matic for Stowell's general theory of phrase structure.

The question is whether there is independent evidence for
postulating extended word formation rules such as Particle
Incorporation and NP Incorporation, apart from the fact
that they offer a neat way of achieving consistency with
the adjacency condition on Case assignment and obviating
the need for category-specific phrase structure rules in
the grammars of English and Dutch. For notice that a num-
ber of the structures which Stowell proposes to derive by
means of extended word formation rules are structures which
would otherwise have violated the adjacency condition on
Case assignment and/or necessitated the postulation of
category-specific phrase structure rules. This is true of
structures containing one or more auxiliaries and a main
verb in Dutch (Stowell 1981:117ff), structures containing
prenominal adjectives in English (Stowell 1981:282ff), the
auxiliary complex in English (Stowell 1981:288f), and
double object and verb-particle constructions in English
(Stowell 1981:ch. 5).

Now, if an apparent violation of the adjacency condition
on Case assignment and/or a possible need for category-
specific phrase structure rules were the only considerations

which necessitated the proposal of extended word formation
rules, then the proposal could surely be argued to be ad
hoc. That is, extended word formation rules as a type of
formal device could be argued to represent a mere protec-
tive mechanism, the adoption of which serves no other pur-
pose than to save Stowell's general theory of phrase struc-
ture from embarrassing counterevidence.

Stowell in fact presents an impressive array of independent
evidence for the proposal that the grammar should include a
formal device with the properties which he attributes to
extended word formation rules, i.e. the properties in (41)
and (42) above. Thus, in proposing that an extended word
formation rule analyze a main verb and its auxiliaries as a
single complex verb syntactically (although not phonologi-
cally) in languages such as English, Dutch and French,
Stowell (1981:118, 288f) argues that such an analysis can
account for the fact that auxiliaries in these languages
perform exactly the same grammatical function as morpholo-
gical affixes in languages such as Japanese and Sanskrit.
Similarly, the rule in terms of which a verb and a following
string of unstressed pronouns in Dutch, or a prenominal
adjective and a noun in English, are analyzed as a complex
lexical category syntactically, according to Stowell (1981:
120f, 285ff), can account for the fact that these unstressed
pronouns and prenominal adjectives behave like morphologi-
cally generated clitics in other languages in (i) exhibiting
arbitrary but invariant order, (ii) being syntactically
cohesive, and (iii) exhibiting idiosyncratic stress patterns.
We saw in par. 4.3.1.1 above that an incorporation analysis
of verb-particle combinations can account for a number of
problematic properties of verb-particle combinations other
than those mentioned in (43). The same is true of double
object-NP constructions. According to Stowell (1981:307),
an incorporation analysis "not only solves the special pro-
blems that arise for a theory with a category-neutral base,
but also leads to interesting solutions to a number of long-
standing mysteries" associated with these constructions.

Among these "mysteries", according to Stowell (1981:360),
are (i) the obligatory nature of double object construc-
tions involving possessor indirect objects, (ii) the idio-
syncratic behaviour of double object constructions with-
regard to the rules of WH-movement and NP-movement, and
(iii) the limitation of the construction to verbs of a
specific morphological stem class, viz. the native stem
class. A detailed discussion of Stowell's arguments falls
outside the scope of this study and the reader is referred
to (Stowell 1981: ch. 5) for more details. Finally, accor-
ding to Stowell, the postulation of a rule of Particle
Incorporation for Dutch can account for (i) the asymmetry
between WH-movement and NP-movement with regard to preposi-
tion stranding in this language (Stowell 1981:442f),
(ii) the asymmetric behaviour with regard to V-raising
exhibited by particles and motional post-positions on the
one hand and intransitive prepositions and nonmotional
postpositions on the other hand, and (iii) the absence of
dangling particles in multiple V-raising constructions ---
see (Stowell 1981:ch. 7) for discussion.

Thus, the structures which necessitate the postulation of
extended word formation rules not only involve apparent
violations of the adjacency condition on Case assignment
and/or pose problems for Stowell's assumption that the
theory of grammar does not allow for category-specific
rules of phrase structure. These structures also exhibit
an array of other problematic properties which cannot be
explained by an analysis on which these structures are
generated either by ordinary word formation rules, or by
rules of syntax. Insofar as some device with properties
such as those attributed to extended word formation rules
by Stowell appears, therefore, to be required in the gram-
mar to account for the various other problematic proper-
ties of the structures concerned, Stowell's postulation of
a device to satisfy this requirement can be argued to be
independently motivated, hence non-ad hoc.

We have seen, therefore, that Stowell's claim that the gram-
mars of (at least) English and Dutch must be assumed to in-
clude a component of extended word formation rules is partly
well-founded. This claim is well-founded insofar as it is
non-ad hoc. That is, the need for rules with pro-
perties such as those attributed to extended word formation
rules appears to be independently motivated. The claim is
problematic, however, because it has been shown to be vir-
tually irrefutable. The irrefutability of the claim stems
from the fact that the content of the notion 'extended word
formation rule' with which Stowell operates is insufficient-
ly explicated by him. Thus, it could be considered a short-
coming of Stowell's incorporation analyses of verb-particle
combinations in English and Dutch that a central claim of
these analyses, viz. the claim that the rules of Particle
Incorporation and NP Incorporation are extended word forma-
tion rules, is irrefutable because of the obscurity of the
notion 'extended word formation rule'.

Apart from the problematic nature of the claim that the
rules of Particle Incorporation and NP Incorporation belong
to a special type of rule, viz. extended word formation
rules, the rules themselves have shortcomings which reflect
negatively on Stowell's incorporation analysis. These will
be considered in par. 4.3.2.2 and par. 4.3.2.3 below.

4.3.2.2   The rule of NP Incorporation in English

A second problematic aspect of Stowell's incorporation ana-
lysis concerns his claim that the discontinuity of the verb
and the particle in English sentences such as (31 b) is the
result of the application of NP Incorporation before Particle
Incorporation. The proposed rule of NP Incorporation is
claimed by Stowell (1981:301) to be the same rule of NP In-
corporation which is independently required in the grammar
of English to account for the incorporation of the indirect

object-NP in double object constructions such as (33) above.
There are two problems with this claim.

A first problem with this claim stems from the fact that
Stowell fails to consider an important difference between
double object constructions such as (33) and discontinuous
verb-particle constructions such as (31b). Recall that
Stowell (1981:301) initially proposes the NP Incorporation
and Particle Incorporation analyses of double object and
continuous verb-particle constructions respectively to ex-
plain why Case is assigned to the direct object-NP in con-
tinuous verb-particle constructions such as (31a) and
double object constructions such as (33), despite the
fact that the NPs in question are nonadjacent to the verb.
What Stowell fails to consider is that in the case of dis-
continuous verb-particle combinations such as (31b) there
is no analogous, compelling reason for assuming that the
direct object-NP is incorporated in the verb. The NP in
question will receive Case as required by virtue of being
adjacent to and governed by the Case-assigning verb at the
level of phrase structure. Stowell's failure to consider
this difference between discontinuous verb-particle combi-
nations on the one hand and continuous verb-particle com-
binations on the other hand, has two potentially damaging
consequences.

First, the claim that discontinuous verb-particle combina-
tions too are assigned a complex verb structure such as
(32b) above as a result of the interaction of NP Incorpo-
ration and Particle Incorporation has the following con-
sequence. Given that no general principle such as the
adjacency condition on Case assignment forces a complex
verb analysis in the case of discontinuous verb-particle
combinations, the structure (44) below must be presumed
to be a possible structure for the sentence (31b) as well.[18]

(44)   Kevin [$_{VP}$ [$_V$ turned] [$_{NP}$ the light] [$_{PP}$ [$_P$ on]]]

It appears then that, within Stowell's framework, sentences
such as (31b) containing discontinuous verb-particle combi-
nations may have a dual analysis. They may be analyzed
both as in (32b) and as in (44). Thus, a discontinuous
verb-particle combination such as *turned ... on* in (31b)
may be analyzed both as a complex verb and as a phrase
within Stowell's framework. A continuous verb-particle
combination such as (31a), by contrast, is analyzable only
as a complex verb, i.e. as in (32a) above. The assignment
of different structures to continuous and discontinuous
verb-particle combinations respectively, however, can be
shown to incorrectly predict a difference in syntactic
behaviour between the two types of constructions in English.
Thus, in the discussion of Selkirk's dual structure analy-
sis of verb-particle combinations in par. 3.5.2 above,
it was argued that the assignment of a word structure to
continuous verb-particle combinations and a phrasal struc-
ture to the discontinuous combinations wrongly predicts
that the constituents of the former will be less accessible
to syntactic rules, such as rules of conjunction, modifica-
tion, gapping and preposing, than constituents of the lat-
ter, and vice versa.

Let us consider the second consequence of Stowell's failure
to take account of the fact that the proposed incorporation
analysis of discontinuous verb-particle combinations does
not follow from the adjacency condition on Case assignment.
If the verb *turned* and the NP *the light* in the sentence
(31b) *Kevin turned the light on* can be analyzed as in (32b)
above, i.e. as a complex verb created by the extended word
formation rule of NP Incorporation, it must be assumed that
any sequence of a verb and a noun phrase is analyzable as a
complex verb. This is clearly an undesirable consequence.
Ordinary V-NP sequences, which are not part of a double
object or verb-particle construction, and of which the NP
is not a so-called idiom chunk, do not behave like words.[19]
If they did, syntactic rules such as the rule Move α , for

instance, would not have been able to apply to such sequen-
ces.

In order to prevent the grammar from redundantly assigning
a complex verb structure to every ordinary phrasal V-NP
sequence generated, the rule of NP Incorporation would have
to be restricted so as to apply only to double object verbs
and to verbs appearing in verb-particle combinations.
Whereas the double object verbs in English constitute a re-
stricted and therefore specifiable class of verbs, the verbs
that can appear in verb-particle combinations do not.[20]   It
is therefore difficult to see how NP Incorporation could be
constrained so as to apply only to verbs appearing in verb-
particle combinations (and to double object verbs). In the
absence of such a restriction, the grammar will incorrectly
assign both a word and a phrase structure to all V-NP
sequences.

Thus, the claim that the verb and direct object NP in a dis-
continuous verb-particle combination are assigned a complex
verb structure has been shown to have two potentially unde-
sirable consequences. First, because a phrasal analysis of
discontinuous verb-particle combinations is not ruled out
by the adjacency condition on Case assignment, it must be
assumed that a sentence such as (31b) containing a discon-
tinuous verb-particle combination may be assigned both a
phrasal analysis such as (44) and a complex word analysis
such as (32b). But such a dual structure analysis wrongly
predicts that discontinuous verb-particle combinations will
exhibit syntactic behaviour which differs from that of con-
tinuous verb-particle combinations which are assigned only
a complex verb analysis. Second, in the absence of a
requirement that the application of NP Incorporation be con-
ditioned by a general principle such as the adjacency con-
dition on Case assignment, any V-NP sequence may be incor-
rectly assigned both a complex verb structure by the rule of
NP Incorporation and the structure of a verb phrase in ac-
cordance with principles of phrase structure. The fact that

it has these undesirable consequences reflects negatively
on Stowell's claim that the rule of NP Incorporation applies
in the derivation of discontinuous verb-particle combina-
tions.

4.3.2.3 Failure to account for the discontinuity of verbs and particles in Dutch

A third problematic aspect of Stowell's incorporation ana-
lysis concerns the way in which he proposes to account for
the fact that the particle and the verb may be discontinuous
in phrase structure. The particle and the verb may be dis-
continuous as a result of the appearance of the verb in
second position as shown in (45a), in V-raising construc-
tions as shown in (45b) and in *aan het* + infinitive con-
structions as shown in (45c) --- see par. 2.2 above.

(45)(a) *Hij belde het meisje op.*
        he   rang the girl   up
        'He rang the girl up.'

   (b) *dat hij het meisje op kon   bellen*
       that he the girl   up could ring
       'that he could ring up the girl'

   (c) *dat hij het meisje op aan het   bellen is*
       that he the girl   up PROGRESSIVE ring   is
       'that he is ringing up the girl'

To account for the discontinuity of the verb and the parti-
cle in V-second structures such as that underlying (45a),
Stowell (1981:90, 117ff) assumes that Dutch utilizes both
options provided by Universal Grammar for the placement of
the head in $\overline{V}$. That is, both the $\overline{V}$-initial and the $\overline{V}$-final
head position are realized in phrase structure. This
amounts to assuming that $\overline{V}$-structure in Dutch is double-

headed. Moreover, the constituents of a complex verb
created by a rule of the extended word formation component,
i.e. a complex verb with its internal phonological word
boundaries still intact, may be inserted discontinuously
into the two head positions. Thus (45a) and its embedded
counterpart would have roughly the structures shown in
(46a) and (46b) respectively.

(46)(a) *hij [$_{\overline{V}}$ [$_V$ belde] het meisje [$_V$ op]]*
       he   rang   the girl   up

   (b) *dat hij [$_{\overline{V}}$ [$_V$ ___] het meisje [$_V$ op + belde]*
       that he   the girl   up   rang

As noted by Stowell (1981:362), the assumption that the com-
plex constituents created by extended word formation rules
may be inserted discontinuously in phrase structure calls
for some special provisions regarding the nature of the
interaction between lexical insertion and the principles
of $\overline{X}$-theory. He does not give any indication of the nature
of these special provisions, however. Neither does he have
any concrete proposals regarding the way in which the gram-
mar determines in which of the two head positions the verbal
constituent of such complex structures is to be inserted.
He (1981:117-118) suggests that the position in which the
verb is inserted is "perhaps conditioned by principles re-
lating to government", but does not spell out the details.

Even if it were possible to account for the insertion of
the verb in one or the other head position within $\overline{V}$ on the
basis of principles of government theory, Stowell would
still have no explanation for the fact that only the verbal
component of the complex verb, but never the full complex
verb, can appear in the $\overline{V}$-initial head position. That is,
he would have no explanation for the ill-formedness of (47).

(47) **hij [$_{\overline{V}}$ [$_V$ op + belde] het meisje [$_V$ ___]]*
      he   up   rang   the girl

That complex verbs should be able to appear in the $\overline{V}$-initial head position, leaving the $\overline{V}$-final head position empty, is illustrated by the well-formedness of (48) --- see also n. 2 above.

(48)   Jan $[_{\overline{V}}$ $[_V$ _over_ + _weegt]_ het voorstel $[_V$ ___ $]]$
       John   over   weighs the proposal
       'John considers the proposal.'

As far as the problem of accounting for the discontinuity of the verb and the particle in V-raising constructions such as (45b) is concerned, Stowell has even less to say. One way of explaining why the particle may appear separated from the verb in such constructions, would be to argue that particles may also appear as intransitive prepositions at D-structure. That is, Stowell could argue that the rule of Particle Incorporation is optional. If it applies, a complex verb is formed which is treated as an entity by the rule of V-raising. Alternatively, a particle could originate as an intransitive preposition in D-structure. In the latter case it would not be available as part of the verb to the rule of V-raising, which is an extended word formation rule as well, according to Stowell (1981:463) --- see n. 13 for discussion. This would explain the discontinuity of the verb and the particle in V-raising constructions such as (45b).

The same argument would be possible in the case of _aan het_ + infinitive constructions such as (45c). But if Stowell were to assume that Particle Incorporation is an optional rule and that there is an alternative way of generating particles, his analysis would face the same problem as Van Riemsdijk's: it would provide for two possible structural descriptions of verb-particle combinations. A given verb-particle combination could be analyzed as a complex verb created by the rule of Particle Incorporation, or it could be analyzed as a syntactic string consisting of an intransitive preposition and a verb. As pointed out in connection

with Van Riemsdijk's analysis, a dual structure analysis
fails to express the generalization that a combination of a
particle and a verb has the same subcategorization regard-
less of whether it is analyzed as a complex verb or as a
phrase --- see par. 4.2.2.1 above. Moreover, it was
argued in par. 4.2.2.2 that a phrasal analysis of verb-
particle combinations incorrectly predicts that the consti-
tuents of these combinations will be accessible to rules of
syntax. A dual structure analysis also predicts that one
and the same verb-particle combination will behave diffe-
rently with regard to syntactic rules, depending on whether
it is analyzed as a complex verb or as a phrase, which is
clearly impossible.

An explanation of the well-formedness of (45b) and (45c)
on the basis of the assumption that Particle Incorporation
is an optional rule is therefore unavailable to Stowell.
Stowell himself appears to assume that all verb-particle com-
binations arise as a result of the application of Particle
Incorporation. This assumption is implicit in his (1981:
463) claim that there is a difference between particles and
intransitive prepositions and that this difference may be
ascribed to the fact that "particles originate within the
structure of the complex verb at D-structure". Given this
assumption, the particle op in (45b) and (45c) must be con-
sidered to occur in the relevant positions as a result of
the application of Particle Incorporation. If so, Particle
Incorporation would have to be able to apply after V-raising
and the rule forming aan het + infinitive constructions, in-
corporating the particle into the complex verb formed by the
latter rules. That is, (45b) and (45c) would have the struc-
tures shown in (49a) and (49b) respectively.

(49)(a) *dat hij het meisje* $[_V [_{Prt}\underline{op}] [_V$ *kon* $\underline{bellen}]]$
         that he the girl   up   could ring

   (b) *dat hij het meisje* $[_V [_{Prt}\underline{op}][_V$*aan het* $\underline{bellen}]]$ *is*
         that he the girl   up PROGRESSIVE ring   is

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In order to account for the well-formedness of (50a) and
(50b) in which the verb-particle combination is continuous,
on the other hand, Particle Incorporation would have to
apply before V-raising and the rule forming *aan het* + infi-
nitive constructions, presumably producing roughly the
structures shown.

(50)(a)　*dat　hij　het　meisje* $[_V$　*kon*　$[_V$ $[_{Prt}$*op*$]$ $[_V$*bellen*$]]]$
　　　　　that　he　the girl　　　could　　　up　　ring

　(b)　*dat　hij　het　meisje* $[_V$ *aan het* $[_V[_{Prt}$*op*$][_V$*bellen*$]]]$ *is*
　　　　that　he　the girl　PROGRESSIVE　　　up　　ring　　　is

It appears then, that in order to account for the positional
variation of particles in V-raising and *aan het* + infinitive
constructions, Stowell would have to make the additional as-
sumption that the extended word formation rules of Dutch are
unordered with respect to one another. Note that this would
be contrary to the assumption made for English. NP Incorpo-
ration and Particle Incorporation in English are claimed to
be extrinsically ordered by Stowell, as was shown in par.
4.3.1.1 above. The acceptability of such conflicting as-
sumptions about the ordering possibilities of extended word
formation rules can be judged only with reference to a gene-
ral theory of extended word formation, which Stowell fails
to present as was noted in par. 4.3.2.1 above.

It has to be concluded, therefore, that Stowell's incorpo-
ration analysis of Dutch verb-particle combinations, as it
stands, cannot account for all aspects of the discontinuity
of verbs and particles in Dutch. In order to account for
the problematic properties of V-second, V-raising and *aan het*
+ infinitive constructions, Stowell would have to make addi-
tional assumptions about the interaction between lexical in-
sertion and principles of phrase structure and about the
interaction between extended word formation rules. Stowell's
failure to state these assumptions and their consequences

for the general theory of grammar detracts from the merit
of his incorporation analysis of verb-particle combinations
in Dutch.

4.3.2.4 Summary

Stowell's incorporation analysis of verb-particle combina-
tions has been shown to have the following shortcomings:

(51)(a) Stowell's claim that rules such as Particle
        Incorporation and NP Incorporation belong to a
        component of extended word formation rules is
        only partly well-founded in that such a claim

        i.   appears to be independently motivated
            and hence non-ad hoc; but

        ii. is irrefutable by virtue of being formu-
            lated in terms of an obscure notion 'ex-
            tended word formation rule'.

  (b) The claim that the NP Incorporation rule which
        is responsible for the formation of double ob-
        ject constructions in English applies in the
        formation of discontinuous verb-particle
        combinations as well, has two undesirable conse-
        quences, viz.

        i.   that it may result in the assignment of dif-
            ferent structures to continuous and discon-
            tinuous verb-particle combinations, thus
            incorrectly predicting a difference in syn-
            tactic behaviour between the two types of
            constructions; and

        ii. that any V-NP sequence is redundantly, and
            incorrectly, assigned both a phrasal struc-
            ture and a complex verb structure.

(c) In order to account for the discontinuity of
     verb-particle combinations in Dutch

     i.   special assumptions have to be made with
          regard to the interaction between lexical
          insertion and principles of phrase struc-
          ture, the nature and theoretical conse-
          quences of which are not clear; and

     ii. it has to be assumed that, unlike the
          rules of Particle Incorporation and NP
          Incorporation in English, extended word
          formation rules such as Particle Incor-
          poration and V-raising in Dutch are un-
          ordered with respect to one another.

4.3.3   General linguistic assumptions

Let us consider the general linguistic assumptions which
Stowell explicitly or implicitly makes or would have to
make in arguing for the well-foundedness of his incorpora-
tion analysis on the basis of evidence relating to the
properties of verb-particle combinations described in chap-
ter 2 above. Recall that the central claims expressed by
Stowell's incorporation analysis are the following:

(52)(a) Verb-particle combinations are syntactically
         complex words.

   (b) Verb-particle combinations are created by rules
        of the extended word formation component of the
        grammar.

First, the separability of the verb and the particle by syn-
tactic rules --- see par. 2.2 above --- is argued by
Stowell to bear on the well-foundedness of the claim (52b).
Thus, Stowell (1981:302) argues, given that verb-particle

combinations are complex verbs, the structures underlying
sentences with discontinuous verb-particle combinations such
as (31b) cannot be derived from the structures underlying
sentences with continuous verb-particle combinations such
as (31a) by means of a syntactic rule of Particle Movement.
Rather, both structures must be assumed to be the result of
the application of extended word formation rules. Underly-
ing Stowell's argument is the following general linguistic
assumption:

(53)   The constituents of syntactically complex
          words cannot be separated by syntactic rule.

The assumption (53) is, of course, a reflex of the Lexical
Integrity Hypothesis which Stowell (1981:210, 302, 325)
explicitly accepts.

It may be asked at this point whether Stowell accepts the
strong version of the Lexical Integrity Hypothesis presented
as (6) in chapter 1 above, or whether he accepts a weaker
version of this hypothesis such as, e.g.,the version presen-
ted as (28) above. For recall that, on Stowell's analysis,
the constituents of Dutch verb-particle combinations may be
inserted discontinuously at the level of D-structure, de-
spite the fact that these combinations are analyzed as syn-
tactic words, i.e. X^0 categories. Thus, although he main-
tains that the constituents of complex words cannot be
separated by the application of syntactic movement rules,
he assumes that constituents of complex words such as verb-
particle combinations, which are syntactic but not phonolo-
gical words, may be separated in syntactic structure by
virtue of the interaction of lexical insertion rules and
principles of phrase structure such as, e.g.,principles of
government and headedness. That is, Stowell makes the as-
sumptions (54) and (55).

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(54)   Syntactically complex words generated by ex-
         tended word formation rules retain their in-
         ternal phonological word boundaries.

(55)   Lexical insertion rules are sensitive to the
         presence of internal phonological word boun-   ⸙
         daries.

Stowell does not provide independent evidence for the as-
sumptions presented above.   That such evidence is required
in the case of the assumption (54) is indicated by the
fact   that   it   is inconsistent with a general constraint
on word formation rules accepted within at least one widely
adopted general theory of word formation.   The assumption
(54) is inconsistent with the Bracket Erasure Convention
which forms part of the theory of Lexical Phonology and Mor-
phology and which was presented as (30) in par. 3.4 above.
The Bracket Erasure Convention ensures that only the exter-
nal categorial brackets and phonological boundaries of a
syntactically complex word remain once all word formation
rules have applied.   As such it is merely a formal expres-
sion of a general constraint on word formation rules known
as the Morphological Island Constraint, as was noted in
par. 3.4.

It is clear that the assumption (54) is inconsistent with
the Bracket Erasure Convention.   As pointed out in par.
4.3.2.1 above, the assumption that extended word formation
rules differ from ordinary rules of morphology, inter alia
with regard to the erasure of internal phonological bounda-
ries, remains ad hoc unless it can be shown to follow from
a principled distinction between extended word formation
rules on the one hand, and ordinary rules of morphology
and rules of phrase structure on the other hand.

As far as (55) is concerned, once again, Stowell provides
no justification for his acceptance of this assumption.
This omission on Stowell's part is unfortunate, as it could
be argued that the acceptance of (55) is inconsistent with
the general requirement that syntactic rules are not sensi-
tive to phonological information, as again pointed out
recently by Sproat (1985:334). The question of the well-
foundedness of (55) is particularly relevant to the ques-
tion of whether Stowell accepts the strong version of the
Lexical Integrity Hypothesis. Thus, Stowell could argue
that (55) is well-founded because lexical insertion rules
are not syntactic rules "proper" and are therefore not sub-
ject to the requirement that syntactic rules should not be
allowed to refer to phonological information. That is,
Stowell would have to make the following general linguistic
assumption:

(56)   Lexical insertion rules are not subject to the
         same general constraints as rules of the syn-
         tactic component.

But if lexical insertion rules were to be excluded from the
class of syntactic rules for purposes of the assumption
(55), then there would also be a principled reason for ex-
cluding lexical insertion rules from the class of syntactic
rules for purposes of the Lexical Integrity Hypothesis. In
the latter case Stowell's incorporation analysis would be
consistent with the strong version of the Lexical Integrity
Hypothesis despite the fact that this analysis embodies the
claim that complex words formed by extended word formation
rules may be inserted discontinuously in syntactic struc-
tures.

That Stowell does indeed accept the assumption (56) that
lexical insertion rules are not necessarily subject to the
same constraints as syntactic rules is clear from the fol-
lowing remarks by him (1981:88):

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> ".... by restricting the vocabulary of the
> theory [of phrase structure --- CleR] to
> primitive terms relating exclusively to
> structural notions, we introduce a natural
> distinction between principles of the theory
> of phrase structure on the one hand, and
> rules mapping between components on the other.
> In these terms we might hypothesize that each
> component of grammar has a core set of prin-
> ciples which are defined exclusively in terms
> of the primitives of that component. It may
> be that such principles are invariant across
> languages, while only the 'hybrid' rules re-
> ferring to notions from more than one compo-
> nent are subject to parametric variation."

Lexical insertion rules, according to Stowell (1981:92),
"involve lexical entries as well as phrase structure confi-
gurations" and, hence, could be viewed "as mapping between
the lexicon and the phrase structure (X-bar) component".
Given their "hybrid" nature, it is to be expected that they
will, in principle, be able to refer to lexical information
which is not accessible to purely syntactic rules and prin-
ciples. On Stowell's view, the assumption (55) would there-
fore represent a parametric property of lexical insertion
rules in languages, such as Dutch and English, which have
extended word formation rules. Moreover, the property is
related in some way to the fact that Dutch utilizes both
options provided by Universal Grammar for the placement of
the head in $\overline{V}$. In conclusion, therefore, we have seen that
Stowell's acceptance of the assumption (55) is not inconsis-
tent with the acceptance by him of the strong version of the
Lexical Integrity Hypothesis.

Second, the fact that verb-particle combinations take inflec-
tional affixes internally --- see par. 2.3 above --- is
certainly consistent with Stowell's incorporation analysis on
which such combinations are assumed not to constitute a single
phonological word. On such an analysis it is to be expected
that inflectional affixes will attach to the verbal consti-
tuent of a verb-particle combination and not to the combina-
tion as a whole, given that the following general assumption
is made:

(57)   Inflectional affixation rules are sensitive
         to internal phonological word boundaries ap-
         pearing in the syntactically complex con-
         stituents created by extended word formation
         rules.

Notice that the assumption (57) too is inconsistent with the
Bracket Erasure Convention referred to above. Given that
extended word formation rules could be shown to be exempt
from the latter condition on principled grounds, however,
the assumption (57) would certainly be compatible with any
general theory of inflection on which rules of inflection
are assumed to be part of the morpho(phono)logical rule com-
ponent of the grammar. It is not compatible with a theory
on which inflectional affixes are assumed to be introduced
by rules of syntax, as the latter rules are supposed not to
be sensitive to phonological information, as pointed out
above.

Alternatively, Stowell's incorporation analysis could account
for the ability of verb-particle combinations to take inflec-
tional affixes internally if the assumption (58) was made.

(58)   Extended word formation rules apply after
         rules of inflection.

In addition to making correct predictions about the occur-
rence of internal inflectional affixes in words formed by
extended word formation rules, the assumption (58) does not
entail a violation of the Bracket Erasure Convention as
does the assumption (57). However, Stowell neither expli-
citly makes the assumption (57) or (58), nor indicates how
the fact that verb-particle combinations take inflectional
affixes internally may be brought to bear on the claims ex-
pressed by his incorporation analysis. The remarks above
are therefore merely speculative.

Third, Stowell (1981:302) cites the fact that "Intuitively,
the verb-particle pair functions as a single semantic word"
--- see also par. 2.4 above --- as evidence in support
of the claim (52a) that verb-particle combinations be as-
signed the status of (syntactic) words. As examples of
verb-particle combinations functioning as single semantic
words, he cites "idiomatic pairs such as *turn on* 'excite',
or *put off* 'delay'". Facts such as these about the noncom-
positionality of verb-particle combinations can be brought
to bear on the validity of the claim that these combinations
should be assigned a word structure only if the assumption
(59) is made.

(59)   Syntactically complex strings which are
         semantically noncompositional must be as-
         signed a word structure.

The assumption (59), which is not justified by Stowell, was
shown in par. 3.4 above to reflect the Aronovian view about
the relationship between word structure and semantic noncom-
positionality. Aronoff's view was presented as (34) in par.
3.4 above.

Fourth, the ability of an incorporation analysis to account
for the fact that verb-particle combinations may differ in
subcategorization from the verbs which are the heads of such
combinations --- see par. 2.5 above --- follows natural-
ly from the claim (54b) if the assumption (60) is made.

(60)   Word formation rules, but not syntactic
         rules, can affect the subcategorization
         of a word.

Given (60), it follows that verb-particle combinations, by
virtue of the fact that they may display idiosyncratic sub-
categorization, must be generated by word formation rule.

Stowell does not explicitly make the assumption (60). How-
ever, the assumption (60) is merely a reflex of the Projec-
tion Principle presented as (22) in par. 3.3.2.3 above.
In terms of this principle the subcategorization properties
of lexical items must be observed at all syntactic levels
of representation. It follows that a rule which created
complex expressions which differed in subcategorization
from their heads could not be a rule applying at any of the
syntactic levels of structure, as such a rule would violate
the Projection Principle. Such a rule could therefore only
be a word formation rule, given that the further assumption
(61) is made.

(61)   Word formation rules apply before lexical
         insertion.

Only if the assumption (61) is made does it follow from the
Projection Principle that word formation rules, but not syn-
tactic rules, can change subcategorization. For it is via
lexical insertion that the properties of lexical items are
projected onto syntactic representations.

Thus, although the assumption (60) is not explicitly made
by Stowell, the assumption may be argued to be implicitly
accepted by him because it follows from the Projection Prin-
ciple which Stowell does accept. His acceptance of the Pro-
jection Principle is indicated by the way in which he (1983:
463) proposes to solve the problem of accounting for the
fact that verbs with incorporated motional postpositions in
Dutch differ in subcategorization from the corresponding
single verbs appearing in syntactic configurations with a
nonincorporated motional postposition. He (1981:463) at-
tempts to solve the problem by making the following general
assumption:

(62)   The subcategorization frame of a verb may
          be satisfied either by an incorporated con-
          stituent or by a constituent appearing in
          the relevant subcategorized position in a
          syntactic configuration.

Stowell (1981:485 n. 28) justifies the assumption (62) by
showing that it is independently needed in order to account
for the properties of clitics.[21]   More important, however,
notice that by assuming (62) Stowell can maintain the claim
that in both the sentence (31a) containing the complex verb
turned on and the sentence (31b) containing the complex
verb *turned the light on*, the subcategorization properties
of the verb *turn on* are satisfied, despite the fact that in
the latter case the subcategorized NP does not appear in
the subcategorized direct object NP position at the level
of phrase structure, but forms part of the complex verb.
That is, by assuming (62), Stowell can maintain that the
single subcategorization frame associated with both the
continuous verb-particle combination *turned on* in (31a) and
the corresponding discontinuous verb-particle combination
turned ... on in (31b) is satisfied at the level of D-struc-
ture, even though the subcategorized NP appears phonetical-
ly as part of the complex verb in the latter case.

The important point, however, is that Stowell needs to make
the assumption (62) because he accepts the Projection Prin-
ciple, which requires that the subcategorization properties
of a lexical item must be satisfied at D-structure, S-struc-
ture, and LF.

Fifth, Stowell does not bring the ability of verb-particle
combinations to serve as bases of word formation rules
--- see par. 2.6 above --- to bear on either of the
major claims (52a, b) expressed by his incorporation ana-
lysis. However, if Stowell's incorporation analysis were
to account for this property of verb-particle combinations,
the following general assumption would have to be made:

(63)   Constituents formed by means of extended
         word formation rules can serve as bases of
         rules of morphology.

It may be assumed that the choice of the term "extended
word formation rule" to denote rules such as Particle In-
corporation and NP Incorporation is intended to signify
that these rules belong to the same component of the gram-
mar as ordinary, i.e. morphological, word formation rules.
In this case, some kind of interaction between the two
kinds of word formation rules, such as that implied by
(63), is to be expected. The assumption (63) would be
compatible with a theory of word structure such as that
proposed by Selkirk (1982) in which complex constituents
of the category level Word (X^0) are allowed to serve as
bases for the rules introducing derivational affixes sub-
categorized for sister constituents of the category level
X^0. However, the assumption (63) would probably not be
compatible with a general theory of morphology, such as
that of Allen (1978), which included some version of the
Extended Ordering Hypothesis. In terms of the latter hypo-
thesis, as formulated by Allen (1978:83), rules of word
formation are ordered in such a way as to make it impossi-
ble for compounds to serve as bases for affixation rules.
Given that the complex verbs formed by extended word for-
mation rules resemble compounds rather than derived words,
extended word formation rules would probably be ordered
"after" affixation rules. With such an ordering it would
be predicted that verb-particle combinations cannot serve
as the bases of affixation rules.

Note, furthermore, that the assumption (63) is not incon-
sistent with the No Phrase Constraint presented as (7) in
chapter 1 above. The constituents formed by extended word
formation rules such as Particle Incorporation and NP In-
corporation are words, not phrases. However, this is not
to say that Stowell accepts the No Phrase Constraint. As

was pointed out in (41) above, Stowell (1981:361) accepts
that syntactic phrases must be allowed to form the bases
of extended word formation rules in violation of the No
Phrase Constraint. The rule of NP Incorporation is an
example of an extended word formation rule taking syntac-
tic phrases as its base. As was pointed out in par.
4.2.3 above, the rule of Particle Incorporation in Dutch
too must be assumed to be able to incorporate full PPs
into the verb if the facts of (25) are to be accounted for.

It would appear therefore as if Stowell accepts a weaker
version of the No Phrase Constraint which could be formu-
lated as in (64).

(64)   No Phrase Constraint (weaker version)

          Major syntactic constituents can appear
          within word structures generated by ex-
          tended word formation rules but not within
          word structures generated by rules of mor-
          phology.

Sixth, the syntactic cohesiveness of verb-particle combi-
nations --- see par. 2.7 above --- is considered by
Stowell to support the claim (52a), viz. that these combi-
nations are (syntactically complex) words. Thus, Stowell
(1981:339) observes that the appearance of manner adver-
bials before the particle in English "ought to be com-
pletely impossible if the particle were within the struc-
ture of the verb". Hence, according to Stowell, the ill-
formedness of the sentences in (65), in which a manner
adverbial intervenes between the NP and the particle, fol-
lows from the claim that the V-NP-PP sequences in these
sentences are complex verbs as a result of the application
of NP Incorporation and Particle Incorporation.

(65)(a) *Kevin turned the light QUICKLY off.

    (b) *Janice cut the cabbage CARELESSLY up.

Similarly, the fact that particles and motional postposi-
tions may "function as a unit" with the verb in V-raising
constructions in Dutch is considered by Stowell (1981:462f)
to support his claim that particles and motional postposi-
tions "originate within the structure of the complex verb at
D-structure". The observed syntactic cohesiveness of verb-
particle combinations in English and Dutch can be argued to
support the assignment of a complex verb structure to these
combinations only if the assumption (66) is made.

(66)   The constituents of syntactically complex
           words cannot be separated by syntactic rule.

The assumption (66) clearly is a reflex of the Lexical Inte-
grity Hypothesis.

Seventh, consider finally the stress pattern of verb-parti-
cle combinations --- see par. 2.8 above. The fact that
verb-particle combinations in Dutch exhibit a typical com-
pound stress pattern is not mentioned by Stowell as evidence
for his incorporation analysis of these constructions.
Neither does he present a theory of compound stress assign-
ment for Dutch, or for language in general, from which the
stress properties of verb-particle combinations would follow.
Any attempt to reconstruct the assumptions in terms of which
the stress properties of verb-particle combinations in Dutch
could be brought to bear on either of the claims in (54) would
therefore be mere speculation.

Stowell does not have much to say about the stress proper-
·ties of verb-particle combinations in English either. He
does comment on the stress properties of an analogous con-
struction, however. Thus, Stowell (1986:286) refers to the
often observed difference between the stress pattern of Adj-N

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sequences such as *(a) white house* (with primary stress on
the noun *house*) and that of "true" compounds such as *(the)
White House* (with primary stress on the adjective *White*).
Despite the fact that they exhibit "phrasal stress", Adj-N
sequences such as *(a) white house* are analyzed as complex
nouns formed by an extended word formation rule of Adjective
Incorporation by Stowell (1981:285ff). The fact that these
sequences display "phrasal" stress, unlike "true" compounds
such as *(the) White House*, according to Stowell (1981:286),
is related to the fact that "various morphological affixes
have idiosyncratic effects on stress". That is, he implicit-
ly makes the assumption (67).

(67)   Syntactically complex constituents generated
         by word formation rules may exhibit idiosyncra-
         tic stress patterns.

Given the assumption (67), the fact that verb-particle com-
binations exhibit "phrasal" stress, like the relevant Adj-N
sequences, could be argued to be consistent with an analysis
on which these combinations are formed by means of (extended)
word formation rules, although it does not follow from such
an analysis. Given that the stress properties of verb-parti-
cle combinations in English could be argued to follow from a
phrasal analysis of these constructions, without any addi-
tional assumptions such as (67) having to be made, Stowell's
argument appears to be rather weak. Moreover, Stowell fails
to justify the assumption (67), thereby further weakening
his argument against considering "phrasal" stress to consti-
tute counterevidence to an incorporation analysis of the
relevant Adj-N sequences and, presumably, verb-particle com-
binations in English.

To summarize: it has been shown that in order to argue for
the claims (52a) and (52b) on the basis of evidence relating
to various properties of verb-particle combinations in Eng-
lish and Dutch, Stowell implicitly or explicitly makes or
would have to make the following assumptions:

(68)(a) The constituents of syntactically complex words
         cannot be separated by syntactic rule [= (53) and
         (66)].

    (b) Syntactically complex words generated by extended
         word formation rules retain their internal phono-
         logical word boundaries [= (54)].

    (c) Lexical insertion rules are sensitive to the pre-
         sence of internal phonological word boundaries
         [= (55)].

    (d) Syntactically complex strings which are seman-
         tically noncompositional must be assigned a word
         structure [= (59)].

    (e) Word formation rules, but not syntactic rules,
         can affect the subcategorization of a word [=(60)].

    (f) The subcategorization frame of a verb may be
         satisfied either by an incorporated constituent
         or by a constituent appearing in the relevant
         subcategorized position in a syntactic configura-
         tion [= (62)].

    (g) Constituents formed by means of extended word
         formation rules can serve as bases of rules of
         morphology [= (63)].

    (h) Syntactically complex constituents generated by
         word formation rules may exhibit idiosyncratic
         stress patterns [= (67)].

A number of the assumptions of (68) have been shown either to
follow from or to be consistent with the following general
linguistic assumptions:

(69)(a) The assumption (68a) follows from the strong ver-
         sion of the Lexical Integrity Hypothesis as formu-
         lated in (28) in par. 3.4 above.

(b)   The assumption (68c) is consistent with the as-
       sumption (56) regarding the relation between
       lexical insertion rules and the syntactic compo-
       nent of the grammar.

(c)   The assumption (68d) follows from the Aronovian
       view of noncompositionality presented as (34) in
       par. 3.4 above.

(d)   The assumptions (68e) and (68f) follow from the Pro-
       jection Principle as formulated in (22) in par. 3.4
       above.

In addition to the general linguistic assumptions of (69),
it was shown that Stowell accepts a weaker version of the No
Phrase Constraint, i.e. the version presented as (64) above.

The assumptions (68b), (68g), and (68h) have not been shown
either by Stowell himself or in the discussion above to fol-
low from any independently motivated general linguistic
assumptions. Of these, the assumptions (68b) and (68g), sig-
nificantly, are assumptions about the properties of extended
word formation rules. The fact that these assumptions can-
not be deduced from more general principles reflects a short-
coming of Stowell's incorporation analysis pointed out in
par. 4.3.2.1 above, viz. that Stowell does not present a
principled theory of extended word formation from which it
would follow that putative extended word formation rules
have the properties attributed to them by Stowell. The as-
sumption (68h) must be considered to be completely arbitrary
in view of the fact that Stowell (i) fails to consider the
question of exactly what class of affixes it is that may have
idiosyncratic effects on stress, and (ii) fails to show that
the constituents introduced into complex word structures by
extended word formation rules on the one hand and the rele-
vant class of affixes on the other hand are related in any
way.

Like Van Riemsdijk, Stowell is not very clear about the place
which the word formation component occupies in the grammar.

The proposed rules of the extended word formation component
have been shown to be able to interact to a considerable
extent with principles of phrase structure such as princi-
ples of $\bar{X}$ theory, strict subcategorization, and θ-role
assignment. Yet Stowell considers them to be word forma-
tion rules. Stowell (1981:362) himself acknowledges the
problems posed by his incorporation analysis for "tradi-
tional assumptions" about the interaction between word
formation rules and principles of phrase structure. It
has been shown that for Stowell to be able to adduce the
idiosyncratic subcategorization properties of some verb-
particle combinations as evidence for the claim (52b),
viz. that verb particle combinations are created by extended
word formation rules, he would have to accept the following
hypothesis about the organization of a grammar:

(70)   Word formation rules apply before lexical
         insertion[= (61)].

Although the assumption (70) has nothing to say about the
"place" of word formation rules in the grammar, its impli-
cit acceptance by Stowell indicates that he too accepts
that word formation rules belong to a separate component
of the grammar, i.e. that the word formation component is
distinct from the syntactic component of the grammar.

Having considered the shortcomings both of the lexicalist
analyses of verb-particle combinations discussed in chapter
3 and of the two nonlexicalist analyses discussed in the
present chapter, we are now in a position to consider the
question of how the shortcomings of the different kinds of
analyses bear on the respective general theoretical frame-
works within which these analyses are couched.

Chapter   5

A CRITICAL PERSPECTIVE ON LEXICALIST MORPHOLOGY

5.1   General

This chapter will focus on the general theoretical import of
some of the shortcomings of the analyses of verb-particle
combinations considered in chapters 3 and 4.   First, it will
be argued in par. 5.2 that some of the shortcomings of the
lexicalist analyses of verb-particle combinations considered
in chapter 3 reflect negatively on the lexicalist construal
of the relationship between the syntactic and morphological
components of the grammar as outlined in chapter 1.   Second,
it will be shown in par. 5.3 that the conclusions of par.
5.2 are borne out by a consideration of the major short-
comings of the "nonlexicalist" analyses of verb-particle com-
binations discussed in chapter 4. These shortcomings will
be argued to stem from the fact that Van Riemsdijk and Stowell
too make some essentially lexicalist assumptions about the
relationship between morphology and syntax.

5.2   Assessment of the lexicalist construal of the
relationship between morphology and syntax

Let us consider the way in which some of the shortcomings of
lexicalist analyses of verb-particle combinations considered
in chapter 3 bear on the adequacy of the lexicalist con-
strual of the relationship between morphology and syntax.
Recall that Simpson, Baayen, and Selkirk have been shown to
accept three tenets which are central to the lexicalist con-
strual of the organization of a grammar as outlined in chap-
ter 1, viz.

(1)(a) a strong version of the Lexical Integrity Hypo-
         thesis in terms of which syntactic rules are
         allowed neither to analyze nor to change word
         structure;

   (b)   the No Phrase Constraint which states that mor-
         phologically complex words cannot be formed (by
         WFRs) on the basis of phrases; and

   (c)   the Lexical Component Hypothesis, according to
         which word structure rules apply exclusively in
         a separate, lexical, component of the grammar,
         viz. the lexicon.[1]

As was shown in chapter 3 above, the lexicalist analyses
of verb-particle combinations proposed by Simpson, Baayen
and Selkirk exhibit various shortcomings. Some of these
shortcomings, it will be argued, are the result of the accep-
tance by these morphologists of the hypotheses (1a-c) con-
cerning the relationship between morphology and syntax. As
such, these shortcomings could be taken to reflect negative-
ly on the lexicalist construal of the way in which a grammar
is organized. In particular, three of the shortcomings of
the lexicalist analyses of verb-particle combinations dis-
cussed in chapter 3 can be shown to be symptomatic of the
problematic nature of this construal. These shortcomings
are

(2)(a) the postulation of conceptually redundant de-
         scriptive devices;

   (b)   the postulation of formal devices that are ad
         hoc in a language-specific and/or in a general
         linguistic sense; and

   (c)   the making of incorrect predictions about the
         properties of verb-particle combinations.

5.2.1   Conceptual redundancy

As a typical example of conceptual redundancy resulting from
the acceptance by lexicalist morphologists of the hypotheses
(1a-c) concerning the relationship between morphology and
syntax, consider Simpson's rules for generating $\overline{X}$ categories
in the lexicon. Simpson requires these devices in order to
be able to generate verb-particle combinations (e.g. *hang on*)
and their corresponding nouns (e.g. *hanger on*) in the lexicon
while maintaining that they are phrases, i.e. belong to the
category $\overline{V}$ and $\overline{N}$ respectively. As was shown in par. 3.2.2.1
above, the rules generating $\overline{X}$ categories in the lexicon are
identical in function to, and hence duplicate, syntactic
phrase structure rules. The postulation of lexical rules
which are exact duplicates of syntactic rules, of course, is
conceptually redundant.

The reasons for Simpson's postulation of the device in ques-
tion were indicated in par. 3.4.   On the one hand, given
Simpson's acceptance of the Lexical Integrity Hypothesis, the
only way in which she can account for the syntactic separabi-
lity of verb-particle combinations is by assuming that these
combinations are phrases rather than words. On the other
hand, her acceptance of the No Phrase Constraint and the
Lexical Component Hypothesis forces her to propose that verb-
particle combinations, although they are assigned the cate-
gory $\overline{V}$, are generated by word formation rules in the lexicon.
If she were to allow verb-particle combinations to be gene-
rated by (independently motivated) phrase structure rules,
she would be unable, given her acceptance of the No Phrase
Constraint and the Lexical Component Hypothesis, to account
for the fact that verb-particle combinations may serve as
bases for word formation rules.

Thus we see that it is Simpson's acceptance of the hypothe-
ses (1a-c) concerning the relationship between morphology
and syntax which forces her to maintain that verb-particle
combinations are phrases and yet to shun the use of indepen-

dently needed phrase structure rules to generate these com-
binations. Similarly, it was shown in par. 3.4 that it is
Baayen's acceptance of the hypotheses (1a-c) which forces
him to propose that the rule generating verb-particle combi-
nations, redundantly, be stated twice: once in the lexicon
and once in the syntax.

Consider also Selkirk's unspecified lexical rule which has
to relate verb-particle combinations generated as compound
verbs in the lexicon to the corresponding (discontinuous)
verb-particle combinations generated as phrases in the syn-
tax. As far as its function is concerned, this rule dupli-
cates the syntactic rule Move α. The latter rule is
unavailable to Selkirk because, as was noted in par. 3.5.3
above, she accepts a version of the Lexical Integrity Hypo-
thesis which prevents syntactic movement rules from invol-
ving categories of both word structure and phrase structure.
An alternative analysis on which she would be able to make
use of the independently motivated rule Move α , rather than
the conceptually redundant lexical rule, is unavailable to
her given her acceptance of the No Phrase Constraint and the
Lexical Component Hypothesis. In order to relate continuous
and discontinuous verb-particle combinations by the rule
Move α , continuous verb-particle combinations too would have
to be syntactic phrases. But Selkirk wishes to maintain that
verb-particle combinations can serve as bases of word forma-
tion rules. Therefore she is forced by her acceptance of the
No Phrase Constraint and the Lexical Component Hypothesis to
maintain that continuous verb-particle combinations are lexi-
cally generated compound verbs, rather than syntactically
generated phrases, and to propose that they are related to
the corresponding discontinuous phrases by a lexical rule
rather than by the functionally equivalent, independently
motivated rule Move α .

We see then, that acceptance of the hypotheses (1a-c) con-
cerning the relationship between morphology and syntax neces-
sitates the postulation of conceptually redundant descriptive

devices in the case of all three the lexicalist analyses of
verb-particle combinations which we have considered.

5.2.2   Ad hoc formal devices

The postulation of formal devices that are ad hoc in a lan-
guage-specific and/or a general linguistic sense represents
a second shortcoming of lexicalist analyses of verb-particle
combinations which can be argued to be symptomatic of the
problematic nature of the lexicalist construal of the rela-
tionship between morphology and syntax. The ad hoc devices
in question include:

(3)(a)   Simpson's lexical rule generating $\overline{V}$ categories
         in the lexicon;

   (b)   Baayen's V^i category level, an additional level
         in the projection line of V; and

   (c)   Selkirk's lexical rule which relates lexically
         and syntactically generated verb-particle com-
         binations.

Apart from the fact that the rules mentioned in (3a) and (3c)
have been shown in par. 5.2.1 to be identical in function
and, hence, to duplicate independently required syntactic
rules, the former rules along with the formal device men-
tioned in (3b) have all been argued in preceding paragraphs
to be ad hoc in some sense.[2]

Thus, on the evidence provided by Simpson, her lexical $\overline{X}$ rule
is required solely to account for the properties of verb-
particle combinations (and their corresponding nominals) in
English. Similarly, Baayen has been shown in par. 3.5.2.1
to be unable to provide convincing evidence other than evi-
dence relating to verb-particle combinations for the postula-
tion of a category level V^i in the grammar of Dutch. And,

lastly, Selkirk mentions not one other instance of a lexical
redundancy rule performing a function similar to that of the
rule which she postulates to relate lexically and syntactically
generated verb-particle combinations in English. Neither
does any of these grammarians provide evidence that the de-
vices in question are required in the grammars of other human
languages.

The question is: What necessitated the postulation of these
ad hoc devices? The answer in each case is the same. It is
the acceptance by the morphologists in question of the hypo-
theses (1a-c), and the conception of the relationship between
morphology and syntax which these hypotheses represent, that
necessitates the postulation of the formal devices of (3a-c)
for the analysis of verb-particle combinations. That the
postulation of Simpson's lexical $\overline{V}$ rule and Selkirk's lexi-
cal redundancy rule is part of the cost of accepting a lexi-
calist framework for the analysis of verb-particle combina-
tions has already been demonstrated in par. 5.2.1. Baayen's
postulation of a category level V^i, too, will be shown in
par. 5.2.3 immediately below to be necessitated by his ac-
ceptance of the lexicalist hypotheses (1a-c). It will be
argued that the postulation of this ad hoc formal device is
required to prevent Baayen's analysis from making incorrect
predictions about the properties of verb-particle combinations
in Dutch. That Baayen's analysis would otherwise make the
incorrect predictions in question will be argued to be a con-
sequence of the fact that this analysis is couched in a lexi-
calist framework including the hypotheses (1a-c).

5.2.3   Incorrect predictions

As was indicated in chapter 3, analyses of verb-particle com-
binations proposed within a general theoretical framework in-
cluding the hypotheses (1a-c) make incorrect predictions about
properties of these combinations. This shortcoming will be
argued to be a third manifestation of the problematic nature

of the lexicalist construal of the relationship between mor-
phology and syntax.

We saw in par. 3.2.2.2 above that Simpson's analysis, on
which verb-particle combinations are assigned the category
level $\overline{V}$, wrongly predicts that verb-particle combinations
will display the same syntactic behaviour as other constitu-
ents of the category level $\overline{V}$. Similarly, in par. 3.5.2.3 it
was shown that, in assigning distinct structural representa-
tions to continuous and discontinuous verb-particle combina-
tions respectively, Selkirk's dual structure analysis incor-
rectly predicts a difference in syntactic behaviour between
the two kinds of combinations. Recall also that it has been
argued --- see par. 3.3.2.2 --- that Baayen's proposal
of a special category level V^i for verb-particle combinations
in Dutch has the sole function of preventing his overlap ana-
lysis from incorrectly predicting that verb-particle combina-
tions will exhibit all the properties of both lexical and
syntactic constructs.

Thus, whereas Simpson's and Selkirk's analyses make incorrect
predictions about the properties of verb-particle combinations,
Baayen's analysis is prevented from making such incorrect pre-
dictions only by virtue of including a formal device which
has been argued to be ad hoc. An analysis which has to be
prevented from making incorrect predictions by the arbitrary .
use of ad hoc protective mechanisms is no less problematic
than an analysis which can be shown to have unwanted conse-
quences at an empirical level.

Once again it can be argued that the shortcoming in question,
viz. the incorrect predictions made by the analyses in ques-
tion (or the arbitrary protection of an analysis from the
potential impact of such incorrect predictions) is a mani-
festation of the problematic nature of the lexicalist con-
strual of the relationship between morphology and syntax. On
the one hand, it is their adoption of the Lexical Integrity
Hypothesis which forces Simpson and Selkirk to maintain that
verb-particle combinations are phrases, and Baayen to claim

that these combinations are generated in the syntactic com-
ponent of the grammar. On the other hand, their adoption of
the No Phrase Constraint and the Lexical Component Hypothesis
necessitates the claim that verb-particle combinations are
generated in the lexicon. And, as has been shown, unless ad
hoc protective mechanisms are invoked to prevent this from
happening, incorrect predictions about the properties of verb-
particle combinations are made by an analysis on which these
combinations are claimed to be lexical and syntactic constructs
simultaneously.

5.2.4   Conclusion

It has been shown that the lexicalist construal of the rela-
tionship between morphology and syntax as represented in (1)
dictates analyses of verb-particle combinations which exhi-
bit conceptual redundancies, require the use of ad hoc formal
devices, and are empirically inadequate. The shortcomings of
the analyses in question may therefore be taken to indicate
that this construal of the relationship between morphology
and syntax is problematic.

Note, in conclusion, that Simpson, Baayen, and Selkirk are
not unaware of the fact that an analysis of verb-particle
combinations which is compatible with both the Lexical Inte-
grity Hypothesis and the No Phrase Constraint has potential-
ly problematic empirical consequences. It is precisely in
an attempt to avoid such consequences that Baayen postulates
an ad hoc device such as the putative category level V^i.
Selkirk's postulation of a lexical redundancy rule to "relate"
lexically and syntactically generated verb-particle combina-
tions, too, indicates that she is fully aware of the empiri-
cal difficulties inherent in an analysis on which verb-
particle combinations are claimed to be lexical and syntactic
constructs simultaneously. Simpson acknowledges the exis-
tence of the problem, but fails to indicate how it may be
solved. What is remarkable, however, is that not one of them

considers a fairly obvious alternative solution to the pro-
blem of accounting for the properties of verb-particle com-
binations, viz. that of analyzing these combinations as
syntactically generated words. The reason for their failure
to do so, of course, is that an analysis on which verb-parti-
cle combinations are claimed to be syntactically generated
words is ruled out in principle as a possible analysis of
these (or any other) constructions by the Lexical Component
Hypothesis which states that all word formation takes place
in the lexicon.

It might turn out that an analysis based on the claim that
verb-particle combinations are syntactically generated words
is theoretically and empirically as unattractive as the lexi-
calist analyses discussed here. But this has to be demon-
strated first. The lexicalist construal of the relationship
between morphology and syntax has been shown to result in
analyses which, in addition to exhibiting conceptual redun-
dancies and necessitating the postulation of ad hoc formal
devices, are empirically inadequate as well. If the lexica-
list construal of the relationship between morphology and
syntax, moreover, entails that such analyses have to be pre-
ferred to possible alternative analyses on a priori, purely
formalistic grounds, this construal must be considered pro-
blematic.

5.3   Import of the shortcomings of nonlexicalist
analyses of verb-particle combinations

It has been argued in par. 5.2 that some of the shortcomings
of the lexicalist analyses of verb-particle combinations high-
lighted in chapter 3 indicate that the lexicalist construal
of the relationship between morphology and syntax, as out-
lined in chapter 1 and summarized in (1) above, is problema-
tic. It was suggested in par. 5.2.4 that an alternative,
nonlexicalist, approach to the problem of accounting for the
properties of verb-particle combinations appears at least to

merit consideration. In chapter 4 we did in fact consider
two analyses of verb-particle combinations which are not pre-
sented within the framework of an explicit lexicalist theory
of word formation, viz. those proposed by Van Riemsdijk and
Stowell.

Thus it was shown in par. 4.2.3 that Van Riemsdijk assumes,
amongst other things, that

(4)(a) syntactic rules have the power to analyze the
        internal structure of words; and

   (b) major syntactic constituents can appear within
        word structures generated by word formation
        rules.

Stowell was shown in par. 4.3.2 to argue for the postula-
tion of a class of word formation rules, so-called extended
word formation rules, which create (syntactic) words, i.e.
X^0 categories,

(5).(a) the constituents of which may be discontinuous
         at the level of syntactic D-structure;

    (b) the constituents of which are syntactically
         accessible insofar as they can be thematically
         linked to empty constituents in phrase struc-
         ture; and

    (c) the nonhead constituent of which may be a syn-
         tactic phrase.

It is clear that the assumptions (4a) and (5a, b) above are
incompatible with the strong version of the Lexical Integrity
Hypothesis as presented in (1a) above.[3] The assumptions (4b)
and (5c), moreover, are at odds with the claim expressed by
the No Phrase Constraint as formulated in (1b) above. And,
lastly, both Van Riemsdijk and Stowell were shown in chapter
4 to accept implicitly that word formation rules apply in a

separate, nonsyntactic, component of the grammar, although
neither of them explicitly commits himself to the position
that these rules form part of the lexicon. That is, they
do not explicitly accept the Lexical Component Hypothesis
as formulated in (1c) above.

Neither Van Riemsdijk's nor Stowell's analysis of verb-par-
ticle combinations can therefore be said to be couched within
the framework of an explicit lexicalist theory of morphology
of the kind accepted by Simpson, Baayen, and Selkirk. However,
both Van Riemsdijk and Stowell may be said to be "nonlexica-
list" morphologists by omission rather than by commission.
Specifically, both of them implicitly accept

(6)(a) that word structure is specified, not by rules
        of syntax, but by rules of word formation, and

   (b) that rules of syntax cannot change word struc-
        ture in any way.

In addition, Stowell has been shown to assume implicitly

(7)   that syntactic phrases cannot appear as consti-
        tuents of complex words created by ordinary
        rules of morphology.[4]

Their acceptance of these fundamental tenets of lexicalist
morphology, moreover, can be shown to be at the root of some
of the shortcomings of their respective analyses of verb-
particle combinations.

5.3.1   Van Riemsdijk's analysis

It will be argued that it is Van Riemsdijk's acceptance of
the tenets (6a) and (6b) which necessitates his postulation
of a dual structure analysis of verb-particle combinations
in Dutch entailing

(8)(a) the postulation of a unique kind of syntactic
        rule, the rule of P-shift, which has the power
        to move a syntactic constituent into a position
        within word structure;

    (b) the duplication of lexical entries to account
         for the similarities in meaning and subcatego-
         rization between verb-particle combinations
         that are analyzed as base-generated phrases and
         those that are created by the application of
         P-shift; and

    (c) incorrect predictions about the syntactic be-
         haviour of verb-particle combinations.

As regards (8a), it was shown in par. 4.2.3 above that Van
Riemsdijk explicitly rejects the possibility of formulating
P-shift as an adjunction rule. As a rule adjoining two con-
stituents of phrase structure, PP and V, P-shift would have
represented a nonunique kind of syntactic device. Such a rule
would have been analogous to, e.g., the rule adjoining a WH-
phrase to COMP. As a substitution rule, by contrast, P-shift
represents a unique kind of device, the mode of application
of which is unwarranted within the general theory of syntax
which Van Riemsdijk adopts --- see par. 4.2.2.1 above. It
may be asked why Van Riemsdijk chooses to postulate a unique
kind of substitution rule rather than an accepted kind of
device such as an adjunction rule. Van Riemsdijk provides
the answer himself (1978:107), pointing out that as an ad-
junction rule P-shift would have to be "allowed to build word
structures, a function normally reserved for word formation
rules". That is, Van Riemsdijk is forced by his acceptance
of an autonomous word formation component in the grammar to
formulate P-shift as an (objectionable kind of) substitution
rule rather than an (acceptable kind of) adjunction rule.

Turning to (8b), it was argued in par. 4.2.2.1 above that in
order to satisfy the Projection Principle Van Riemsdijk's
analysis would require every verb-particle combination that

displays idiosyncratic subcategorization properties to be
listed twice in the lexicon: once as a phrase and once as
a complex word. The redundant listing of verb-particle
combinations as both phrases and (complex) verbs is the
result of the fact that these constructions are generated
as phrases at the level of D-structure, but are (complex)
verbs at S-structure due to the application of P-shift.
Thus, whereas the D-structure of a sentence containing a
verb-particle combination has to satisfy the subcategoriza-
tion properties of a PP-V phrase, at S-structure it is the
identical subcategorization properties of a related complex
V that must be satisfied.

Clearly the problem lies with the dual structure assigned
to verb-particle combinations on Van Riemsdijk's analysis.
Why then does Van Riemsdijk find it necessary to postulate
an analysis on which verb-particle combinations are phrases
at D-structure but words at S-structure? As was argued in
par. 4.2.3 above, analyzing verb-particle combinations as
words (at some level of structure) provides Van Riemsdijk
with the only means of distinguishing between particles and
ordinary intransitive prepositions. In the absence of such
a distinction Van Riemsdijk's analysis could not account
for the differential behaviour of particles and ordinary
intransitive prepositions. Only by assigning verb-particle
combinations the structure of complex words at some level
of structure can Van Riemsdijk's analysis account for the
fact that, unlike ordinary intransitive prepositions, par-
ticles can be moved along with the verb by the rule of V-
raising and can be neither topicalized nor postposed.

The principle which dictates that verb-particle combinations
be analyzed as complex verbs to account for their syntactic
cohesiveness was shown in par. 4.2.3 to be the principle
that the constituents of syntactically complex words cannot
be separated by syntactic rule.[5] The latter principle, of
course, is a reflex of the weak version of the Lexical Inte-
grity Hypothesis which stipulates that syntactic rules are
not allowed to change word structure.

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Hence, Van Riemsdijk's (implicit) acceptance of a weak version of the Lexical Integrity Hypothesis, amongst other things, necessitates the assignment of a complex word structure to verb-particle combinations as a basis for explaining the syntactic cohesiveness of these constructions. However, the A-over-A Principle dictates that verb-particle combinations must be analyzed as phrases at the level of structure at which the rule of V-second applies, as was shown in par. 4.2.3 above. It must be concluded, then, that Van Riemsdijk's acceptance of (a weak version of) the Lexical Integrity Hypothesis is at least partly responsible for the fact that verb-particle combinations must be assigned a dual structure analysis by him. And, as was argued above, the redundant listing of verb-particle combinations both as (complex) verbs and as phrases in the lexicon is the direct result of these combinations being assigned a dual structure at the level of syntactic representation.

A third shortcoming of Van Riemsdijk's analysis, mentioned in (8c) above, is the fact that it was shown in par. 4.2.2.2 above to make incorrect predictions about the syntactic behaviour of verb-particle combinations in Dutch. Specifically, it is predicted that there will be a difference in syntactic behaviour between verb-particle combinations which are analyzed as phrases (i.e. before application of P-shift) and those that are analyzed as words after having undergone P-shift. These incorrect predictions too are the result of Van Riemsdijk's dual structure analysis of verb-particle combinations. As in the case of (8b), it may therefore be argued that this shortcoming of Van Riemsdijk's analysis must be attributed, at least partly, to his acceptance of a weak version of the Lexical Integrity Hypothesis.

5.3.2   Stowell's analysis

The major shortcomings of Stowell's analysis of verb-particle
combinations in English and Dutch, too, can be shown to be
the result of his acceptance of the lexicalist tenets (6a, b)
and (7) above. To see this, consider the following short-
comings of Stowell's analysis:

(9)(a)   The rules proposed to account for the formation
          of verb-particle combinations are claimed to be-
          long to a type of rule, so-called "extended word
          formation rules", the properties of and restric-
          tions on which are obscure.

   (b)   The analysis may form the basis of incorrect
          predictions about the syntactic behaviour of
          verb-particle combinations in English.

   (c)   The analysis necessitates special assumptions
          about the interaction between lexical insertion
          rules and principles of phrase structure in
          Dutch.

Consider, first, the shortcoming (9a). The central devices
proposed by Stowell to account for the properties of verb-
particle combinations in English and Dutch, viz. the rules
of NP Incorporation and Particle Incorporation, were shown
in par. 4.3.2.1 above to be problematic in that they are
claimed to belong to a special type of rule, so-called "ex-
tended word formation rules". Extended word formation rules,
according to Stowell, display properties both of syntactic
and of ordinary morphological rules, and yet have to be dis-
tinguished from either type of rule.[6]   In the absence of a
principled theory of extended word formation, it was argued,
the content of the claim "that X is an extended word forma-
tion rule" remains obscure.

Why, then, do the rules of NP Incorporation and Particle In-
corporation have to be assigned a special status: a status,

moreover, which is clearly problematic? At least part of
the answer to this question appears to be as follows. The
rules in question can be neither ordinary rules of syntax
nor ordinary rules of morphology because of Stowell's accep-
tance of the lexicalist tenets (6a, b) and (7). Thus, on
the one hand, the rules of Particle Incorporation and NP
Incorporation create syntactically complex words, i.e. con-
stituents of the category level X^0. As such these rules
display many of the properties which set word formation rules
apart from rules of syntax, as was shown in (42) in par.
4.3.2.1 above. Given Stowell's acceptance of (6a) above,
viz. that word structure is specified, not by rules of syn-
tax, but by rules of word formation, the rules in question
cannot be assumed to be syntactic. On the other hand, these
rules take syntactic phrases as their bases and create com-
plex structures which, amongst other things, may be discon-
tinuous at the level of D-structure, as was shown in (41)
in par. 4.3.2.1 above. Given Stowell's acceptance of the
version (6b) of the Lexical Integrity Hypothesis and the
version (7) of the No Phrase Constraint, the rules of NP
Incorporation and Particle Incorporation cannot be assumed
to be ordinary (morphological) word formation rules. Hence,
being forced by his acceptance of an essentially lexicalist
view of the relationship between morphology and syntax to
conclude that the rules of NP Incorporation and Particle In-
corporation can be neither rules of syntax nor ordinary
(morphological) word formation rules, Stowell's only option
is to propose that they belong to a special type of rule,
viz. extended word formation rules.

The shortcoming (9b) above was argued in par. 4.3.2.2 above
to be a consequence of Stowell's claim that discontinuous
verb-particle combinations too must be analyzed as complex
verbs derived by the application of NP Incorporation and
Particle Incorporation. The problem with such an analysis,
it was argued, is that it cannot be claimed to be obligatory.
Unlike the incorporation of NP in continuous verb-particle
constructions, which is required by the adjacency condition

on Case assignment, the incorporation of NP in discontinuous
verb-particle combinations is not conditioned by some inde-
pendent principle of grammar. In the case of discontinuous
verb-particle combinations, therefore, the rules of NP Incor-
poration and Particle Incorporation must be assumed to apply
optionally rather than obligatorily. However, if NP Incorpo-
ration and Particle Incorporation fail to apply, the relevant
discontinuous verb-particle combination will be assigned the
structure of an ordinary syntactic string. The corresponding
continuous combination, by contrast must obligatorily be as-
signed the structure of a complex verb. The fact that a dis-
continuous verb-particle combination may be assigned a phrasal
structure while the corresponding continuous combination is
assigned a complex word structure incorrectly predicts a dif-
ference in syntactic behaviour between discontinuous and con-
tinuous verb-particle combinations.

The question arises why Stowell proposes an analysis of dis-
continuous verb-particle combinations which both lacks the
kind of independent motivation that is available for the
analogous analysis of continuous verb-particle combinations,
and gives rise to incorrect predictions. The anwer to this
question is provided by Stowell himself. He (1981:302) notes
that an alternative analysis on which discontinuous verb-
particle constructions are derived from the corresponding
continuous constructions by means of a syntactic movement
rule is ruled out by the Lexical Integrity Hypothesis. Thus,
Stowell is forced by his acceptance of (a version of) the
Lexical Integrity Hypothesis to propose an analysis of dis-
continuous verb-particle combinations which has the short-
comings indicated above.[7]

And, lastly, the shortcoming (9c) may be argued also to be
a consequence of Stowell's acceptance of the principle (6b)
which represents a weak version of the Lexical Integrity
Hypothesis. It was shown in par. 4.3.2.3 above that an in-
corporation analysis of verb-particle combinations in Dutch
requires, amongst other things, that special assumptions be
made about the possible interaction of rules/principles of

lexical insertion with principles of phrase structure. Spe-
cifically, given that verb-particle combinations are claimed
to be complex verbs after Particle Incorporation has applied,
special provision has to be made to allow the constituents
of such verb-particle combinations to be inserted under dif-
ferent (and often nonadjacent) nodes in phrase structure.
An alternative analysis, which would account for the discon-
tinuity of the verb and the particle in phrase structure
without requiring that these special assumptions be made, is
ruled out by the Lexical Integrity Hypothesis. On the alter-
native analysis the discontinuity of the verb and the particle
would be the result of the application of a syntactic move-
ment rule. Such an analysis is ruled out by the Lexical Inte-
grity Hypothesis because the effect of the movement rule in-
volved would be to change the structure of a complex word.

5.3.3   Conclusion

It is clear from the preceding discussion that, although
neither Van Riemsdijk's nor Stowell's analysis of verb-par-
ticle combinations is presented within the framework of an
explicit lexicalist theory of word formation, some of the
major shortcomings of these analyses stem from the adoption
by Van Riemsdijk and Stowell of an essentially lexicalist
view of the relationship between morphology and syntax.
That they adopt such a view is indicated by their acceptance
of a version of the Lexical Component Hypothesis --- see
(6a) above --- and of the Lexical Integrity Hypothesis ---
see (6b) above --- and, in Stowell's case, of a version of
the No Phrase Constraint --- see (7) above. The fact that
some of the shortcomings of their analyses of verb-particle
combinations may be shown to be attributable to their accep-
tance of the principles in question therefore bears out the
conclusion reached in par. 5.2, viz. that the lexicalist concep-
tion of the relationship between morphology and syntax is
problematic in that it fails to provide an adequate framework

for the analysis of verb-particle combinations in English
and Dutch.

What remains now is to consider possible alternative
theories of the relationship between morphology and syntax
and to investigate the theoretical and empirical consequen-
ces of accepting one of these alternative theories as a
framework for the analysis of verb-particle combinations
in Afrikaans.

Chapter 6

A SYNTACTIC COMPOUND ANALYSIS OF VERB-PARTICLE COMBINATIONS IN AFRIKAANS

6.1   General

.This section will explore the possibility of accounting for
the properties of verb-particle combinations in Afrikaans
within the framework of an explicit nonlexicalist theory of
the relationship between morphology and syntax. First, in
par. 6.2, I shall briefly consider some possible alternatives
to the lexicalist construal of this relationship. The discus-
sion will focus on theories such as those proposed recently
by, e.g., Fabb (1984), Baker (1985), Sproat (1985, 1987), and
Lieber (1984, to appear). Then, in par. 6.3, one of these
alternatives, to which I shall refer as a <u>theory of syntac-
tic word formation</u>, will be considered in more detail. On
this alternative theory words are syntactic constructs. That
is, it is assumed that the (morpho)syntactic properties of
words must be accounted for in terms of types of rules and
constraints that are independently required to account for
the syntactic properties of phrases and sentences. A possi-
ble analysis of verb-particle combinations in Afrikaans con-
sistent with a theory of syntactic word formation will be
outlined. The theoretical and empirical consequences of the
analysis will be examined in some detail. The findings of
par. 6.3 will be used in par. 6.4 as a basis for the assess-
ment of the potential merits and shortcomings of a theory of
syntactic word formation as a framework for the description
of word structure in natural language.

Before proceeding with the discussion, it needs to be empha-
sized that the view that (a subset of) syntactically complex
words are syntactic constructs is by no means a new one within

generative grammar. On earlier versions of transformational
grammar, word formation processes were accounted for by means
of syntactic rules, more specifically syntactic transforma-
tions, and phonological rules.[1] It could be asked, then, in
what sense theories of word formation such as those propoun-
ded by Fabb, Baker, Sproat, and Lieber represent a new develop-
ment within generative grammar.

Lieber provides an answer to this question. She (1984:187)
points out first of all that lexicalist theories of word for-
mation arose in reaction to the treatment of word structure
within the Standard Theory of generative grammar. This treat-
ment required the postulation of extremely powerful transfor-
mations. Chomsky's (1970) proposal to handle the creation of
derived nominals in the base was aimed at limiting the power
of the transformational component of the grammar. The reduc-
tion of the power of transformations required, inter alia, the
postulation of a lexical component that included word forma-
tion rules. However, according to Lieber (1984:187),

> "syntax has progressed far beyond the Standard
> Theory that gave birth to the Lexicalist Hypo-
> thesis, which referred originally only to syn-
> tactic transformations. With the rise of syn-
> tactic theories like the Government-Binding
> theory, ... and with the generally more modular
> approach to syntax, transformations have grown
> far less important ... syntax now makes use of
> a variety of different rule types and principles
> which interact in fairly intricate ways. ...
> These developments alone suggest that it is time
> to take a new look at the Lexicalist Hypothesis."

Thus, grammatical theory now makes available types of rules
and constraints for the description of properties of phrase
structure that differ both in nature and mode of application
from those that were available at the time of the first formu-
lation of the lexicalist hypothesis. The question whether
formal properties of word structure can be adequately described
by the system of rules and principles that is required to ac-

count for the formal properties of phrase structure, is there-
fore a question well worth reconsidering.

6.2   Possible alternative construals of the relationship
between morphology and syntax

We have been concerned thus far with one particular construal
of the relationship between the morphological and syntactic
components of a grammar, viz. the lexicalist construal, the
main tenets of which were set out in chapter 1. An abstract
representation of the lexicalist construal of the relationship
between morphology and syntax is provided in (1). The repre-
sentation is abstract in the sense that it does not reflect
differences between individual lexicalist theories of morpho-
logy/word formation such as those referred to in chapter 1
above.

(1)
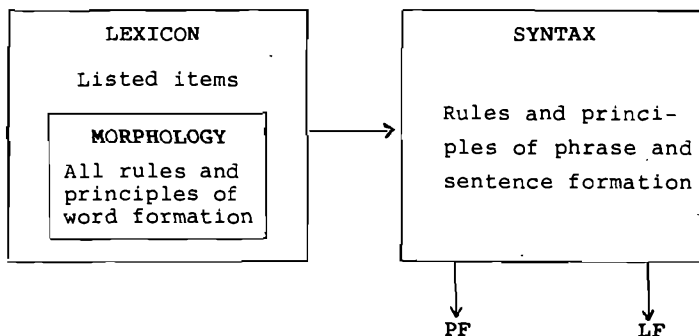
The claim expressed by the Lexical Component Hypothesis is
represented in (1) by the fact that the morphological compo-
nent, containing all word formation rules, forms part of the
lexicon. The No Phrase Constraint is represented by the
single-headed arrow connecting the lexicon and syntax, indi-
cating that there is no recursion from the syntax to the
word formation component of the grammar.[2] The Lexical Inte-

grity Hypothesis is not explicitly represented in (1). The
principle that syntactic rules are allowed neither to analyze
nor to change word structure does not follow logically from
the particular way of construing the relationship between mor-
phology and syntax represented in (1). There is a way in
which (1) could be made to explicitly represent the principle
of lexical integrity. Following a suggestion made by Di
Sciullo and Williams (1987:53), it could be assumed that lexi-
cal insertion, which on the theories represented in (1) is
the only point of contact between the lexicon and syntax,
takes place at the level of (syntactic) S-structure rather
than D-structure. It would then follow that the internal
structure of words can be neither changed nor analyzed by syn-
tactic rules and principles.[3] The latter assumption is expli-
citly made by none of the lexicalist morphologists who have
been shown in par. 1.2 to subscribe to a strong version of
the Lexical Integrity Hypothesis. Most of these morphologists
assume the principle of lexical integrity to follow from a
constraint on morpho(phono)logical rules known as the Bracket
Erasure Convention or the Morphological Island Constraint.[4]

A first alternative to the lexicalist construal of the rela-
tionship between morphology and syntax schematized in (1) can
be abstractly represented as follows:

(2)

.
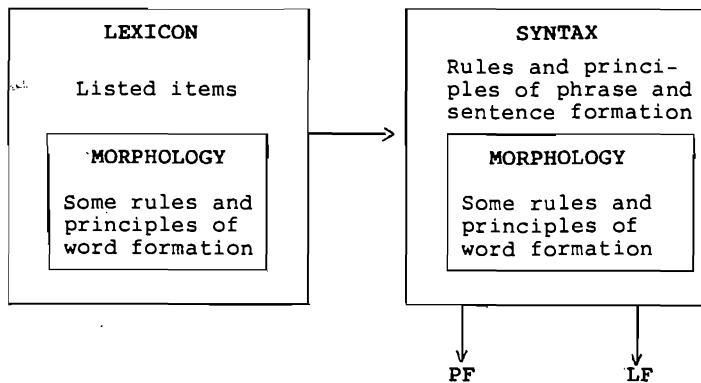
The schema (2) gives a highly oversimplified representation
of a number of rather diverse theories of the relationship
between morphology and syntax. Thus (2) represents, e.g., the
theory of this relationship accepted by those morphologists
who assume that inflection is performed in the syntax and not
in the lexicon.[5]   This schema is also intended to represent
the way in which the relationship between morphology and syn-
tax is construed by grammarians who have claimed that a
variety of other types of complex words such as, e.g., clitic
constructions, causative constructions, and prepositional pas-
sives are formed by rules of syntax --- see par. 1.2 above.
Notably, too, (2) represents the theories of the relationship
between morphology and syntax outlined recently by Fabb (1984)
and Baker (1985).[6]   Thus, Fabb (1984:38) contests the claim
that word formation takes place only in the lexicon and pro-
poses instead that

> "productive and regular word-formation processes
> are generally syntactic processes, while deriva-
> tions whose output must be listed take place in
> the lexicon."

He makes the following assumptions about the relationship
between morphology and syntax:

(3)(a) Whereas some word formation rules are lexical, other
word formation rules apply in the syntax. A word
formation rule is lexical if

   (i)   aspects of its output must be listed, or
  (ii)   its output can serve as input to lexical
      rules.

A word formation rule is syntactic if

   (i)   it is productive,
  (ii)   all properties of its output are predict-
      able,

(iii)   it can take syntactic constituents as its
        bases,

  (iv)   syntactic relations such as theta-indexing
        and Case-indexing hold between parts of the
        words formed by the rule.   (Fabb 1984:38-39).

(b)   The No Phrase Constraint applies only to lexical
      word formation rules.   (Fabb 1984:240)

(c)   Syntactic rules are allowed to analyze the internal
      structure of words formed in the syntax.[7]   (Fabb
      1984:240)

Baker's theory differs somewhat from that of Fabb.   On Fabb's
theory lexical and syntactic word formation are not only ac-
counted for in terms of two different sets of rules, but the
representations generated by these two sets of rules are also
subject to different sets of constraints.   Baker, by contrast,
develops the outlines of a theory of morphology   whose aim
it is to provide a definition of the notion 'possible word' ap-
plicable to words formed both in the lexicon and in the syntax.[8]
On Baker's theory the two kinds of words have exactly the same
status with regard to the theory of morphology, although they
are formed by different sets of rules and, hence, are subject
to different sets of nonmorphological principles.   Baker's
construal of the relationship between morphology and syntax
may be summarized as follows:

(4)(a)   Syntactically complex words may be formed either by
         lexical or by syntactic rules.   All syntactically
         complex words are subject to principles of word for-
         mation (i.e. his "morphology theory") that are no
         longer associated with any particular component of
         the grammar, but rather apply at all levels of re-
         presentation within the grammar.   (Baker 1985:82-83)

(b) Syntactic phrases may not appear inside a word,
     regardless of whether the word is formed in the
     lexicon or in the syntax, i.e. the No Phrase Con-
     straint forms part of the theory of morphology.
     (Baker 1985:87)

(c) Syntactic rules are allowed to analyze word struc-
     ture and to adjoin constituents to X^0 categories
     (i.e. words), but not to move a part of a word out
     of that word. (Baker 1985:88-89)

As is clear from the preceding discussion, the crucial diffe-
rence between the construals of the relationship between mor-
phology and syntax represented in (1) and (2) respectively
is that, on the latter but not on the former construal provi-
sion is made for some word formation to take place in the
syntax. Morphologists who accept a theory of word formation
compatible with (2) do not accept the Lexical Component Hypo-
thesis. Consequently, they must accept a weaker version of
the Lexical Integrity Hypothesis in order to allow syntactic
rules to at least analyze word structure. It also follows
from the construal of the relationship between the lexicon
and syntax represented in (2) that the No Phrase Constraint
will hold of lexical word formation. It is indeed assumed to
do so by, e.g., both Fabb and Baker. However, it does not
follow from the particular way in which the relationship
between syntax and morphology is construed on theories such
as those represented in (2) that the No Phrase Constraint will
apply to words formed in the syntax. Hence, Baker (1985:87),
who assumes that the constraint in question applies to words
formed in the syntax, does so on the grounds that "it is a
natural principle of morphology to block syntactic phrases
inside a word".

Acceptance of a theory of the relationship between morphology
and syntax such as that represented in (2) entails that syn-
tactic rules and principles must be assumed to participate in

word formation. It also entails, however, that a significant
subset of syntactically complex words must be assumed to be
formed by means of nonsyntactic rules and principles. That
is, the grammar must contain a set of rules and principles
other than those that apply in phrase and sentence formation
in order to account for the morphosyntactic properties of (a
subset of) syntactically complex words. A second alternative
to the lexicalist construal of the relationship between mor-
phology and syntax represented in (1) is one on which it is
assumed that the morphosyntactic properties of syntactically
complex words are accounted for solely by syntactic rules and
principles. On such a construal no provision is made for an
autonomous word formation component in the grammar. The lexi-
cal component, or lexicon, is assumed to be no more than a
repository of all the unpredictable information about a lan-
guage. That is, as is claimed by Sproat (1985:74), the lexi-
con is a (possibly structured) list in which morphemes, words,
and phrases are paired with a specification of their idiosyn-
cratic phonological, syntactic, and/or semantic properties.
The lexicon contains no word formation rules. This construal
of the relationship between morphology and syntax may be re-
presented as in (5).

(5)
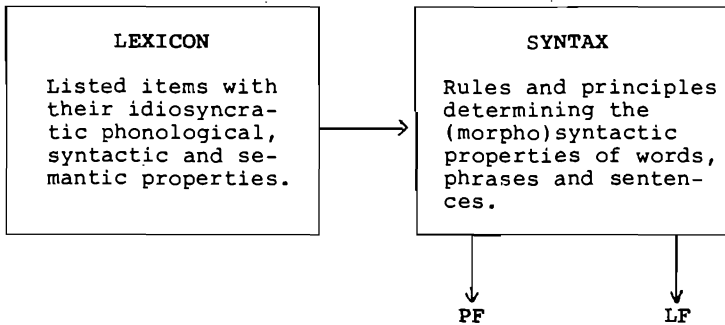
The schema (5) represents a construal of the relationship

between morphology and syntax such as that underlying what I shall refer to as theories of syntactic word formation.[9] Theories of syntactic word formation have been proposed recently by, e.g., Lieber (1984, to appear) and Sproat (1985, 1987).[10] Both Lieber and Sproat attempt to show that, with some modifications, general syntactic principles such as $\overline{X}$ theory, Case theory, theta theory, bounding theory, etc. can account for the morphosyntactic well-formedness of complex words. Similarly, Sproat argues that the phonological well-formedness of complex words can be accounted for by general principles of phonology.

Notice that the notion 'word' becomes theoretically insignificant given theories of syntactic word formation such as those abstractly represented in (5). On such theories, rules and principles of morphology are assumed to be indistinguishable from those of syntax. Word (i.e. X^0) structure is projected from the lexicon in exactly the same way as phrasal (i.e. $\overline{X}$) structure. The rule Move α can move X^0 categories, as it can move $\overline{X}$ categories, thus creating complex X^0 categories (i.e. words). Word structure, hence, is both part of phrase structure and subject to the same rules and constraints as phrase structure. Differences in properties between words and phrases are claimed by, e.g., Sproat (1985:ch. 3) and Lieber (1984, to appear) to be derivable from the fact that the constituents of words are nonmaximal projections. Nonmaximal projections are assumed by them to be treated differently from maximal projections by principles of syntax, phonology, and semantics. This assumption, then, serves as a basis for explaining properties such as anaphoric islandhood and structural cohesiveness, which are characteristic of words but not of phrases.

Lieber and Sproat's position with regard to the lexicalist tenets presented as (1a-c) in chapter 5 above may be summarized as follows:

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(6)(a)   The well-formedness of the morphosyntactic represen-
           tations assigned to words is determined by syntactic
           principles such as $\overline{X}$ theory, binding theory, Case
           theory, and theta theory. No special word formation
           component, in the sense of an independent theory of
           the morphosyntactic well-formedness of words, is re-
           quired in the grammar. (Sproat 1985:12; Lieber to
           appear:3)

    (b)   The No Phrase Constraint either does not hold (Lie-
           ber to appear:14-16) or, in those cases that it does
           hold, it follows from general principles such as,
           e.g., principles of theta assignment.(Sproat 1985:
           202ff) [11]

    (c)   The Lexical Integrity Hypothesis too follows from
           principles that are independently required in the
           grammar. (Lieber 1984:195-197; Sproat 1987:194)[12]

The analysis of verb-particle combinations in Afrikaans to be
outlined in the remainder of this chapter will assume a theory
of the relationship between morphology and syntax such as that
represented in (5) above, i.e. a general theory of syntactic
word formation. The latter alternative to lexicalist theories
of this relationship such as those represented in (1) imposes
a stronger requirement on analyses of word structure than does
the alternative represented in (2). Thus, a general theory of
syntactic word formation requires that the morphosyntactic pro-
perties of complex words be accounted for in terms of types of
rules and constraints that are independently needed in the
grammar to account for the syntactic properties of phrases and
sentences. The aim of the discussion in the following para-
graph will be to establish to what extent this requirement can
be met by a syntactic analysis of Afrikaans verb-particle com-
binations that satisfies the criteria of descriptive and expla-
natory adequacy.

6.3   Outline of a syntactic compound analysis of verb-particle combinations in Afrikaans

In this paragraph I shall present the outline of a possible
analysis of verb-particle combinations in Afrikaans consis-
tent with a theory of syntactic word formation, i.e. a theory
on which the relationship between morphology and syntax is
construed as shown schematically in (5) above. In particular,
the general theoretical framework proposed by Lieber (to ap-
pear) for the analysis of phrasal compounds in English will
be taken as a point of departure. Her proposal contains the
most explicit statement to date of the kinds of modifications
that must be made to the general theory of phrase·structure
if it is to be able to account for word structure as well.
The analysis will also draw heavily on proposals made by Fabb
(1984), Baker (1985), and Sproat (1985, 1987) concerning the
way in which syntactic rules and constraints may be used to
account for properties of complex words.

The discussion will proceed as follows. The central hypothe-
ses of the analysis will be presented in par. 6.3.1. In par.
6.3.2 the formal devices that have been proposed by Lieber
(to appear) to express claims such as those presented in par.
6.3.1 will be considered critically. Par. 6.3.3 will ad-
dress the question of how the characteristic cluster of pro-
perties of Afrikaans verb-particle combinations discussed in
chapter 2 may be accounted for on the basis of an analysis
such as that outlined in the preceding paragraphs. Some
empirical consequences of the analysis will be considered in
par. 6.3.4.   Par. 6.3.5 will summarize the main findings of
this section.

Before proceeding it has to be emphasized that the discussion
will be exploratory in nature and therefore tentative. The
aim is not to present a convincing argument in support of the
account of verb-particle combinations to be outlined. The aim
is rather to explore the possible consequences of providing

such an account within the framework of a theory of syntac-
tic word formation. The ultimate objective is to assess the
potential merits and shortcomings of a theory of syntactic
word formation as a framework for the description of word
structure. Problematic aspects of the analysis and poten-
tial limitations of a theory of syntactic word formation
will be identified and suggestions will be made as to direc-
tions in which solutions may be sought. The working out of
the details of these solutions, however, falls outside the
scope of this study.

6.3.1   Claims

This discussion will be concerned with Afrikaans verb-parti-
cle combinations such as those illustrated in chapter 2. A
few representative examples are provided in (7).

(7)   *af   + kyk*   *op + gooi*
       off   look   up   throw
       'to crib/copy'   'to vomit'

       deur   + bring   *oor + skiet*
       through bring   over shoot
       'to squander (money)'   'to be left over'

       in + loop   *uit + vaar*
       in   walk   out   fare/sail
       'to cheat'   'to rail (at)'

       by + kom   *onder + sit*
       at   come   under   put
       'to (re)gain consciousness'   'to overpower/subdue'

       voor + hou   *om + gee*
       before hold   for give
       'to present'   'to care'

Given our interest in exploring the possible consequences of
using a theory of syntactic word formation as a framework for
the analysis of word structure, the hypotheses in (8) will be
accepted as working hypotheses.

(8)(a) Afrikaans verb-particle combinations such as those
        shown in (7) are compound verbs.

   (b) Compound verbs such as those in (7) are syntactic
        constructs, the morphosyntactic properties of
        which are determined by syntactic rules and con-
        straints.

Consider first the empirical motivation for the hypothesis
(8a), viz. that Afrikaans verb-particle combinations are com-
pound verbs.[13]   Recall that it was shown in par. 2.7 above
that verb-particle combinations differ from phrasal PP-V
strings in that the former but not the latter combinations
behave like single verbs with regard to a variety of syntac-
tic rules in Afrikaans. First, the rule of V-raising, which
moves the verb of an embedded sentence to the final position
in the matrix sentence, treats the verb-particle combination
as a single constituent as shown in (9).[14]   Thus, the (i)-
sentences, in which the verb and the particle have been sepa-
rated by the application of V-raising, are unacceptable in
Afrikaans. By contrast, the (ii)-sentences, in which both
the verb and the particle have been moved to the "raised"
position, are acceptable.

(9)(a) i. *Hy sal   nie [die antwoorde by   my af e] kan kyk
            he will not the answers   from me off   can look
            nie.
            not
            'He will not be able to crib from me.'

       ii. Hy sal   nie [die antwoorde by my e] kan af +
            he will not the answers from me   can off
            kyk   nie.
            look not

(b) i. *Hy wil [sy pa   as 'n kenner <u>voor</u> e] kom
       he wants his father as an expert before   come

       <u>hou</u>.
       hold
       'He wants to come and pretend that his father is
       an expert.'

   ii. Hy wil [sy pa   as 'n kenner   e] kom
       he wants his father as an expert   come

       <u>voor</u> + <u>hou</u>.
       before hold

Significantly, too, the syntactic behaviour of verb-particle
combinations such as those exemplified above differs from that
of homophonous strings consisting of an intransitive preposi-
tion and a verb. Thus, corresponding to the unacceptable
(i)-sentences in (9) above, we have (10a) and (10b), which
are acceptable despite the fact that af and voor are separated
from the verbs sien and hou respectively after application of
V-raising.

(10)(a) Sal 'n mens [van daar bo <u>af</u> e] kan <u>kyk</u>?
       will a person from there up down   can look
       'Will one be able to look down from up there?'

   (b) Jy sal [iets .. <u>voor</u> e] moet <u>hou</u> om jou klere
       you will something before   must hold for your clothes

       te beskerm.
       to protect
       'You will have to hold something in front to protect
       your clothes.'

Second, in the progressive construction the verb and the par-
ticle both appear after aan die/'t ('on the', as in on the move
in English). Only the bare infinitival form of a verb can
appear in this position in Afrikaans. Thus, the (i)-sentences

in (11·), in which the particle and the verb are separated by
aan die/'t are unacceptable. By contrast, the (ii)-sentences,
in which the particle and the verb both appear in the posi-
tion following *aan die/'t,* are acceptable.[15]

(11)(a) i. **Jan is al sy geld <u>deur</u>   aan die/'t <u>bring</u>.*
             John is all his money through PROGRESSIVE bring
             'John is squandering all his money.'

      ii. *Jan is al sy geld aan die/'t <u>deur</u> + <u>bring</u>.*
             John is all his money PROGRESSIVE through bring

   (b) i. **Dit lyk   asof sy uiteindelik <u>by</u> aan die/'t*
             it   looks as if she   at last   at PROGRESSIVE

             <u>kom</u> is.
             come is
             'It looks as if she is regaining consciousness
             at last.'

      ii. *Dit lyk   asof sy uiteindelik aan die/'t*
             it   looks as if she   at last   PROGRESSIVE

             <u>by</u> + <u>kom</u> is.
             at   come is

By contrast, corresponding to the unacceptable (i)-sentences
in (11), we have the acceptable sentences (12a, b). The sen-
tences in (12) are acceptable despite the fact that *deur* and
by are separated by *aan't* from the verbs *bring* and *kom* respec-
tively. *Deur* and *by* in (12) are intransitive prepositions.

(12)(a) *Sy is op hierdie oomblik besoekers <u>deur</u>   aan't*
             she is at this   moment visitors through PROGRESSIVE

             <u>bring</u> van Kaapstad   af.
             bring from Cape Town off
             'She is at this very moment bringing through visitors
             from Cape Town.'

(b) *Daar was steeds   meer mense by aan't*
     there were all the time more people at PROGRESSIVE

     kom.
     come
     'More people were joining (in) all the time.'

Third, the rule of Gapping too treats a verb-particle combina-
tion as a single constituent, as illustrated in (13).[16] Both
sentence (13aii) and sentence (13bii), in which a constituent
of the verb-particle combination occurring in the correspond-
ing (i)-sentence has been deleted, are unacceptable to speak-
ers of Afrikaans.

(13)(a) i. *Sy gooi haar middagete weg en Karel gooi*
             she throws her lunch   away and Charles throws

             syne op.
             his up
             'She throws her lunch away and Charles throws
             his up.'

     ii. **Sy gooi haar middagete weg en Karel ____*
             she throws her lunch   away and Charles

             syne op.
             his up

  (b) i. *Jan loop die strate plat en Piet loop sy*
             John walks the streets flat and Peter walks his

             klante   in.
             customers in
             'John roams the streets and Peter cheats his cus-
             tomers.'

     ii. **Jan loop die strate plat en Piet ____ sy*
             John walks the streets flat and Peter   his

             klante   in.
             customers in

In contrast to the verb-particle combinations *onder + sit* and
in + loop in (13), the homophonous PP-V strings in (14) allow
gapping, as indicated by the acceptability of the (ii)-senten-
ces in (14) below.

(14)(a) i. *Die   wat bo   sit, gooi lemoenskille af*
           those who above sit throw orange peels down

           en die   wat onder sit, gooi bierblikke op.
           and those who below sit throw beer cans up
           'Those sitting above throw orange peels down
           and those sitting below throw beer cans up.'

       ii. *Die   wat bo · sit, gooi lemoenskille   af*
           those who above sit throw orange peels   down

           en die   wat onder sit, ____ bierblikke op.
           and those who below sit   beer cans   up

   (b) i. *Sommiges loop by   die kerk   uit en   ander*
           some   walk from the church out and others

           loop by die kroeg in.
           walk at the pub   in
           'Some are leaving the church and others are ente-
           ring the pub.'

       ii. *Sommiges loop by   die kerk   uit en   ander*
           some   walk from the church out and others

           ____ by die kroeg in.
                 at the pub   in

Fourth, rules such as PP-preposing and PP-over-V cannot apply
to the particle constituent of a verb-particle combination,
as shown in (15a, b) and (15c, d) respectively.[17]   The parti-
cle has been preposed/topicalized in the (ii)-sentences in
(15a, b) and postposed in the (ii)-sentences in (15c, d). All
these sentences are unacceptable in Afrikaans.

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(15)(a) i. *Jy sal hom nie maklik <u>onder</u> + <u>sit</u> nie.*
                you will him not easily under   put not
                'You will not overpower/subdue him easily.'

       ii. **<u>Onder</u> sal jy hom nie maklik <u>sit</u> nie.*
                under will you him not easily put not

   (b) i. *Hy <u>vaar</u> te dikwels teen   die hele wêreld <u>uit</u>.*
                he fares too often   against the whole world out
                'He rails at the whole world too often.'

       ii. **<u>Uit</u> <u>vaar</u> hy te dikwels teen   die hele wêreld.*
                out fares he too often   against the whole world

   (c) i. *dat jy hom nie maklik sal   <u>onder</u> + <u>sit</u> nie*
                that you him not easily will under   put not
                'that you will not overpower/subdue him easily '

       ii. **dat jy hom nie maklik sal   <u>sit</u> <u>onder</u> nie*
                that you him not easily will put under not

   (d) i. *dat hy te dikwels teen   die hele wêreld*
                that he too often   against the whole world

            <u>uit</u> + <u>vaar</u>
            out   fares
            'that he rails at the whole world too often '

       ii. **dat hy te dikwels teen   die hele wêreld*
                that he too often   against the whole world

            <u>vaar</u> <u>uit</u>
            fares out

That the homophonous intransitive prepositions *onder* and *uit*
can be both preposed/topicalized and postposed is clear from
the acceptability of the (ii)-sentences in (16a, b) and (16c,
d) respectively.

(16)(a) i. *Ek wil   gewoonlik   nie <u>onder</u> <u>sit</u> nie.*
             I   want usually   not below sit not
             'I usually don't want to sit below.'

     ii. <u>*Onder*</u> *wil   ek gewoonlik nie <u>sit</u> nie.*
          below   want I   usually   not sit not

  (b) i. *Die bote <u>vaar</u> almal in 'n rekordtyd <u>uit</u>.*
          the boats sail all   in a record time out
          'The boats all set record times sailing out.'

     ii. <u>*Uit*</u> *vaar die bote almal in 'n rekordtyd.*
          out sail the boats all   in a record time

  (c) i. *dat ek gewoonlik geriefliker   <u>onder</u>   <u>sit</u>*
          that I usually   more comfortable below   sit
          'that I am usually more comfortable sitting below '

     ii. *dat ek gewoonlik geriefliker   <u>sit</u> <u>onder</u>*
          that I usually   more comfortable sit below

  (d) i. *dat die bote almal in 'n rekordtyd <u>uit</u> <u>vaar</u>*
          that the boats all   in a record time out sail
          'that the boats all set record times sailing out '

     ii. *dat die bote almal in 'n rekordtyd   <u>vaar</u> <u>uit</u>*
          that the boats all   in a record time sail out

          (maar nie terug nie)
          (but not back not)

And, finally, adverbial modifiers have scope over the verb-
particle combination as a whole rather than over the particle
alone.[18]   Thus, both (17a) and (17b), in which the particles
oor and *om* are modified by the adverb *heeltemal*, are unaccept-
able.

(17)(a) **Die slaaie <u>skiet</u>   <u>heeltemal</u> oor.*
          the salads shoot (= are left)   co
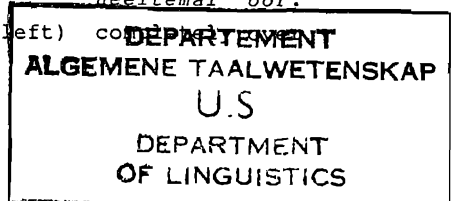
(b) *Sy _gee_   heeltemal _om_ vir ander mense.
     she gives (= cares) completely for for other people

In this respect too the behaviour of the verb-particle combi-
nations differs from that of homophonous PP-V strings. Thus,
(18a) and (18b) containing the adverbially modified intransi-
tive prepositions _oor_ and _om_ respectively are acceptable in
Afrikaans.

(18)(a) _My klippie skiet gewoonlik heeltemal_   _oor._
         my pebble shoots usually completely over
         'My pebble usually completely overshoots (the mark).'

   (b) _Hulle gee die bal heeltemal_   _om._
        they give the ball completely around
        'They pass the ball all the way round.'

An analysis on which verb-particle combinations are claimed
to be compound verbs can explain the difference in syntactic
behaviour between these combinations and homophonous strings
consisting of an intransitive preposition (or adverb) and a
verb. On such an analysis, the difference in behaviour can
be explained on the basis of a structural difference between
a phrasal PP-V string and a P-V string constituting a com-
pound verb.

At this junction a terminological point needs to be clarified.
Up to now the term "verb-particle combination" has been used
pretheoretically to denote all combinations, or sequences,
consisting of a preposition (or adverb) and a verb. However,
a theoretical distinction is now being made between two classes
of "verb-particle combinations", viz. those that are analyzed
as phrasal PP-V sequences and those that are analyzed as com-
pound verbs. Therefore, the term "verb-particle combination"
will henceforth be taken to refer only to the latter class of
constructs, i.e. to members of the class of compound verbs con-

sisting of a preposition and a verb. Phrasal combinations
consisting of an intransitive preposition (or adverb) and a
verb will be termed PP-V strings.

Having presented some empirical evidence for the claim (8a),
viz. that verb-particle combinations are compound verbs in
Afrikaans,[19] let us turn now to the claim (8b), viz. that
these compound verbs are syntactic constructs, the morpho-
syntactic properties of which must be determined by syntactic
rules and constraints. The claim (8b) could be argued to be
well-founded only if it could be shown that the morphosyntac-
tic properties of verb-particle combinations in Afrikaans
can in fact be accounted for by independently motivated syn-
tactic rules and constraints. It is with the question of the
well-foundedness of the latter claim that the discussion in
the following paragraphs will be concerned.

6.3.2 Formal devices

This paragraph will be concerned with the question of the ade-
quacy of formal devices that have been proposed within the
framework of a theory of syntactic word formation to account
for the structural properties of complex words. Recall that,
by the hypothesis (8a), verb-particle combinations in Afri-
kaans must be assigned a compound verb structure. That is,
they must be assigned the morphosyntactic representation (19).

(19)

$$
\begin{array}{c}
V^0 \\
\diagup \quad \diagdown \\
P^0 \qquad V^0
\end{array}
$$
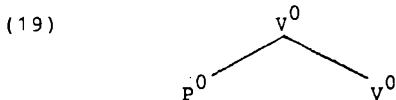
By the hypothesis (8b), the well-formedness of a morphosyntac-
tic representation such as (19) must be determined by syntac-
tic rules and constraints. Lieber (to appear : 8) and Fabb

(1984:256) have argued that formal devices made available by
the $\overline{X}$ theory of phrase structure, with certain modifications,
can be used to account for the well-formedness of structures
such as (19), i.e. word structures, as well.[20]   In what fol-
lows, I shall consider Lieber's proposal, which is the more
detailed of the two.

Lieber (to appear) argues that the required distinction
between possible and impossible compound structures in Eng-
lish can be made by general $\overline{X}$ principles of phrase structure,
if certain modifications are made to these principles and if
certain language-specific assumptions are made concerning the
setting of parameters associated with these principles. I
shall briefly outline the details of her proposal, indicating,
where relevant, what additional assumptions would have to be
made in order to extend the proposal to an analysis of word
structure in Afrikaans. Following this, I shall broach the
important question of whether the proposed modifications to
generally accepted principles of phrase structure could be
argued to be well-founded, hence non-ad hoc.

According to Lieber (to appear:8), a first modification that
has to be made to the $\overline{X}$ theory of phrase structure to account
for the well-formedness of word structure concerns the rewrite
rule for X^n. This rule, which on $\overline{X}$ theory is assumed to be
$X^n \longrightarrow \ldots X^{n-1} \ldots$, needs to be modified as follows:

(20) $X^n \longrightarrow \ldots X^{\begin{Bmatrix} n-1 \\ n \end{Bmatrix}} \ldots$

The rule (20) is claimed to be able to account for the well-
formedness of morphosyntactic representations such as (19)
in which the head is of the same bar level as its mother.

The rewrite rule (20), however, has nothing to say about the
category level of the nonhead constituent in a structure such
as (19).   Nonhead constituents in phrase structure are gene-
rally assumed to be maximal projections. The nonhead consti-
tuent in typical compound structures such as (19) is not a

maximal projection, however.[21]   This fact too has to be ac-
counted for somehow. Lieber (to appear:8) proposes that the
principle (21) be assumed in addition to the rewrite rule (20).

(21)   Pre- and post-head constituents can contain
        Y^{max} or Y^0.

In terms of the principle (21) nonhead constituents may be
either maximal projections, as is the case in phrases (and
phrasal compounds) , or 0-level categories, as is the case in
compound structures such as (19).

A last property of the structure (19) that needs to be accoun-
ted for is the fact that it is right-headed. The characteris-
tic position of the head in the phrases of a given language
is assumed to be determined by the setting of a parameter
associated with the principles of $\overline{X}$ theory: heads may be
either $\overline{X}$-initial or $\overline{X}$-final. In order to make provision for
the fact that in English phrasal structure is left-headed
while X^0 structure is characteristically right-headed, Lieber
(to appear:8-9) proposes that the usual head-initial/head-
final parameter be replaced by the following set of parameters
(the settings assumed by Lieber for English are underlined):

(22)(a) All and only complements are final/initial.

    (b) All specifiers and modifiers precede/follow the
         head.

Note that the term "head" in (22) refers both to the head of
a phrase, i.e. a constituent of $\overline{X}$, and the head of a complex
word, i.e. a constituent of X^0. The setting, i.e. fixing of
the value, of the parameters indicated in (22) expresses the
claim that in English the head of a phrase is always the left-
most constituent of $\overline{X}$. Complements, which must be sisters to
the head, follow the head in $\overline{X}$ by (22a). Specifiers and modi-

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fiers, which must precede the head by (22b), cannot be con-
stituents of $\overline{X}$, as X must be the leftmost constituent in $\overline{X}$.
That is, (23a) is predicted to be a well-formed phrase struc-
ture in English, with X the head, $\overline{\overline{Y}}$ a specifier/modifier of
X and $\overline{\overline{Z}}$ a complement of X. By contrast (23b), in which a
complement $\overline{\overline{Z}}$ precedes the head X in violation of (22a), and
a specifier/modifier $\overline{\overline{Y}}$ follows the head X in violation of
(22b), is predicted to be ill-formed.

(23)(a)
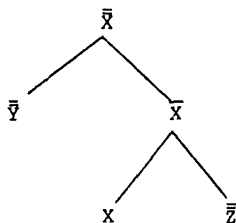
(b)
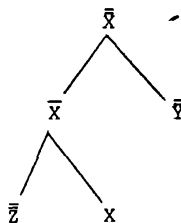
According to Lieber (to appear: 10-14), the parameter set-
tings shown in (22), together with the rule (20) and the
principle (21), also correctly predict the right-headed struc-
tures (24a, b), but not the left-headed structures (24c, d),
to be possible expansions of X^0 in English.
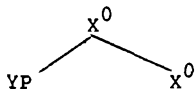
(24)(a)   (b)
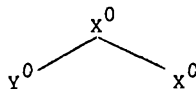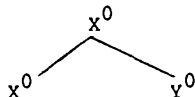
(c)   (d)
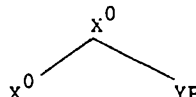
Given the parameter settings shown in (22), together with the
rule (20) and the principle (21) above, (24a) is predicted to
be possible in English with YP a specifier or modifier of some
sort. This prediction is correct according to Lieber (to ap-

pear:9). Structure (24a) is the structure of phrasal com-
pounds in English. Structure (24b) is predicted to be pos-
sible as well. This is in fact the structure associated with
the majority of compounds and affixed words in English. In
order to rule out structure (24c), another principle must be
added to the principles of phrase structure assumed so far,
according to Lieber (to appear:13). This principle she (to
appear:8) formulates as follows:

(25)   All complements are Y^{max}, but not all Y^{max}
         are complements.

Given that only complements can follow heads in English by
the parameter (22a), Y^0 must be a complement in (24c). But
then (24c) violates (25) and is therefore ruled out as a pos-
sible word structure of English.[22]   Structure (24d) is ruled
out on the assumption that complements must receive Case mark-
ing and that Case may be assigned only within a nonminimal
phrase according to Lieber (to appear:13). YP in (24d) must
be a complement by (22a), but cannot be assigned Case within
X^0. Thus, (24d) is predicted not to be a possible word
structure in English. Lieber claims that these predictions
are indeed correct. Complex words with the structure (24d)
are not attested and complex words with the structure (24c)
cannot be formed productively in English. Hence, she argues,
the characteristic right-headedness of word structure in
English could be made to follow from a set of principles and
parameters that can also account for the fact that $\overline{X}$ struc-
tures in the same language are characteristically left-headed.

Thus, Lieber claims to be able to account for the morphosyn-
tactic well-formedness of word structure in English in terms
of a set of rules, principles and parameters which, according
to her (to appear:9), "are reasonable and independently neces-
sary with respect to the syntax". Before addressing the
question of the well-foundedness of Lieber's claim, let us
briefly consider how the modified rules, principles, etc. of

$\overline{X}$ theory proposed by her could be argued to account for the morphosyntactic well-formedness of compound structures such as (19), the structure assigned to verb-particle combinations in Afrikaans.

The rule (20), the principles (21) and (25), and the para-meters (22a) and (22b) are all assumed by Lieber (to appear: 8-9) to be language-independent. They could therefore be taken to make the same predictions about possible word (and phrase) structures in Afrikaans as in English. The settings, or values, assumed by Lieber for the parameters in (22), how-ever, are claimed to be language-specific and therefore not necessarily the same for Afrikaans and English. Let us there-fore consider the question of how the parameters (22a, b) would have to be set in order for correct predictions to be made about both possible phrase structures and possible word structures in Afrikaans.

Afrikaans phrase structure differs from that of English with respect to the position of complements. Recall that it was shown in par. 2.2 above that Afrikaans exhibits SOV word order in subordinate clauses and SVO order in main clauses, as illustrated in (26):

(26)(a)   *Die kinders eet hulle middagete.*
          the children eat their   lunch
          'The children eat their lunch.'

   (b)   *dat die kinders   hulle middagete eet*
          that the children their   lunch   eat

Moreover, Afrikaans has both prepositions and postpositions, as illustrated in (27).

(27)(a)   *Hy klim   [in die bed]*$_{PP}$
          he climbs   in the bed
          'He gets into bed.'

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(b) *Òns beweeg [die toekoms <u>in</u>]*$_{PP}$.
     we   move   the future   in
     'We are moving into the future.'

(c) *Hulle sukkel   [<u>teen</u>   die bult <u>af</u>]*$_{PP}$.
     they struggle against the hill down
     'They are struggling down the hill.'

Complements of nouns and adjectives, by contrast, follow their
heads in Afrikaans as in English, as illustrated in (28a) for
NP and in (28b) for AP.

(28)(a) *[Die <u>uitslag</u> van die verkiesing]*$_{NP}$ *het almal*
        the result of the election   has everybody

        verbaas.
        surprized
        'The result of the election surprized everybody.'

   (b) *Hy is [baie <u>trots</u> op sy seun]*$_{AP}$.
        he is very proud of his son
        'He is very proud of his son.'

It is clear from the examples given in (26)-(28) that the
order of complements in Afrikaans phrase structure cannot be
determined simply by choosing a setting for the parameter
(22a). A distinction would have to be made between, on the
one hand, NP and AP, which are head-initial (i.e. comple-
ments follow the head) and, on the other hand, VP and PP,
which can be either head-initial or head-final (i.e. comple-
ments either precede or follow the head).[23] There could be
argued to be at least two ways of approaching the problem of
drawing the required distinction. The first would be to as-
sume that different parameter settings must be stated for NP
and AP on the one hand, and for PP and VP on the other hand.
A potential problem with this approach is that it would en-
tail that a parameter of phrase structure must refer to spe-
cific categories. This would be an undesirable consequence,

given Stowell's (1981) proposal that principles of phrase
structure should be formulated in category-neutral terms, a
proposal that has been widely accepted by GB theorists.

The second approach would be to assume that the position of
complements vis à vis that of heads in phrase structure is
not the result of the fixing of an independent parameter such
as (22a), but that it is the result of the fixing of values
for parameters associated with other subtheories of the gram-
mar such as, e.g., Case theory and theta theory. The latter
approach is in fact suggested by, e.g., Travis (unpubl.:
16 n. 9) --- see also the discussion in (Van Riemsdijk and
Williams 1986:321). Such an approach would seem promising,
given that the distinction that has to be made in Afrikaans
is between NP and AP, i.e. [+ N] or non-Case assigning cate-
gories, on the one hand, and PP and VP, i.e. [- N] or Case-
assigning categories on the other hand. As the working out
of the details of the latter approach falls outside the scope
of this study, however, I shall do no more than note this
possibility here.

Let us therefore consider the consequences of taking the
first approach, disregarding for the moment the fact that it
is potentially problematic, as noted above. As shown in (28)
above, complements of N and A follow their heads in Afrikaans
as in English. The setting of the parameter (22a) for Eng-
lish could therefore be argued to apply in the case of NP and
AP in Afrikaans as well. It is less clear how the parameter
should be set to account for the fact that complements can
either precede or follow the head in the case of VP and PP in
Afrikaans. It could be argued that in the case of VP and PP
there is no fixed value for the parameter (22a) in Afrikaans.
The absence of a fixed value for this parameter would express
the claim that in the case of VP and PP no canonical ordering
of the head and complements can be stated in Afrikaans. The
position of complements vis à vis the head V or P would then
have to be assumed to be determined by a complex of factors,
including, e.g., the settings assumed for parameters such as

those determining the direction of Case-assignment and theta
role assignment, and whatever structural properties are re-
sponsible for the V-second phenomenon. As noted above, the
details of how this could be achieved are currently being
investigated by various GB theorists.

Given these provisos, let us assume that Afrikaans has the
following settings for the parameters proposed by Lieber:

(29)(a)   All and only complements are final/initial:
      i.   [+ N] (i.e. N^n and A^n) =   final.
      ii.   [- N] (i.e. V^n and P^n) =   no setting.

   (b)   All specifiers and modifiers <u>precede</u>/follow
      the head.

Note that underlying (29b) is the assumption that specifiers
and modifiers occupy the same position in Afrikaans as in
English. Given the absence of studies on the specifier sys-
tem of Afrikaans, this assumption is based solely on observed
similarities between Afrikaans and English as regards the
position of specifiers, as shown in (30).

(30)(a)   NP :
      $[John's]_{SPEC}$ $[book]_{\overline{N}}$
      $[Jan\ se]_{SPEC}$ $[boek]_{\overline{N}}$

   (b)   AP :
      $[so]_{SPEC}$ $[beautiful]_{\overline{A}}$
      $[so]_{SPEC}$ $[mooi]_{\overline{A}}$

   (c)   PP :
      $[right]_{SPEC}$ $[into\ the\ quagmire]_{\overline{P}}$
      $[reg]_{SPEC}$ $[in\ die\ moeras\ in]_{\overline{P}}$

(d)   VP :

he [[usually]$_{SPEC}$ [drinks wine]$_{\overline{V}}$]$_{\overline{\overline{V}}}$

(dat) hy [[gewoonlik]$_{SPEC}$ [wyn drink]$_{\overline{V}}$]$_{\overline{\overline{V}}}$

that   he   usually   wine drinks[24]

Now, let us assume for the moment that Lieber's proposed modifi-
cations to the $\overline{X}$ theory of phrase structure and the para-
meter settings assumed for Afrikaans above could be shown to
be well-founded. (This will be argued not be the case below.)
Despite the difference in the parameter settings assumed for
Afrikaans and English, exactly the same expansions of X^0 would
be predicted to. be possible in Afrikaans as in English. By
the rule (20) and the principle (21) all the structures in
(24) would be generated for Afrikaans. The structures (24a)
and (24b) would be ruled well-formed with Y^0/YP assigned the
status of modifier. Y^0 and YP cannot be complements in
(24a, b) for the following reasons: (i) if X was N or A,
both (24a) and (24b) would violate (29a i) which stipulates
that complements must follow the head, and (ii) if X was V
or P, (24b) would be ruled out. by (25) which states that com-
plements must be maximal projections and (24a) would be ruled
out on the assumption that complements must receive Case and
Case may be assigned only within a nonminimal phrasal projec-
tion. Thus, the structure (24a) could be argued to be the
structure assigned to phrasal compounds such as
[[Charles-en-Di]$_{NP}$.[sindroom]$_N$]$_N$ ('Charles-and-Di syndrome')
and [[God-is-dood]$_{\overline{S}}$[teologie]$_N$]$_N$ ('God-is-dead theology')
which can be formed productively in Afrikaans according to
Savini (1983). The structure (24b) could be argued to be the
structure underlying the majority of compounds, in Afrikaans,
e.g.[[tafel]$_N$[doek]$_N$]$_N$ ('table cloth'), [[soet]$_A$[mielie]$_N$]$_N$
('sweetcorn'), [[in]$_P$[sig]$_N$] ('insight'), [[bak]$_V$[oond]$_N$]$_N$
('baking-oven'), [[sop]$_N$[nat]$_A$]$_A$ ('sopping wet'), [[rooi]$_A$
[warm]$_A$]$_A$ ('redhot'), [[oor]$_P$[vol]$_A$]$_A$ ('filled to overflowing'),

$[[breek]_V[vry]_A]_A$ ('shatterproof'), $[[toneel]_N[speel]_V]_V$ ('to play-act'), $[[dood]_A[maak]_V]_V$ ('to kill'), $[[in]_P[sit]_V]_V$ ('to put in'), and $[[ry]_V[loop]_V]_V$ ('to hitch-hike'). The structure (24b) could also be argued to be the structure assigned to derived words such as $[[oppas]_V[-er]_{Af}]_N$ ('caretaker'), $[[eet]_V[-baar]_{Af}]_A$ ('edible'), $[[heilig]_A[-heid]_{Af}]_N$ ('sanctity'), $[[verderf]_N[-lik]_{Af}]_A$ ('pernicious'), $[[brou]_V[-sel]_{Af}]_N$ ('(a) brew'), $[[keur]_V[-ing]_{Af}]_N$ ('selection'), $[[ver-]_{Af}[groei]_V]_V$ ('to grow crooked'), $[[ont-]_{Af}[neem]_V]_V$ ('to deprive'), $[[be-]_{Af}[hou]_V]_V$ ('to keep'), and $[[on-]_{Af}[net]_A]_A$ ('untidy'). Note, in particular, that the compound verb structure (19), which is assumed to be an instance of the structural configuration (24b), would be ruled well-formed as required.

The structures (24c) and (24d) would be predicted to be impossible in Afrikaans. That is, Y^0 cannot be a complement in (24c) because by (25) all complements must be maximal projections. YP in (24d) cannot be a complement because it cannot be assigned Case within X^0. But in these structures Y^0 and YP cannot be specifiers/modifiers either, given the parameter (29b) which stipulates that specifiers must precede their heads. Hence, the structures (24c, d) would be ruled out as possible word structures in Afrikaans. As a result, word structure would be predicted to be right-headed in Afrikaans as in English.[25] The right-headedness of the structure (19), which I am assuming to be the structure of verb-particle combinations in Afrikaans, could thus be argued to follow from the structural principles assumed by Lieber.

It has been shown that Lieber's modified principles of phrase structure, in conjunction with certain assumptions about Case assignment and the settings of the parameters (22a, b) for Afrikaans, could be argued to account for the morphosyntactic well-formedness of the structure (19) which is assumed to be

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the structure underlying verb-particle combinations in Afri-
kaans. An important question which has not been addressed
yet, is the question of the well-foundedness of the modifi-
cations to $\overline{X}$ theory which Lieber proposes. It is clear that
without these modifications, an account of the possible word
structures of English and Afrikaans such as that outlined
above could not be given in terms of $\overline{X}$ theory. Let us there-
fore consider some of the theoretical and empirical conse-
quences of these modifications. For ease of reference, the
modifications proposed by Lieber are summarized in (31).

(31)(a)   The rewrite rule for X^n has to be modified to
          allow for the head of X^n to be of the same bar
          level as the mother node --- see (20) above.

   (b)   The principle that nonhead constituents are max-
          imal projections has to be modified to allow
          for nonhead constituents of the category level
          X^0 --- see (21) above.

   (c)   The head parameter has to be replaced by two
          parameters, one for complements and one for spe-
          cifiers --- see (22) above.

   (d)   It has to be stipulated that complements are
          Y^{max} --- see (25) above.

Consider the modification (31a). A first consequence of the
acceptance of the rewrite rule (20), would be that adjunc-
tion structures are allowed at the level of syntactic D-struc-
ture. Thus, the rewrite rule (20) expresses the claim that
any category X^n can dominate a category of the same bar level
as itself. Now, the well-foundedness of this claim would de-
pend on the availability of evidence indicating that a cate-
gory of _any_ bar level, and not just a category of the level
X^0, can dominate a category of the same bar level. Lieber,
however, provides no such evidence. Instead, she (to appear:
8) adds a proviso to the rule (20) to the effect that adjunc-
tion is possible "at least" at the category level X^0. But
if adjunction were to be possible only at the level X^0,

the parallelism that is claimed to obtain between word struc-
ture and phrase structure by the rule (20) would not exist.
The generalization expressed by (20) could then be argued to
be a false generalization and the well-foundedness of the
modification (31a) would have to be questioned. Note, how-
ever, that proposals assuming adjunction at levels other than
X^0 in D-structure have been made in recent studies couched
within the framework of some version of the GB theory of syn-
tax. Thus, recursion at the level of $\bar{V}$ is assumed, e.g.,
for the analysis of double object constructions by Larson
(1988:353), and for the analysis of verb clusters in Germanic
languages by Christensen (1986) and Travis (unpubl.). How-
ever, it would be incumbent upon proponents of a theory of
syntactic word formation, such as Lieber, to show that such
proposals are well-motivated and, hence, that the rule (20)
does not express a false generalization.

A second consequence of the modification (31a) would be that
it necessitates a redefinition of the notion 'projection of
category X'. The definition of the notion 'projection of
category X' is theoretically important insofar as the pre-
sence or absence of a projection relationship between a cate-
gory X^m and its dominating category X^n is a factor in deter-
mining whether or not features such as, e.g., Case features,
theta features, inflectional features, etc., can percolate,
i.e. be transmitted, between X^n and X^m. On current defini-
tions of the notion 'projection of category X', a category X^n
can be a projection of another category X^m only if X^n is one
bar level higher than X^m. On this definition, the dominating
category V^0 in (19) is not a projection of the dominated cate-
gory V^0, clearly an undesirable consequence. However, Fabb
(1984:16-18 , par. 1.3) has proposed an alternative definition
of the notion 'projection of category X' in terms of which
the head constituent of a syntactically complex word is in a
projection relationship with the category dominating it even
though both are of the same bar level. On Fabb's alternative
definition of the notion 'projection of X', the percolation
of features from a dominated category to the dominating cate-

gory (and vice versa) in a word structure such as (19) is
thus predicted to be possible. If this prediction could be
shown to be correct, the fact that the modification (31a)
necessitated such a redefinition of the notion 'projection of
category X' could be argued to be nonproblematic. The ques-
tion of the adequacy of Fabb's alternative definition of this
notion is a complex theoretical and empirical one that I can-
not attempt to resolve here. Suffice it to note, then, that
an alternative notion 'projection of category X', of the kind
required by the modification (31a), could be argued to be
definable in principle.

By (31b), it is assumed that nonhead constituents of words
and phrases may be either maximal or minimal projections.
This assumption, presented as (21) above, is clearly proble-
matic as far as phrase structure is concerned. It is gene-
rally accepted that nonhead constituents of phrases must be
maximal projections --- see e.g. (Stowell 1981:par. 2.1.2).
But if this is true of phrase structure generally, the prin-
ciples of phrase structure must express this fact. That is,
the principle (21) would have to be supplemented with a sti-
pulation to the effect that nonhead constituents of phrases
must be maximal projections. In the case of complements this
requirement is met by the stipulation (25), viz. that all
complements are maximal projections. However, the fact that
specifiers/modifiers of phrases must be maximal projections
would have to be stipulated as well. The mere fact that the
modification (26b) would necessitate such stipulations could
be argued to indicate that the generalization expressed by
(21) is a false generalization.[26]

Consider, next, the modification (31c), viz. the proposal of
the separate head parameters (22a) and (22b) to account for
the position of complements and specifiers respectively. To
justify this modification it would have to be argued that the
parameters (22a, b) are independently required to account for
possible phrase structure configurations in human languages
as well. Thus, given a broad definition of the notion 'head'

as either "head of $\bar{X}$" or "head of $\overline{X}$", it could, for instance,
be argued that these parameters are needed to specify that in
English $\bar{X}$ is generally rightheaded, with specifiers preceding,
whereas $\overline{X}$ is leftheaded, with complements following. However,
Stowell (1981:par. 4.3) has shown that, at least in English,
different types of specifiers and modifiers appear in different
positions in $\bar{\bar{X}}$, and that the position of a given type of spe-
cifier or modifier must be assumed to be determined by inde-
pendent principles of the grammar. If this could be shown to
be correct, it would follow that the position of specifiers
and modifiers in the structural configurations of individual
languages cannot be determined by the setting of a parameter
such as (22b). But if the parameter (22b) could not be as-
sumed to form part of the theory of phrase structure, it could
also not be invoked to account for properties of word struc-
ture. The fact that specifiers/modifiers must appear to the
left of the head in English word structures would then have
to be shown to follow from other principles of the grammar.
Until such time as the parameter (22b) could be shown to be
independently required to account for the possible phrase
structure configurations in human languages, therefore, its
inclusion in Lieber's set of syntactic principles could be
argued to amount to ad hoc stipulation.

As regards the parameter (22a), recall that it was shown
above that there is no obvious way in which the differences
as regards the position of complements between [+ N] and
[- N] categories in Afrikaans can be accounted for by speci-
fying a single value for this parameter. In addition, it
appeared that the variable position of the heads of VP and PP
with regard to their complements in Afrikaans could not be
accounted for by choosing a setting for the parameter (22a).
In both cases, it was argued, the facts of Afrikaans would
have to be accounted for in terms of other principles and/or
parameters of the grammar. This of course reflects negative-
ly on the well-foundedness of the modification (31c) which
entails the claim that the parameter (22a) forms part of a
language-independent set of syntactic principles and para-
meters.

The modification (31d), viz. the stipulation that all comple-
ments are Y^{max} --- formulated as (25) above --- is perhaps
the most problematic of the modifications proposed by Lieber.
Notice that the assumption that complements are maximal pro-
jections is generally made in current versions of the GB theory
of syntax. However, given that all nonhead constituents of a
phrase are required to be maximal projections on this theory,
there is no need to stipulate the maximality of complements.
The necessity for stipulating (25) could therefore be argued
to be an undesirable consequence of Lieber's acceptance of the
principle (21) which allows nonhead constituents to be either
maximal or nonmaximal. In the absence of the stipulation (25),
the structure (24c) with Y^0 to the right of the head X^0 would
be ruled well-formed by the principle (21). This would be
inconsistent with the facts of English according to Lieber
(to appear:13). The stipulation (25) appears, therefore, to
be required for the sole purpose of preventing Lieber's prin-
ciple (21) from making incorrect predictions about the well-
formedness of the structure (24c) in English. Hence, the
modification (31d) must be considered to be an ad hoc protec-
tive mechanism. In response to this criticism, Lieber could
argue that (24c) could be ruled out as a possible word struc-
ture of English on other grounds as well. Thus, she could
argue that (24c) could be ruled out for the same reason that
(24d) is ruled out. The latter structure is leftheaded and
contains a phrasal nonhead constituent which must be a com-
plement by (22a). This structure is argued by Lieber (to ap-
pear:13) to be ruled out on the assumption that Case can only
be assigned within a nonminimal projection. Given that the
dominating category in (24d) is X^0, i.e. a minimal projection,
Case would not be assigned to YP and the requirement that com-
plements must have Case would not be met. But the well-foun-
dedness of Lieber's assumption that Case can only be assigned
within a nonminimal projection could be questioned as well.
Lieber (to appear:19 n. 6) claims that the assumption that
Case is assigned only within nonminimal projections is impli-
citly made in current work on syntax. It should be noted,
however, that this assumption is made within a theoretical

framework in terms of which principles of Case assignment, applying as they do in the syntax, cannot refer to constituents below the X^0 level. By contrast, linguists such as Fabb (1984:43) and Sproat (1985:209), who accept that syntactic principles <u>can</u> refer to consituents below the X^0 level, assume that Case may be assigned within X^0.

Lieber rejects the former theoretical framework in favour of the kind of framework argued for by Fabb and Sproat. Therefore, she cannot justify the assumption that Case can be assigned only within nonminimal projections on the strength of its acceptability within the former theoretical framework. Rather, she would have to present evidence to show that the claim made by Fabb and Sproat, viz. that Case can be assigned within X^0, is incorrect. Until she has presented such evidence, her assumption concerning the impossibility of assigning Case within X^0 would have to be considered unfounded. Hence, the assumption in question could be argued to be ad hoc in the sense that it is apparently required for the sole purpose of ruling out the structure (24d) which would otherwise, incorrectly, be ruled well-formed by Lieber's structural principles and parameters. And if this assumption could be shown to be ad hoc, any argument for ruling out (24c) that was based on this assumption would have little merit. As a result, (24c) could be ruled out only by the stipulation (25) which has been argued to be ad hoc.

To summarize: it has been shown that all of the modifications proposed by Lieber to generally accepted principles of phrase structure could be argued to be problematic. First, in the absence of evidence indicating that adjunction is possible at syntactic levels other than the level X^0, the modified rewrite rule (20) for X^n could be argued to express a false generalization. Also, the modification in question would have the potentially problematic consequence of necessitating a redefinition of the notion 'projection of category X'. Second, the claim (21) that nonhead constituents can be nonmaximal entails that the maximality of the nonheads of phrases has to be stipulated.

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The claim could therefore be argued to express a false gene-
ralization. Third, in the absence of independent evidence
for the specifier parameter (22b), this parameter could be
argued to be stipulatory in nature. Also, the claim that the
complement parameter (22a) forms part of a language-indepen-
dent set of structural principles and parameters has been
argued to be inadequate as a basis for predicting the possible
positions of complements in Afrikaans phrase structure. And
fourth, the claim (25) that all and only complements are
X^{max} has been argued to be an ad hoc mechanism required only
to protect Lieber's claim (21) from refutation.   In addi-
tion, it could be argued that Lieber has failed to present
relevant evidence for her assumption that Case can be assigned
only within nonminimal projections.

It must be concluded, then, that the modifications (31a-d)
to $\overline{X}$ theory proposed by Lieber, as well as her assumption
concerning Case-assignment within X^0 structures, are by no
means unproblematic.   The problematic nature of these modi-
fications has potentially serious consequences for a theory
of syntactic word formation.   The question of exactly how
serious these consequences are will be addressed in par. 6.4
below.   However, let us assume for the present that an ac-
count of the morphosyntactic well-formedness of the struc-
tural representation (19) assigned to verb-particle combina-
tions in Afrikaans could be given along the lines indicated
above.   It then has to be established what further assump-
tions of a general and/or language-specific nature need to be
made to account for the remaining properties of verb-particle
combinations mentioned in chapter 2 on the basis of an ana-
lysis such as that outlined above.

6.3.3 Accounting for the properties of verb-particle combinations

In the previous paragraph we considered the formal devices pro-
posed by Lieber to account for the morphosyntactic well-formed-
ness of structural representations such as (19) above, assumed
to be the representation assigned to verb-particle combinations
in Afrikaans. The analysis outlined in par. 6.3.1 will hence-
forth be referred to as the syntactic compound analysis in
view of its two central hypotheses, viz. that Afrikaans verb-
particle combinations are compound verbs --- see (8a) above
--- and that compound verbs are syntactic constructs, the
morphosyntactic properties of which are determined by syntactic
rules and constraints --- see (8b) above.

The main concern of this section will be to establish whether
the characteristic cluster of properties of Afrikaans verb-
particle combination discussed in chapter 2 can be accounted
for, given the hypotheses (8a) and (8b) and the general as-
sumptions of a theory of syntactic word formation as outlined
in (6) above. The property with which we shall be particularly
concerned is the difference in syntactic cohesiveness displayed
by verb-particle combinations with regard to the rule of V-
second and rules of inflection on the one hand and rules such
as V-raising, PP-preposing, PP-over-V and Gapping, and the
progressive construction on the other hand. This property
will be extensively discussed in par. 6.3.3.1. Other proper-
ties of verb-particle combinations, such as their ability to
serve as bases of word formation rules, their tendency to have
noncompositional meanings and idiosyncratic subcategorization
properties, and their characteristic stress pattern will be
briefly considered in par. 6.3.3.2.

6.3.3.1 Syntactic separability vs. syntactic cohesiveness

Consider once again the syntactic behaviour of verb-particle
combinations as described in chapter 2. On the one hand, the

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verb and the particle are obligatorily separated by applica-
tion of V-second (par. 2.2) and rules of inflection (par.
2.3). The effect of the application of V-second is illus-
trated in (32) and that of the rule of ge-inflection in (33).

(32)(a) *Hy vermoed dat sy by hom af + kyk.*
        he suspects that she from him off looks
        'He suspects that she cribs from him.'

   (b) *Sy kyk by hom af.*
       she looks from him off
       'She cribs from him.'

(33)   *Sy het by hom af + GEkyk.*
        she has from him off -ED look
        'She cribbed from him.'

On the other hand, the verb and the particle can not be sepa-
rated by the application of rules such as V-raising, PP-pre-
posing/Topicalization, PP-over-V/PP-extraposition and Gapping,
and in progressive constructions (par. 2.7), as was illustra-
ted in par. 6.3.1 above. These facts pose two problems for
a syntactic compound analysis of verb-particle combinations
such as that outlined above.

First, given the general theory concerning the relationship
between morphology and syntax being assumed, viz. a theory
of syntactic word formation, a principle such as the Lexical
Integrity Hypothesis would not be available as a basis for
explaining why constituents of syntactically complex words
cannot be separated by the application of rules such as V-
raising, etc. The syntactic cohesiveness of the constituents
of structures such as (19) would have to be shown to follow
from some independently required principle or principles
rather than from the mere fact of their being dominated by
the category X^0. Second, supposing that the syntactic cohe-
siveness of verb-particle combinations with regard to rules

such as V-raising, etc., could be shown to follow from some
independently required grammatical principle, a theory of
syntactic word formation would have to be able to explain why
rules such as V-second and *ge-* affixation are not subject to
this principle.

6.3.3.1.1 Nonhead movement

Consider first the problem of accounting for the syntactic
cohesiveness of verb-particle combinations with regard to
rules such as PP-preposing and PP-over-V. The impossibility
of preposing or postposing the particle constituent of a
verb-particle combination could be claimed to follow, tri-
vially, from the fact that the relevant rules, i.e. the rules
of PP-preposing and PP-over-V respectively, are formulated as
PP rather than P movement rules. Such an account would be
highly stipulatory, however. Given a theory of syntactic
word formation, syntactic rules such as Move α must presu-
mably be able to move X^0 categories as well as X^{max} catego-
ries, subject to general constraints such as the Empty Cate-
gory Principle, Subjacency, etc. Baker (1985:par. 1.2) in
fact argues that the rule Move α should be generalized in
this way. Supposing that PP-preposing and PP-over-V are
subcases of the rule Move α , with α potentially either
P^0 or P^{max}, then an alternative explanation for the inability
of these rules to move the P constituent in a structure such
as (19) would be required.

Lieber (1984:196) argues that movement out of or into X^0
categories could be prohibited by stipulating that X^0 counts
as a bounding node for Subjacency. The Subjacency condition
which Lieber has in mind is formulated as follows by Van
Riemsdijk and Williams (1986:62):

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(34)   Subjacency condition

No rule can relate X, Y in the structure

... X ... [α ... [β ... Y ...

(or: ...Y ...] β ...] α ... X ...)

where α , β are bounding nodes.

Thus, if X in (34) is a moved constituent and Y its trace,
(34) expresses the claim that a maximum of one bounding node
may intervene between a moved constituent and its trace. That
is, either movement shown in (35a) is possible, but not that
shown in (35b). The circled nodes represent the bounding nodes
intervening between the moved constituent X and its trace Y in
(35).
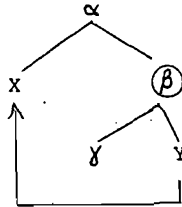
(35)(a) i.   ii.
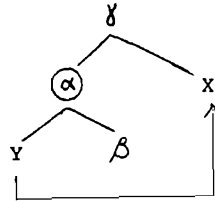
(b)
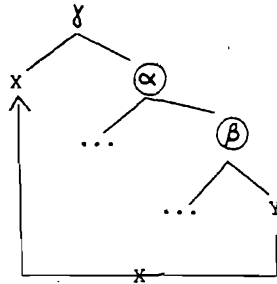
Languages may vary in their choice of bounding nodes along
parameters laid down in Universal Grammar --- see (Van
Riemsdijk and Williams 1986:74) for discussion.

Supposing that we did stipulate that X^0 counted as a bounding

node for Subjacency. Supposing also that we assumed that S
is a bounding node for Afrikaans.[27] Then, it could be argued
that Subjacency will rule out the preposing of P in a struc-
ture such as (36a). In (36a) P is required to cross two
bounding nodes, viz. the circled V^0 and S. Movement of P
over V in the structure (36b) would not be ruled out, how-
ever, because the movement crosses only one bounding node,
viz. the circled V^0.

(36)(a) $\bar{S}$ (b)   VP
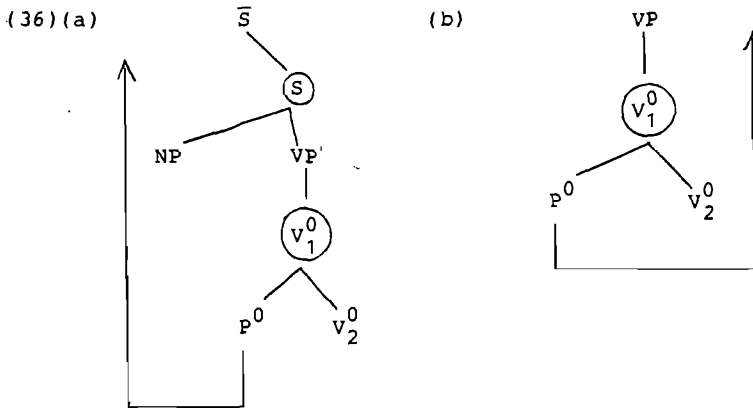
Thus, even if we took X^0 to be a bounding node, Subjacency as
formulated in (34) would not be able to account for the im-
possibility of P^0 movement in (36b).

Baker (1985:63ff) has argued that the movement of both X^{max}
and X^0 constituents is subject to the Empty Category Principle,
which imposes even stricter constraints on X^0 movement than
does Subjacency. The Empty Category Principle is formulated
as follows by Baker (1985:50):

(37)   Empty Category Principle (ECP)
        Traces must be properly governed.

The notion 'government' is defined as follows by him (1985:49):[28]

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(38)   Government

A governs B if and only if A c-commands B
and there is no category C such that C is
a barrier between A and B.

Thus consider the structures in (39).

(39)(a)
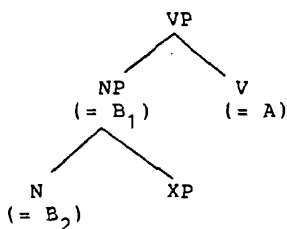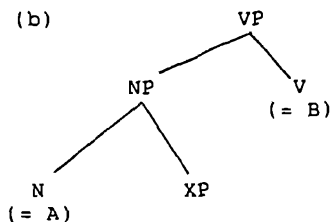
In (39a) A c-commands B_1 because VP, i.e. the first maximal
projection which dominates A, also dominates B_1. Hence, A
governs B_1. Whether or not A also governs B_2, which it c-
commands, will depend on whether or not the intervening NP
(= B_1) counts as a barrier to government between A and B_2.
The notion 'barrier' will be discussed below. In (39b) A
does not c-command B because NP, i.e. the first maximal pro-
jection which dominates A, does not dominate B. Hence, A
does not govern B in (39b).

By the ECP, traces must not only be governed, they must be
properly governed. A trace is properly governed, according
to Baker (1985:67), if it is governed either by an element
which is theta-indexed with it, or by an element which is
identification-indexed with it.[29]

The first case of proper government is the case where a trace
is properly governed by virtue of being a complement of, i.e.
of being assigned a theta role by, a lexical head which governs
it. For example, the NP position (= B_1) in structure (39a) is
properly governed because it is a complement of, hence theta-

indexed with (i.e. assigned a theta role by), the V which
governs it. This possibility is not available for the trace
of an X^0 category, according to Baker, because only X^{max} may
be assigned a theta role, and not X^0. That is, the trace of
an X^0 constituent can never be properly governed by a lexical
head as the X^0 constituent cannot be theta-indexed with the
head. It follows, then, that the position of N (= B_2) in (38a)
is not properly governed by V (= A), since NP (= B_1) and not
N is theta-indexed with the governing lexical head V. The
only circumstances in which the N position would be properly
governed, according to Baker (1985:74f), would be if it was
governed by an element with which it was identification-
indexed, the second case of proper government mentioned above.
Before considering this second case note that, by the defini-
tion of proper government as 'theta-indexing with a governing
lexical head', the trace of the moved P^0 in structures (36a)
and (36b) could not be claimed to be properly governed by the
lexical head V^0.

The second case of proper government is the case where a
trace is governed by the antecedent with which it is coin-
dexed as a result of the application of the rule Move α.
Let us consider the question of whether the trace of the
moved category P^0 in (36a, b) would be properly governed in
terms of this alternative definition of proper government.
I will assume that in both structures (36a) and (36b) the
position to which P^0 is moved will c-command the position of
the trace of P^0, i.e. the first branching node dominating P^0
will also dominate the trace of P^0. The question then is
whether there is a barrier category which intervenes between
the two, blocking government. Baker (1985:71) defines the
notion 'barrier' as follows:[30]

(40)   *Barrier*
         The maximal projection C is a (government) barrier
         between A and B if and only if C contains B, C
         does not contain A, and C is not theta-indexed
         (with A).

Consider again the structure (39a). This structure contains
two maximal projections which are potential barriers to govern-
ment, viz. NP and XP. Now, let V = A and N or XP = B. As
a complement of V, NP will be theta-indexed with V. According
to Baker (1985:71ff), NP would not be a barrier to government
of either N or XP by V. But XP is not theta-indexed with V.
Therefore XP would be a barrier to government by V of both it-
self and any category that it may dominate. As a result, a
trace in the N position but not in the XP position will be
properly governed by an antecedent adjoined to V. That is,
the head, but not the nonhead, of a constituent can be governed
by an element appearing outside that constituent.

Now consider the structures (36a, b). In order to be able to
argue that the trace of P^0 is not governed by its antecedent,
one of the intervening nodes would have to be shown to consti-
tute a barrier to government between the trace of P^0 and the
position to which it is moved. Neither P^0 nor V_1^0 is a poten-
tial barrier. Both these nodes satisfy the requirement that
they may not be theta-indexed with the antecedent of the
moved category, given that only maximal projections can be as-
signed theta roles. But, by the same argument, neither P^0 nor
V_1^0 can be a maximal projection. Thus, as only maximal pro-
jections can be barriers to government by (40), neither P^0 nor
V_1^0 would constitute a barrier to government between the trace
of P^0 and its antecedent. The only other category which is a
potential barrier in both structure (36a) and structure (36b)
is VP. VP is not assigned a theta role by the node into which
P^0 is moved, as VP is assigned a theta role by I(NFL) --- see
par. 6.3.3.1.2 below --- and neither PP-preposing nor PP-
over-V moves a constituent to the I(NFL) position. Thus, con-
sider (41), which is a slightly more detailed representation
of the structure (36a).

(41)　　　　　IP　　(= Inflectional Phrase/S)
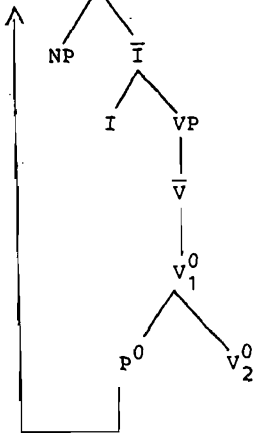
Whatever the exact node into which P^0 is moved by the rule of PP-preposing/Topicalization, it must be to the left of the subject-NP and hence cannot be I. Thus, VP is not assigned a theta role by the node which receives the moved category P^0. VP is also a maximal projection which contains the trace of P^0 but not its antecedent. Hence, VP would count as a barrier to government between P^0 and its trace.

In order for VP also to count as a barrier to government between the postposed P^0 node and its trace in (36b), VP would have to contain the trace of P^0, but not the antecedent. That is, the structure after application of PP-over-V would have to be roughly as shown in (42).

(42)
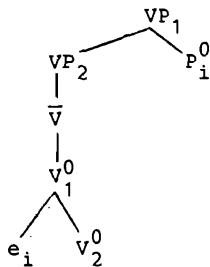
That is, it would have to be assumed that P^0 is adjoined to VP
so that VP_2, which contains the trace of P^0, does not contain
the antecedent as well. In this case VP_2 would count as a
barrier to government between P^0 and its trace by (40). Notice
that the postposed PP/P constituent could be argued to func-
tion as a specifier/modifier of V_2^0 in the same way that nonsub-
categorized adverbials of time and place function as speci-
fiers/modifiers of VP. As specifiers and modifiers are intro-
duced at the level of $\bar{\bar{X}}$ on $\bar{X}$ theory, it would seem reasonable
to assume that adjunction of a moved specifier/modifier of V_2^0
would take place at the level of VP ($\bar{\bar{V}}$) --- see (Stowell
1981:281-282) for some discussion.

Thus, in both (41) [= (36a)] and (42) [= (36b)] VP could be
argued to constitute a barrier category to government of P^0
by its antecedent. In that case the impossibility of move-
ment from the nonhead position of the compound V in the struc-
tures (36a, b) could be accounted for on the basis of the claim
embodied in (40), viz. that the presence of a lexical head in
the sister position of a trace blocks government of the trace.
Movement of the nonhead constituent of the compound V in
(36a, b) would leave behind an ungoverned trace in violation
of the ECP. Hence, movement of the nonhead constituent of the
compound V would be predicted to be impossible.

The impossibility of P^0 movement in structures such as (36a,
b) could therefore be argued to follow from the ECP, given
currently accepted definitions of notions such as 'government',
'proper government', and 'barrier'. In order for the argument
to hold, the assumption that P^0 is adjoined to VP by the rule
of PP-over-V, yielding the structure (42), would have to be
independently motivated. I shall not attempt to do so here.

6.3.3.1.2   Head movement

Having presented a possible argument in terms of which the
impossibility of movement of the nonhead of a syntactically

complex word could be accounted for without assuming a princi-
ple such as the Lexical Integrity Hypothesis, let us consider
the problem of accounting for the facts concerning the move-
ment of the verbal head constituent of verb-particle combina-
tions in Afrikaans. The crucial facts are the following:
whereas the verb-particle combination is treated as a unit by
the rule of V-raising in Afrikaans, V-second cannot move the
particle along with the verb. Examples illustrating the ef-
fect of V-raising and V-second on verb-particle combinations
in Afrikaans were presented in par. 2.3 and par. 2.7 above.
Thus we have the contrast shown in (43) and (44).

(43)   V-raising:

    (a)   ?*omdat*   *Jan*   *[haar* *op* *e]*   *wou*   *bel*
          because John   her   up   wanted ring

    (b)   *omdat*   *Jan*   *[haar* *e* *e]* *wou*   *op* + *bel*
          because John   her   wanted up   ring
          'because John wanted to ring her up'

(44)   V-second:

    (a)   *Jan* *bel*   *sy* *meisie* *op*.
          John rings his girl   up.

    (b)   **Jan* *op* + *bel*   *sy* *meisie*.
          John up   rings his girl
          'John rings up his girlfriend.'

As was pointed out in par. 2.7, judgements in the V-raising
cases are not always clear. It appeared that the more trans-
parent the meaning of a verb-particle combination, the more
hesitant speakers are to rule out as completely unacceptable
sentences such as (43a) in which the particle is left behind
and the verb alone is moved to the "raised" position. I shall
not attempt to account for this phenomenon here. For purposes
of the present discussion it will be assumed that the prefer-
red position for the particle after application of the rule

of V-raising, viz. the position adjacent to the verb, is in-
deed the only possible position for the particle in Afrikaans.
V-second, by contrast, can never front the particle along with
the verb in Afrikaans, as indicated by the ill-formedness of
(44b) above.

On the syntactic compound analysis outlined in par. 6.3.1, the
verb-particle combination *opbel* in Afrikaans would be assigned
the structure $[[op]_p[bel]_V]_V$. Notice that any movement rule
that applied to the inner rather than the outer V node in such
a structure would violate the A-over-A Principle presented as
(19) in par. 4.2.3 above. This principle requires that a rule
that refers ambiguously to V in a structure such as $[...[\ ]_V...]_V$
can only be taken to refer to the outer V node. The A-over-A
Principle would therefore, correctly, prevent a rule such as
V-raising from moving only the inner V *bel*, thereby separating
the constituents of the syntactically complex verb. As the
head of an (endocentric) compound by definition bears the same
categorial features and is of the same category level as its
dominating category, movement of the head of a compound would
be effectively ruled out by the A-over-A Principle.[31] It
could then be argued that the characteristic syntactic cohe-
siveness of verb-particle combinations, and of endocentric com-
pounds in general, could be accounted for without assuming a
principle such as the Lexical Integrity Hypothesis.

The A-over-A Principle, however, would also prevent the rule
of V-second from moving the inner V *bel* out of the structure
$[[op]_p[bel]_V]_V$. This brings us to the second problem men-
tioned at the beginning of this section, viz. that of explain-
ing why V-second is not subject to the principles that prevent
rules such as PP-preposing, PP-over-V, and V-raising from
moving a constituent of a verb-particle combination. Recall
that it has been shown that the ECP could be argued to be re-
sponsible for blocking movement of the nonhead constituent
(i.e. the particle) by rules such as PP-preposing and PP-over-V.
Let us consider the question whether the ECP could also be
argued to block movement of the head (i.e. the verbal consti-

tuent) of a verb-particle combination by the rule of V-second.
Following Chomsky (1986:68ff), the relevant phrase structure
configuration may be taken to be as follows:

(45)   CP   (= Complementizer Phrase/$\overline{S}$)
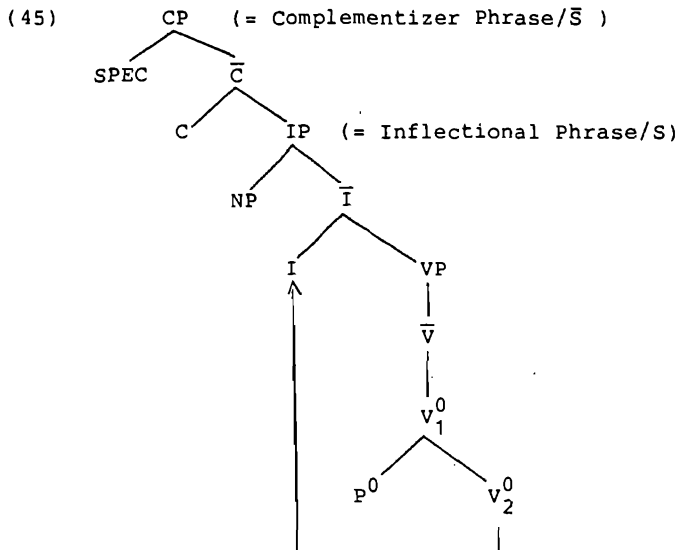
The arrow indicates the path along which V_2 is moved by the rule
of V-second. V_2 is moved to the head position in $\overline{I}$ where
it substitutes for, hence merges with, I (= INFL) according
to Chomsky (1986:4-5).   If V_2 moves to I its trace must be
properly governed in order to satisfy the ECP. By the defini-
tion of proper government presented in par. 6.3.3.1.1 above,
the trace of V_2 will be properly governed if it is antecedent-
governed, i.e. governed by the moved constituent in the I
position. The question, therefore, is whether I (the position
to which V_2 is moved by V-second) governs the V_2 position in
the structure (45). I c-commands V_2 as required by the defi-
nition of government presented in (38). Given the definition
(40) of the notion 'barrier', the only potential barrier to
government of V_2 is the maximal projection VP which intervenes
between I and V_2.

According to Chomsky (1986:68ff) and Baker (1985:70), VP is
not a barrier to government of V_1 in a structure such as (45).
The general principle was shown in par. 6.6.3.1.1 to be that
if the maximal projection of the category containing a trace
is theta-indexed with the head position containing the antece-
dent of the trace, this maximal projection is not a barrier
to government of the trace by the antecedent. VP is theta-
indexed with I according to Chomsky (1986:20).[32] Hence, V_1
and, presumably, its head V_2 are governed by I and can there-
fore be moved to the I position. The moved constituent would
govern its trace, which would therefore be antecedent-governed,
hence properly governed, and no violation of the ECP would
occur.

The problem with this argument, of course, is that the ECP
would allow movement of either V_1 or V_2 as both are X^0 cate-
gories and both are governed by I, the position to which V is
moved. But movement of V_1 must be blocked and only movement
of V_2 must be allowed in structures such as (45) in order to
account for the facts of (44) above. That is, given that the
rule of V-second, as a head movement rule, moves the minimal
projection of the category V^n --- see (Chomsky 1986:4) ---
V_2 would have to be assumed to be the minimal projection of
V^n in a structure such as (45).

The assumption that the lowest V^0 node in a structure such as
(45) is the minimal projection of V^n could be argued to be in-
dependently motivated by virtue of the fact that it could also
serve as a basis for explaining the inflectional properties of
verb-particle combinations in Afrikaans. Thus, this assumption
could serve as a basis for explaining why the inflectional af-
fix *ge-* attaches to V_2 rather than to V_1, yielding (46a) and
not the ill-formed (46b) --- see also (33) above.

(46)(a) *Hy het haar op + GEbel*.
         he has her up + AFFIX ring
         'He rang her up.'

(b) *Hy het haar _GE_ + _opbel_.

he has her AFFIX up ring

Let us assume, along the lines suggested by Travis (unpubl.:
14), that the relevant part of the D-structure of (46) is as
follows:

(47)
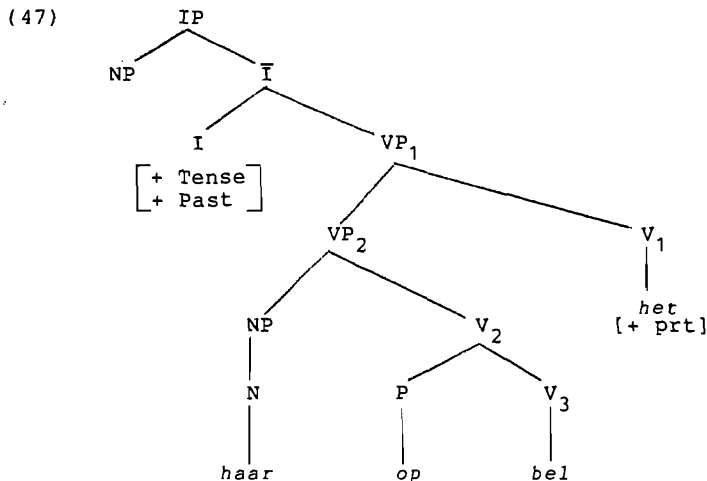
The feature specification [+ prt] in (47) refers to a lexical
property of the verb _het_ ('have'), viz. that its verbal com-
plement must be a participle. According to Travis (unpubl.:
14), a feature such as [+ prt] is assigned by a head X with
which it is lexically associated (i.e. V_1 in (47)) to a maxi-
mal projection which is a complement Y of that head (i.e.
VP_2 in (47)). Like, e.g., Case features, a feature such as
[+ prt] percolates down to the head (i.e. the minimal projec-
tion) of Y, where it is spelled out as the appropriate in-
flectional form, presumably at the level of PF.

The fact that the participle affix _ge-_ is "spelled out" on the
verb _bel_ and not on the compound verb _opbel_, as shown in (46),
could be argued to indicate that V_3 rather than V_2 must be as-

sumed to be the minimal projection or head of VP_2 in (47).
Thus, it could be argued that the head V of a compound verb,
rather than the dominating V node, must be assumed to be the
minimal category in the V projection line, i.e. the head of
VP, for purposes of both V-second and feature percolation.

The assumption that the head of the compound verb is also the
head of VP in structures such as (45) and (47) above would not
be inconsistent with a model of the relationship between mor-
phology and syntax on which word structure is claimed to be a
part of sentence structure. The assumption would be inconsis-
tent with the A-over-A Principle, however. Therefore, uphold-
ing an account of verb-particle combinations such as the one
outlined above would entail abandoning the A-over-A Principle
as a general linguistic constraint. Given the uncertain sta-
tus of this principle in current versions of the GB theory of
syntax --- see n. 31 above --- this could be argued to be
less damaging than it may at first appear.

Let us consider what consequences abandoning the A-over-A
Principle would have for the kind of analysis that we are con-
sidering. First, if the A-over-A Principle were to be aban-
doned, an alternative account of the V-raising facts of (43)
would have to be given. Second, an alternative explanation
would have to be found for the fact that the heads of (endo-
centric) compounds can generally not be moved out of the com-
pound structure in which they appear.

An alternative account of the behaviour of verb-particle com-
binations with regard to V-raising would have to proceed from
the assumption that, unlike V-second which moves a minimal
projection of V, V-raising moves a nonminimal projection of V.
An analysis along these lines has in fact been proposed by,
e.g., Haegeman and Van Riemsdijk (1986). They (1986:419)
argue that by building the possibility of parametric varia-
tion into the rule responsible for so-called V-raising pheno-
mena in Germanic languages, variation such as that shown in
(48) can be accounted for:

(48)(a) Standard Dutch:

    i. *dat Jan [PRO [een huis kopen]] wil*
        that John   a house buy   wants
        'that John wants to buy a house'

    ii. *dat Jan [PRO [een huis e]] wil   kopen*
        that John   a house   wants buy

    iii. **dat Jan [PRO [e e]] wil   een huis kopen*
          that John   wants a house buy

  (b) West-Flemish:

    i. *da Jan [PRO [een hus kopen]] wilt*
        that John   a house buy   wants

    ii. *da Jan [PRO [een hus e]] wilt   kopen*
        that John   a house   wants buy

    iii. *da Jan [PRO [e e]] wilt een hus   kopen*
         that John   wants a house buy

  (c) Züritüütsch:

    i. *das de Hans [PRO [es huus chaufe]] wil*
        that   Hans   a house buy   wants

    ii. *das de Hans [PRO [es huus e]] wil   chaufe*
        that   Hans   a house   wants buy

    iii. *das de Hans [PRO [e e]] wil   es huus chaufe*
        that   Hans   wants a house buy

According to Haegeman and Van Riemsdijk (1986:428-434), an
extraposition analysis of sentences such as (48b iii) and
(48c iii) above is ruled out on independent grounds. Their
arguments will not be repeated here. Assuming that their argu-
ments are sound, the difference in acceptability between (48a
iii) and the (iii)-sentences in (48b, c) would have to be as-
sumed to follow from differences in the way V-raising is formu-
lated and/or applied in the various dialects.

Specifically, according to them (1986:426), languages may dif-
fer with regard to the projection level specified for the V
node that undergoes raising.

A parameterized account of V-raising along the lines proposed
by Haegeman and Van Riemsdijk could be argued to provide a
potential explanation for the fact that both the verb and the
particle must be raised in Afrikaans. The success of such an
argument would depend on the possibility of providing a non-
ad hoc definition of the notion 'nonminimal projection of V'.
Note that the claim that the V^0 node dominating a compound
structure such as (19) is a nonminimal projection would be
consistent with the assumption that the head V^0 of the com-
pound structure is the minimal projection of V. The latter
assumption has been argued above to be necessary to account
for the facts concerning V-second and *ge-* inflection in Afri-
kaans. However, it is not immediately clear how the distinc-
tion 'minimal vs. nonminimal projection' may be made with
respect to the head and the dominating category in a compound
structure, given that both categories are of the same level,
viz. X^0. One possibility would be to define the notion 'head'
or 'minimal projection', of XP as 'the lowest nonbranching
category X in a tree'. However, I shall not pursue this ques-
tion here.

An account of V-raising in terms of which the projection level
of the V node affected by the rule is assumed to be subject to
variation across languages could also serve as a basis for ex-
plaining why Dutch differs from Afrikaans in that the particle
may be either raised along with the verb or left behind in the
former but not in the latter language. This difference between
Dutch and Afrikaans was illustrated in par. 2.2 above. The
relevant examples are repeated in (49).

(49)(a) Dutch:

          i. *omdat   Carol [hem op + bellen] kon*
              because Carol him up   ring   could
              'because Carol could ring him up'

    ii.   *omdat*   *Carol [hem <u>op</u> e] kon*   <u>*bellen*</u>
         because Carol him up   could ring

   iii. *omdat*   *Carol [hem e e] kon*   <u>*op*</u> + <u>*bellen*</u>
         because Carol him   could up ring

 (b) Afrikaans:

    i. **omdat*   *Jan [haar <u>op</u> + <u>bel</u>] wou*
        because John her up   ring wanted
        'because John wanted to ring her up'

    ii. *?omdat*   *Jan [haar <u>op</u> e] wou*   <u>*bel*</u>
        because John her up   wanted ring

   iii. *omdat*   *Jan [haar e e] wou*   <u>*op*</u> + <u>*bel*</u>
        because John her   wanted up   ring

Assuming an account such as that proposed by Haegeman and Van Riemsdijk, the difference in acceptability between (49a ii) and (49b ii) could be argued to be the result of a difference between Dutch and Afrikaans as regards the values assigned to the parameter determining the projection level of V at which V-raising applies. Note that no such explanation would be possible within the framework of a theory incorporating the A-over-A Principle. If the syntactic compound analysis of verb-particle combinations outlined here were to be extended to Dutch, opbellen would have to be assigned the structure $[[op]_p[bellen]_V]_V$. Given that the clustering of properties displayed by verb-particle combinations in Dutch were shown in chapter 2 to be similar to those displayed by Afrikaans verb-particle combinations, the claim that they should be as-signed the same analysis may be assumed to be a reasonable one.[33] But then the A-over-A Principle would rule out sentences such as (49a ii) as ill-formed in Dutch, clearly an undesirable consequence. Hence, in addition to the fact that an analysis along the lines proposed by Haegeman and Van Riemsdijk could be argued to account for the behaviour of Afrikaans verb-particle combinations with regard to V-raising without

referring to the A-over-A Principle, at least one good reason
could be provided for preferring such an account to one that
does refer to the A-over-A Principle.

As is clear from the foregoing discussion, the argument for
the claim that the behaviour of verb-particle combinations
with respect to V-raising in Afrikaans can be accounted for
without reference to the A-over-A Principle relies on two
assumptions. The first is that Haegeman and Van Riemsdijk's
parameterized account of V-raising can be justified empiri-
cally and theoretically. The second is that a notion 'non-
minimal projection of V' can be defined in terms of which
the required distinction between possible and impossible
applications of V-raising can be made in Afrikaans. The pro-
blematic nature of the second assumption has been indicated
already. Let us consider the question of whether the first
assumption could be argued to be problematic as well.

Haegeman and Van Riemsdijk's account could be argued to be
problematic on theoretical grounds. Unlike most other ac-
counts of V-raising --- see chapter 2 n. 4 --- their
account assumes V-raising phenomena to be the result, not of
V movement, but of the successive application of a syntactic
reanalysis rule and a phonological inversion rule. The de-
tails of their analysis do not concern us here --- see n.35
below for some discussion. It should be noted, however, that
whereas the properties of movement rules have been investi-
gated in great depth and could be claimed to be well-under-
stood within the framework of GB syntax, this is not true of
reanalysis rules. Thus, Baker (1988:40-41) has argued against
a reanalysis account of V-raising on the grounds that it is
highly stipulative and requires a weakening of the theory of
phrase structure.

However, it is not so much the assumption that V-raising is
the result of reanalysis which is of importance here. It is
the assumption that languages may differ with regard to the
projection level of V at which V-raising, however it is de-

fined, takes place. The latter assumption is made by Baker
(1988:51-52) as well. Moreover, Baker (1988:48ff) proposes an
alternative, movement-and-cliticization account of V-raising
which is explicitly shown to obey the ECP and which would there-
fore be consistent with the general theoretical framework as-
sumed here.[34] The question of which of the two alternative
analyses is to be considered the more adequate is clearly im-
material here. The important point is that the assumption
concerning the ability of V-raising to apply at a nonminimal
projection level of V could be argued to be unproblematic.
Given this assumption (and an appropriate definition of the
notion 'nonminimal projection of V') the behaviour of verb-
particle combinations with regard to V-raising in Afrikaans
would follow on whatever analysis should prove to be concep-
tually and empirically the more acceptable analysis of this
phenomenon in Afrikaans.

It is less clear how the second consequence of giving up the
A-over-A Principle could be handled. That is, it is not im-
mediately obvious how the GB theory of syntax, as currently
construed, could account for the fact that the head of an
endocentric compound cannot be moved out of the compound
structure, except in the case where the head and its domina-
ting node are of the category V. In order for such an account
to be possible, it would have to be argued that V^0 movement
differs in some crucial respect from other X^0 movement rules.
Let us consider one possible difference between X^0 movement
and V^0 movement, where I will assume V-second to be the core
case of V^0 movement in Afrikaans. V-raising will be disre-
garded here as it could be argued to affect a nonminimal pro-
jection of V rather than V^0 in Afrikaans, as shown above.
Also, the status of V-raising as a movement rule is not beyond
dispute.[35] Recall that V-second is claimed to be a substitu-
tion rule by GB theorists such as, e.g., Travis (unpubl.) and
Chomsky (1986). They assume that V^0 is moved to an empty
I(NFL) node in structures such as (45) and (47) above, where
V^0 substitutes for, or "merges with", the inflectional fea-

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tures associated with I. Consider the case where the moved
V^0 is assumed to have originated as the head of a compound
verb. The result of the substitution of the moved V^0 for I
would be a structure such as (50).

(50)

$$
\begin{array}{c}
\bar{I} \\
\swarrow \qquad \searrow \\
V^0_i \qquad\qquad VP \\
\left[\begin{array}{l} \alpha\ \text{Tense} \\ \beta\ \text{Past} \\ \text{---} \end{array}\right] \qquad \bar{V} \\
| \\
V^0_1 \\
\swarrow\ \ \searrow \\
X^0 \qquad e_i
\end{array}
$$
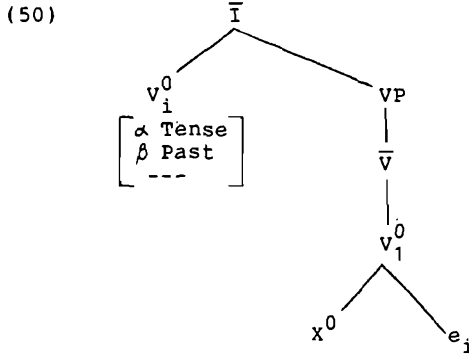
The formulation of X^0 movement as a substitution rule depends
crucially on the availability of an empty structural position
to which X^0 can be moved. On Travis's and Chomsky's accounts
I and, in some cases, C (the head position in CP) are empty
at the level of D-structure and hence can serve as potential
landing sites for a moved V^0 category. No empty head posi-
tions for which X^0 categories other than V^0 can be substituted
are obligatorily present at the level of D-structure, however.
As a result, all other X^0 movement rules would have to be head
adjunction rules, as is in fact argued by Baker (1985). The
structure that would result from the adjunction of the head
of a compound to a c-commanding node could be abstractly re-
presented as in (51), in which XP must be assumed to be a com-
plement of, hence theta-indexed with, Y^0 to satisfy the ECP.[36]

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(51)
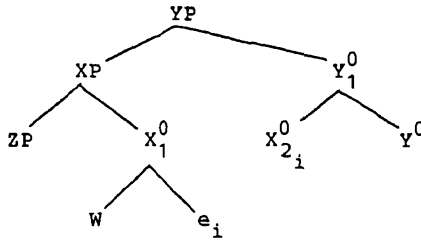
The structures (50) and (51) differ with regard to the number of 0-level categories that intervene between the moved category X^0 and its trace. In (50) only one 0-level category, viz. V_1^0, intervenes between the moved V^0 and its trace. In (51), by contrast, two 0-level categories, viz. X_1^0 and Y_1^0 intervene between the moved X^0 and its trace. Suppose it could be argued that the presence of more than one X^0 category between an antecedent and its trace constitutes a barrier of some sort. If the presence of two intervening X^0 nodes were to be taken to constitute a barrier to government, then structures such as (51), hence all structures resulting from the movement of an X^0 category other than V^0 from a compound structure, would contain a trace that is not properly governed. Such structures would then be ruled out by the ECP. By contrast, V^0 movement, as a substitution rule, would result in a structure that did not violate the ECP.

Alternatively, the presence of two intervening X^0 nodes could be assumed to constitute a barrier, not for government, but for movement. In the latter case, the movement of an X^0 category other than V^0 from the head position in a compound to a position within the head of which the phrase containing the compound is a complement would result in a Subjacency violation.

The argument outlined above depends on the well-foundedness of the assumption that the presence of two or more X^0 categories between an antecedent and its trace constitutes a barrier, either for government or for movement. If this assumption could be shown to be well-founded, the impossibility of head

movement from a compound structure other than a compound V
structure could be argued to follow from the ECP or from Sub-
jacency. On such an account the A-over-A Principle could be
dispensed with. The account would also be superior to an ac-
count in terms of the A-over-A Principle, as the former ac-
count would be able to draw the required distinction between
possible and impossible movement from compound structures, a
distinction that cannot be made on the basis of the A-over-A
Principle. As the theoretical and empirical issues involved
in any proposal concerning the definition of the notion 'bar-
rier' are highly complex, the question of the adequacy of a
notion 'barrier' defined in terms of the presence of two or
more X^0 categories will not be pursued here.

6.3.3.1.3   Gapping and progressive constructions

Finally, let us briefly consider the behaviour of verb-parti-
cle combinations in the remaining two types of constructions
mentioned in par. 2.7 above. First, as was shown in par.
2.7, sentences in which constituents of verb-particle combina-
tions have been gapped become progressively more acceptable
the more transparent the meanings of the combinations con-
cerned are felt to be. Thus, sentence (52a ii) in which a
constituent of a semantically compositional, hence completely
transparent, collocation is gapped, is completely acceptable
to speakers of Afrikaans. Sentence (52b ii), in which a con-
stituent of a semantically noncompositional, but still trans-
parent, verb-particle combination is gapped is slightly less
acceptable. By contrast, sentence (52c ii) in which a con-
stituent of a noncompositional, semantically nontransparent,
verb-particle combination is gapped, is completely unaccept-
able.

(52)(a) i. *Party mense <u>kom</u> <u>in</u> en ander <u>kom</u> <u>uit</u>.*
             some   people come in and others come out
             'Some people come in and others come out.'

        ii. *Party mense <u>kom</u> <u>in</u> en ander ____ <u>uit</u>.*
             some   people come in and others   out

    (b) i. *In die lente <u>kom</u> die   bloeisels <u>uit</u> en <u>kom</u>*
             in the spring come the.   blossoms   out and come
             die   blomme <u>op</u>.
             the   flowers up
             'In the spring blossoms come out and flowers grow.'

        ii. ?*In die lente <u>kom</u> die bloeisels <u>uit</u> en ____ die*
             in the spring come the blossoms   out and   the
             blomme   <u>op</u>.
             flowers   up

    (c) i. *Een van die beseerdes <u>kom</u>   <u>by</u> maar die ander*
             one of the injured   comes to but the other
             een <u>kom</u>   <u>om</u>.
             one comes around
             'One of the injured regains consciousness, but
             the other dies.'

        ii. **Een van die beseerdes <u>kom</u>   <u>by</u> maar die ander*
             one of the injured   comes to but the other
             een ____   <u>om</u>.
             one   around

Note, first of all, that the collocations *in + kom* and *uit +
kom* in (52a) could be analyzed as phrasal PP-V strings. Thus,
for instance, *in* and *uit* can undergo PP-preposing, as shown in
(53).

(53)(a) *<u>In</u> <u>kom</u> n̩ mens   net   met n̩ gestoei.*
         in comes a person only with a fight
         'One gets in only by fighting.'

(b) *Uit* sal *die mense moet* kom.
out will the people must come
'The people will have to come out.'

By contrast *uit + kom, op + kom, by + kom,* and *om + kom* in (52b)
and (52c) must be assumed to be verb-particle combinations.
That is, they must be analyzed as compound verbs as evidenced,
for instance, by the fact that the particles of these combi-
nations cannot be preposed. Thus, consider (54).

(54)(a) ? *Uit* sal *die bloeisels moet* kom.
out will the blossoms must come
'The blossoms will have to come out.'

(b) * *Op* sal *die blomme moet* kom.
up will the flowers must come
'The flowers must come up.'

(c) * *By* sal *die beseerdes wel* kom.
to will the injured indeed come
'The injured will eventually regain consciousness.'

(d) * *Om* sal *die beseerdes wel* kom.
around will the injured indeed come
'The injured will eventually die.'

Thus, sentences such as (52b ii) and (52c ii) differ in ac-
ceptability, although a constituent of a verb-particle combi-
nation has been gapped in both cases. This would appear to
indicate that it is their lack of semantic transparency rather
than the (assumed) fact of their being assigned a compound
word structure by the grammar, which is responsible for the
syntactic cohesiveness displayed by verb-particle combinations
with regard to the deletion rules responsible for gapping phe-
nomena. Parts of syntactically complex words may indeed be
deleted under certain conditions, as has often been pointed
out.[37]

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One of the constraints on the applicability of deletion rules
in natural languages is the so-called Recoverability Condition
which requires, amongst other things, that an element of a P-
marker may be deleted only if it is identical to some other
element in the P-marker.[38]   Now, verb-particle combinations
have been shown to be characteristically noncompositional in
meaning. Yet they differ in degree of noncompositionality.
It could be argued that the meanings of the constituents of
semantically nontransparent verb-particle combinations, unlike
those of the more transparent ones, are semantically under-
determined --- see the discussion in par. 2.4 above. And
if a constituent of a verb-particle combination could not be
said to have a fully determined meaning, then there could be
no question of its being identical in the intended sense to
another constituent whose meaning is similarly underdetermined.
The gapping of a constituent of a semantically nontransparent
verb-particle combination could therefore be argued to violate
the Recoverability Condition. In that case, the cohesiveness
of verb-particle combinations with respect to Gapping could be
accounted for without reference to a principle such as the
Lexical Integrity Hypothesis.

Second, verb-particle combinations, but not phrasal PP-V
strings, were shown to occur in the position following *aan
die/'t* in progressive constructions. This property of verb-
particle combinations in Afrikaans was illustrated in (11)
above. A single example is presented here for ease of refe-
rence. Thus consider the sentences in (55). Whereas sen-
tence (55a i) in which the particle *af* is separated from its
verb by *aan die/'t* is unacceptable, sentence (55a ii) in
which both the particle and the verb appear in the position
following *aan die/'t* is acceptable. A PP-V string, by con-
trast, cannot appear in the position following *aan die/'t*,
as evidenced by the unacceptability of (55b ii).

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(55)(a) i. *Hy was by sy maat _af_ aan die/'t _kyk_ toe
he was from his friend off PROGRESSIVE look when

die opsiener   hom vang.
the invigilator him caught

'He was cribbing from his friend when the invigi-
lator caught him out.'

ii. _Hy was by   sy maat   aan die/'t   af + kyk_
he was from his friend PROGRESSIVE off look

toe die opsiener   hom vang.
when the invigilator him caught

(b) i. _Hy was in die skag af   aan die/'t   kyk_ toe
he was in the shaft down PROGRESSIVE look when

hy sy   balans   verloor het.
he his balance lost

'He was looking down into the shaft when he lost
his balance.'

ii. *_Hy was aan die/'t   in die skag af   kyk   toe_
he was PROGRESSIVE in the shaft down look when

hy sy   balans   verloor.
he his balance lost

The fact that verb-particle combinations, but not phrasal
PP-V strings, can appear in the position following _aan die/'t_
progressive constructions in Afrikaans could be argued to fol-
low from an analysis such as the one assumed here in a straight-
forward way. On this analysis verb-particle combinations are
assumed to be compound verbs. They are assigned the category
V^0 by the grammar and are therefore expected to be able to
occur in any context in which a syntactically noncomplex con-
stituent of the category V^0 can occur. No additional assump-
tions would have to be made to account for this aspect of the
syntactic behaviour of verb-particle combinations.

This concludes the discussion of the question whether a syn-
tactic compound analysis could account for the syntactic
behaviour of verb-particle combinations in Afrikaans. As in-

dicated at the start of the discussion, the syntactic beha-
viour of verb-particle combinations poses two problems for a
syntactic compound analysis. First, given the unavailability
of a principle such as the Lexical Integrity Hypothesis within
the framework of a general theory of syntactic word formation,
the syntactic cohesiveness of verb-particle combinations can-
not be argued to follow from the mere fact of their being
dominated by the category X^0. Hence, this property of verb-
particle combinations would have to be argued to follow from
other, independently motivated grammatical principles. It was
then shown that

(56)(a)   the inability of PP-preposing and PP-over-V to move
the nonhead constituent of a verb-particle combina-
tion could be argued to follow from the ECP, given
current definitions of notions such as 'government',
'proper government', and 'barrier';

   (b)   the syntactic cohesiveness of verb-particle combi-
nations with respect to V-raising could be accoun-
ted for by assuming that V-raising affects a nonmini-
mal projection of V, the content of the notion 'non-
minimal projection' to be made precise;

   (c)   the syntactic cohesiveness of verb-particle combi-
nations with respect to Gapping could be argued to
follow from the Recoverability Condition; and

   (d)   the ability of particles to appear adjacent to the
verb in progressive constructions could be argued to
follow straightforwardly from the claim that verb-
particle combinations are compound verbs.

The second problem that the syntactic behaviour of verb-parti-
cle combinations poses for a syntactic compound analysis is
that of explaining why V-second and *ge-* affixation are not
subject to the principles that could be argued to be respon-
sible for the cohesiveness of verb-particle combinations with
respect to the rules mentioned in (56) and for the cohesive-
ness of compound structures generally. It was shown that

(57)(a) the fact that the head of a verb-particle combina-
          tion rather than the compound verb as a whole is
          affected by V-second and *ge-* affixation could be
          accounted for by assuming the head of the compound
          to be the minimal projection of V;

     (b) the possibility of moving the head of a compound
          verb (by V-second) vis à vis the impossibility of
          moving the head of any other compound X^0 could be
          accounted for by assuming that the presence of
          more than one X^0 node between an antecedent and
          its trace constitutes a barrier either to govern-
          ment or to movement.

In the following paragraph we shall briefly consider the re-
maining properties of verb-particle combinations, once again
with the aim of establishing whether or not any special assump-
tions would need to be made in order to account for the fact
that verb-particle combinations exhibit these properties,
given the syntactic compound analysis outlined above.

6.3.3.2   Other properties

Consider first the ability of verb-particle combinations in
Afrikaans to serve as bases of word formation rules. This
property was illustrated in par. 2.6 above. Examples of pos-
sible complex words in which some of the verb-particle combi-
nations shown in (7) occur as nonhead constituents are provi-
ded in (58).

(58)(a) Derivation (affixes are capitalized):

         $[GE$ $[af$ + $kyk]]_N$ $[[op$ + $gooi]$ $ERY]_N$
         AFFIX off   look   up   throw -ing
         'cribbing'   'vomiting'

$[[deur + bring]\ ER]_N$ $[[oor + skiet\ ]\ \emptyset]_N$

through bring -er   over shoot

'spendthrift'   'left-overs'

$[[in + loop]\ BAAR]_A$ $[[om + gee\ ]\ ERIG]_A$

in   walk -able   for give -y

'cheatable'   'characterized by a tendency
                         to care (too much)'

(b) Compounding:

$[[oor + skiet][kos]]_N$ $[[by + kom][tekens]]_N$

over   shoot food   to   come signs

'left-over food'   'signs of regaining con-
                          sciousness'

$[[op + gooi][siekte]]_N$ $[[onder + sit]\ [hou]]_N$

up   throw sickness   under   put   blow

'vomiting sickness'   'subduing blow'

The bracketings indicated in (58) could be argued to be the
only possible bracketings given a principle of composition-
ality --- see par. 2.6 above. In the case of all the
forms of (58) the noncompositional meaning of the verb-par-
ticle combination is a constituent in the composite meaning
of the derived or compound word. Given the principle of
compositionality, the verb-particle combination should there-
fore also be a constituent in the structural representation
assigned to these forms.

The ability of verb-particle combinations to occur as non-
head constituents of compound and derived words could be
argued to pose no problems for a syntactic compound analysis.
If it is assumed that the same set of rules and principles
are responsible for the formation of both compound and de-
rived words, it follows that structures such as (19) may
serve as bases for further compounding and for the attach-
ment of affixes, subject of course to lexical properties of
the relevant affixes, e.g. subcategorization properties.[39]

Second, consider the characteristic tendency of verb-particle
combinations to have noncompositional meanings --- see par.
2.4 --- and idiosyncratic subcategorization properties ---
see par. 2.5. Each of the verb-particle combinations in (7)
above has been claimed to have a noncompositional meaning.
The meanings shown in (59a) could be considered metaphorical,
hence not completely nontransparent, whereas those shown in
(59b) are clearly idiomatic. Yet neither type of meaning is
fully predictable on the basis of the literal meanings of
the constituents of the verb-particle combinations concerned
and the relation between these constituents.

(59)(a) *af + kyk*   *voor + hou*
         off   look   before · hold
        ' to crib/copy'   'to present'

         onder + sit   *by + kom*
         under put   to   come
         'to overpower/subdue' 'to regain consciousness'

    (b) *uit + vaar*   *in + loop*
         out   fare/sail   in   walk
         'to rail (at)'   'to cheat'

         om + gee   *deur + bring*
         for give   through bring
         'to care'   'to squander (money)'

An illustration of the ability of verb-particle combinations
to have subcategorization properties that differ from those
of their verbal head is provided in (60).

(60)(a) i. *Hy kyk   NA ŋ TV-program.*
             he looks at a TV programme
             'He watches a TV programme.'

        ii. *Hy kyk   BY   sy maat   af.*
             he looks from his friend off
             'He cribs from his friend.'

(b) i. *Die skelm* *loop* *(vinnig/saggies/op sy tone)*.
         the crook walks (fast /quietly/on his toes)
         'The crook walks (fast/quietly/on his toes).'

   ii. *Die skelm* *loop* HOM *(vinnig/saggies/op sy tone)*.
         the crook walks him (fast /quietly/on his toes)
         'The crook walks him (fast/quietly/on his toes).'

  iii. *Die skelm* *loop* *in*.
         the crook walks in
         'The crook cheats.'

   iv. *Die skelm* *loop* HOM *in*.
         the crook walks him in
         'The crook cheats him.'

It is clear from (60a) that the verb-particle combination *af-kyk* and its verbal head *kyk* subcategorize for different preposi-tions. The sentences in (60b) show that, whereas the verb-particle combination *inloop* takes an obligatory direct object NP, its verbal head *loop* is an intransitive verb.

The characteristic semantic noncompositionality and (often) idiosyncratic subcategorization of verb-particle combinations would pose no problem for the analysis of verb-particle com-binations outlined above. Both Sproat (1985:493) and Lieber (to appear:6) assume that all idiosyncratic forms of a lan-guage, be they morphemes, roots, simple words, complex words, phrases, or sentences, must be listed in the lexicon. Their lexical entries could thus be argued to display their idio-syncratic properties, including, where relevant, noncomposi-tional meanings and idiosyncratic subcategorization. Insofar as they have regular syntactic, phonological, and semantic properties, these properties would be specified by the syn-tactic, phonological, and semantic rules of the language.[40]
The fact that (some of) the morphosyntactic properties of verb-particle combinations could be argued to be predictable on the basis of syntactic rules and principles, would not be inconsistent with the claim that they are listed in the lexi-

con by virtue of having noncompositional meanings and/or
idiosyncratic subcategorization properties. Neither would
the fact of their being listed in the lexicon rule out the
possibility of their having regular syntactic and semantic
properties that could be accounted for on the basis of an
analysis such as that outlined above.

Third, verb-particle combinations were shown in par. 2.8 to
display a stress pattern similar to that of compound words.
That is, they have primary stress on the nonhead constituent,
as shown in (61) where "ˊ" indicates primary stress.

(61)   áf + kyk   óp + gooi

          vóor + hou   óm + gee

          ín + loop   ónder + sit

I shall do no more than note that an analysis on which verb-
particle combinations are claimed to be compounds is not in-
consistent with the facts shown in (61).

6.3.4   Some empirical consequences

In this paragraph some of the predictions made by a syntactic
compound analysis about possible compound verb structures in
Afrikaans will be examined in more detail.

Recall that Lieber's generalized set of syntactic principles
were shown in par. 6.3.2 to predict that all of the struc-
tures in (62) should be possible verb compound structures in
Afrikaans, whereas the structures in (63) should be ruled
out as impossible.[41]

(62)(a) V^0 (b) V^0

          P^n V^0 N^n V^0

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(c) V^0 → A^n, V^0 (d) V^0 → V^n, V^0

(63)(a) V^0 → V^0, P^n (b) V^0 → V^0, N^n

(c) V^0 → V^0, A^n (d) V^0 → V^0, V^n
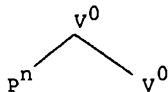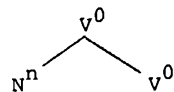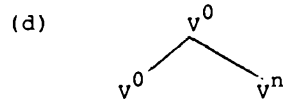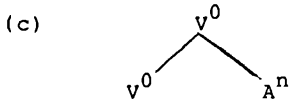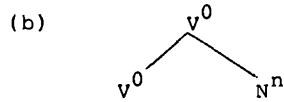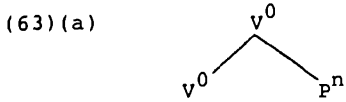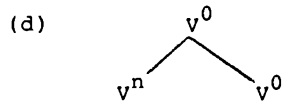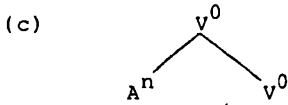
Let us consider these predictions. In addition to verb-par-
ticle combinations, which have been assumed to be instances
of (62a), Afrikaans also has compound verbal expressions such
as the following:

(64)(a) <u>Nominal constituent + V</u>

    toneel + speel   *geluk + wens*
    play   'act   joy/luck wish
    'to play-act'   'to congratulate'

    tuin + maak   *vis + vang*
    garden make   fish catch
    'to garden'   'to angle'

  (b) <u>Adjectival constituent + V</u>

    mooi + maak   *dood + skiet*
    pretty make   dead   shoot
    'to tittivate'   'to shoot dead'

    seer + kry   *toe + sluit*
    hurt get   closed lock
    'to get hurt'   'to lock'

(c)   Verbal constituent + V

    ry + loop   *skater + lag*
    ride walk   peal   laugh
    'to hitch-hike'   'to shout with laughter'

    sit + lê   *draf + stap*
    sit   lie   jog   walk
    'to lounge'   'to jogtrot'

There is evidence that, like verb-particle combinations, ex-
pressions such as those exemplified in (64) should be assigned
a compound structure. Thus, these expressions can appear in
the position following *aan die/'t* in progressive constructions,
a position which can be occupied only by bare infinitives and
not by phrases, as we have seen. Thus, compare (65).

(65)(a) i. *Sy is alweer aan 't   tuin + maak.*
             she is again   PROGRESSIVE garden make
             'She is gardening again.'

         ii. **Sy is alweer aan 't   'n tuin   maak.*
             she is again   PROGRESSIVE   a garden make
             'She is laying on a garden again.'

    (b) i. *Hy is die deure aan 't   toe + sluit.*
             he is the doors PROGRESSIVE closed lock
             'He is locking the doors.'

         ii. **Hy is die deure aan 't   met die sleutel sluit.*
             he is the doors PROGRESSIVE with the key   lock
             'He is locking the doors with the key.'

    (c) i. *Hulle is nog steeds aan 't   ry + loop.*
             they are yet still PROGRESSIVE ride walk
             'They are still hitch-hiking.'

         ii. **Hulle is nog steeds aan 't   stadig loop.*
             they are yet still PROGRESSIVE slowly walk
             'They are still walking slowly.'

Also, the lefthand constituent of the expressions in (64) do
not freely allow specifiers, prehead modifiers, and comple-
ments, a property which is assumed by, e.g., Fabb (1984:143),
Sproat (1985:par. 3.3), and Di Sciullo and Williams (1987:
50, 80) to be related to the fact that the constituents of
syntactically complex words are typically nonreferential.[42]
Thus, compare (65) above with (66) immediately below.

(66)(a) *Sy is alweer aan 't   [haar tuin] + maak.
        she is again PROGRESSIVE her garden   make.

   (b) *Hy is die deure aan 't   [hermeties   toe] + sluit.
        he is the doors PROGRESSIVE hermetically closed lock

   (c) *Hulle is nog steeds aan 't   [in 'n motor ry]
        they are yet still PROGRESSIVE in a car   drive
        + loop.
          walk

Another indication that the lefthand constituents of, at
least, the combinations in (64a) are nonreferential is the
fact that they are characteristically assigned a generic
rather than a specific interpretation. Thus, toneel ('play')
in toneelspeel ('to play-act') refers not to a specific play
but, generically, to the kind of object denoted by the word
toneel; tuin ('garden') in tuinmaak ('to garden') refers not
to any specific garden, but to gardens in general, etc. The
impossibility of assigning the nominal lefthand constituents
of these combinations a nongeneric interpretation can only be
explained by assuming that the nominal constituent is an N
rather than an NP. Since reference is associated with maxi-
mal projections (hence NP) according to, e.g., Di Sciullo and
Williams (1987:50) and Sproat (1985:336), assignment of the
category N^0 to the nominal constituent of the combinations in
(64a) predicts their nonreferentiality, hence their generic
interpretation. A compound analysis of the combinations in
(64a) above therefore could be argued to be the only analysis

that can account for the generic interpretation of the nominal
constituent of these combinations. Although the nonreferen-
tiality of the combinations in (64b, c) cannot be demonstrated
as strikingly, it is clear that the properties of these combi-
nations are otherwise identical to those of the combinations
in (64a). It could therefore be argued that the former combi-
nations should be assigned the same type of analysis, i.e. a
compound analysis, as the combinations in (64a). Hence, the
predictions shown in (62a-d) could be concluded to be correct
at least in those cases where the category level of the non-
head constituent is X^0.

Before considering the question of whether phrases can occur
as nonhead constituents of compound verbs, as predicted on
Lieber's theory, let us digress slightly to consider a conse-
quence of the claim that NV and AV compounds such as those
exemplified in (64a, b) are compounds. Note that this claim
would pose a further problem for two assumptions made by
Lieber. Recall that Lieber assumes (i) that all complements
are maximal projections --- see (25) above --- and
(ii) that Case can be assigned only within a nonminimal pro-
jection. The lefthand N and A constituents of the compound
verbs in (64a, b), however, could be argued to be complements
of the verbal head. Thus, for example, *vis* ('fish') in *vis-
vang* ('to catch fish/to fish') bears exactly the same thematic
relation to *vang* ('to catch') as does *vis* in the phrase *om n vis
te vang* ('to catch a fish'). That *vis* in *visvang* functions
as a subcategorized complement is also indicated by the fact
that *vang* cannot occur without it, as shown by the ill-formed-
ness of **Ek gaan gou ___ vang* ('I am going to catch quickly').
Similarly, *mooi* ('pretty') in *mooimaak* ('to make pretty/to
tittivate') could be argued to function as a subcategorized
complement by virtue of the fact that *maak* cannot occur with-
out it, as shown by the ill-formedness of **dat sy haar gedurig
___ maak* ('that she is perpetually making herself'). How-
ever, if the N and A constituents of NV and AV compounds were
assumed to be complements, then they would have to be assigned
theta roles. For example, *vis* in *visvang* would have to be as-

signed a Theme role. In order to be assigned a theta role a
constituent must have Case --- see, e.g., (Fabb 1984:42f).
It would have to be concluded, therefore that (i) the left-
hand constituents of compound verbs can be complements and
(ii) Case can be assigned within a minimal projection.

The latter conclusion would be problematic within Lieber's
framework, where any X^0 is assumed to be a minimal projection.
However, this conclusion could be argued to be unproblematic
given a revised definition of the notion 'projection of cate-
gory X^{n}' such as that proposed by Fabb --- see the discus-
sion in par. 6.3.2 above. On the latter definition the com-
pound node X^0 would be a projection of its head X^0. Hence
the compound node X^0 could be argued not to be a minimal pro-
jection and Case assignment to the nonhead constituent of the
compound would not be ruled out. The assumption that the head
X^0 of a compound and not the compound node itself counts as
the minimal projection of X^n has been shown to be required to
account for the behaviour of verb-particle combinations with
regard to V-second and *ge*- affixation as well --- see par.
6.3.3.1.2 above. The fact that it could also serve as a
basis for explaining properties of the nonhead constituent of
NV and AV compounds could be argued to constitute independent
evidence for this assumption.

To return to the main theme of this section, let us consider
the question of whether phrasal constituents can occur in
the nonhead position of compound verbs in Afrikaans as pre-
dicted. This prediction is difficult to test as it is not
clear how an XP-V compound can be distinguished from a phrasal
XP-V sequence. The indications are, however, that the non-
head constituent of a compound verb, cannot be a phrase, as
evidenced by the ill-formedness of the (ii)-sentences in (65)
and the sentences in (66) above.

There are a number of PP-V collocations in Afrikaans that ap-
pear to contradict the claim that XP-V compounds are impossi-
ble in Afrikaans. These collocations exhibit properties

similar to those of verb-particle combinations. A few repre-
sentative examples are provided in (67).

(67)(a) *[ter dood]*_{PP} *[veroordeel]*_V
          to   death   condemn
          'to condemn to death'

   (b)   *[hand + uit]*_{PP} *[ruk]*_V
          hand   out   pull
          'to get out of hand'

   (c)   *[ten laste]*_{PP} *[lê]*_V
          to   burden   lay
          'to hold (someone) responsible for'

   (d)   *[tot niet]*_{PP} *[maak]*_V
          to   void   make
          'to destroy'

In (68) it is shown for *handuit ruk* that collocations such as
those in (68) are syntactically cohesive with regard to V-
raising (68a), PP-preposing (68b), and the progressive con-
struction (68c).

(68)(a) i. *?Die kinders sou dalk [handuit e] kon ruk.*
            the children would perhaps hand out   could pull
            'The children could possibly get out of hand.'

        ii. *Die kinders sou dalk [e e] kon handuit ruk.*
            the children would perhaps   could hand out pull

   (b) i. **Handuit sal hulle tog seker nie ruk nie!*
            hand out will they   surely not pull not
            'They will surely not get out of hand!'

        ii. *Hulle sal tog seker nie handuit ruk nie!*
            they will   surely not hand out pull not

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(c)  i. *Die kinders  is  handuit  aan 't     ruk.
        the children are hand out PROGRESSIVE pull
        'The children are getting out of hand.'

    ii.  Die kinders  is  aan 't      handuit  ruk.
        the children are PROGRESSIVE hand out  pull
```

On the strength of similarities such as these between the be-
haviour of PP-V collocations such as those exemplified in (67)
and that of verb-particle combinations, it could be argued
that the former collocations should be analyzed as compound
verbs as well. It should be noted, however, that there are
only a handful of PP-V collocations such as those of (67)
which exhibit the syntactic cohesiveness of compound verbs in
Afrikaans. The majority of PP-V sequences are syntactically
noncohesive and therefore analyzable as phrases. This point
can be illustrated by comparing the syntactic behaviour of
the collocation [uit die hand]_PP[verkoop]_V in (69) with that
of handuit ruk in (68).

```
(69)(a)  i.  Ons sou   die motor [uit die hand e] kon   verkoop.
            we  would the car    out the hand    could sell
            'We could possibly sell the car privately.'

       ii. *Ons sou   die motor [e e] kon    uit die hand
            we  would the car          could out the hand
            verkoop.
            sell

   (b)  i.  Uit die hand kan jy  dit nie verkoop nie!
            out the hand can you it  not sell    not
            'You cannot sell it privately!'

       ii.  Jy  kan dit nie uit die hand verkoop nie.
            you can it  not out the hand sell    not

   (c)  i.  Hy is die motor uit die hand aan't       verkoop.
            he is the car   out the hand PROGRESSIVE sell
            'He is selling the car privately.'
```

> ii. *_Hy is die motor aan't_ _uit die hand_ _verkoop_.
>   he is the car   PROGRESSIVE out the hand sell

Apart from an unproductive class of PP-V collocations such as
those exemplified in (67), it appears, therefore, that Afri-
kaans does not have compound verbs of which the nonhead con-
stituent is a phrase. This is contrary to the prediction made
by Lieber's generalized syntactic principles set out in par.
6.3.2 above. By contrast, the prediction that compound verbs
with the structures shown in (63) are impossible in Afrikaans
appears to be correct. No leftheaded compound verbs exist in
Afrikaans.

It appears, therefore, that, apart from verb-particle combi-
nations, only complex verbal expressions with a noun, adjec-
tive or verb as lefthand constituent could possibly be argued
to be compound verbs in Afrikaans. If they were to be assigned
the structure of compound verbs, like verb-particle combina-
tions, they would be predicted to display exactly the same
syntactic behaviour as the latter combinations. This predic-
tion is borne out, at least with respect to NV and AV combi-
nations in Afrikaans.   NV and AV combinations behave like
verb-particle combinations in that their constituents are
obligatorily separated by V-second, as shown in (70), they
take the inflectional affix _ge-_ internally, as shown in (71),
and their constituents are adjacent after V-raising, as illus-
trated in (72).

(70)(a) i. _Sy_ _maak_ _in die lente_ _tuin_.
             she makes in the spring garden
             'She gardens in spring.'

     ii. *_Sy_ _tuinmaak_ _in die lente_.
             she gardens in the spring

    (b) i. _Hy_ _sluit_ _al_ _die deure_ _toe_.
             he locks all the doors closed
             'He locks all the doors.'

ii. *Hy _toesluit_ al   die deure.
    he   locks   all the doors

(71)(a) i. Sy het in die lente _tuin_ + _GEmaak_.
             she has in the spring garden AFFIX make
             'She gardened in springtime.'

     ii. *Sy het in die lente _GE_ + _tuinmaak_.
             she has in the spring AFFIX garden

   (b) i. Hy het al die deure _toe_ + _GEsluit_.
            he has all the doors closed AFFIX lock
            'He has locked all the doors.'

       ii. *Hy het al die deure _GE_ + _toesluit_.
            he has all the doors AFFIX   lock

(72)(a) i. Sy sal altyd [e e] bly   _tuin_ + _maak_.
             she will always   keep on garden   make
             'She will always keep on gardening.'

     ii. ?Sy sal altyd [_tuin_ e] bly   _maak_.
             she will always   garden   keep on   make

   (b) i. Hy het [al die deure e e] bly   _toe_ + _sluit_.
            he has all the doors   closed keep on   lock
            'He kept on locking all the doors.'

       ii. Hy het [al die deure _toe_ e] bly   _sluit_.
            he has all the doors closed   keep on   lock

A small number of NV combinations in Afrikaans do not behave
as predicted. Consider, for example, the following:

(73)(a) i. Hy _hand_ + _groet_ almal   wat hy teëkom.
             he hand   greets everybody that he meets
             'He greets everybody he meets by hand.'

     ii. *Hy _groet_ almal   wat hy teëkom _hand_.
             he greets everybody that he meets   hand

(b) i. *Die perd* <u>*bok*</u> + <u>*spring*</u> *wild.*
     the horse buck jumps wildly
     'The horse bucks wildly.'

   ii. **Die perd* <u>*spring*</u> *wild* <u>*bok.*</u>
      the horse jumps wildly buck

(c) i. *Hulle* <u>*brein*</u> + <u>*spoel*</u> *die gevangenes.*
     they brain wash the prisoners
     'They brainwash the prisoners.'

   ii. **Hulle* <u>*spoel*</u> *die gevangenes* <u>*brein*</u>.
      they wash the prisoners brain

In each of the NV combinations above, both constituents, rather than the verb alone, are fronted by V-second. These combinations also do not take the inflectional affix *ge-* internally. Thus we have (74).

(74)(a) *GE[hand + groet]*   -   **[hand][GE + groet]*
      'greeted by hand'

  (b) *GE[bok + spring]*   -   **[bok][GE + spring]*
      'bucked'

  (c) *GE[brein + spoel]*   -   **[brein][GE + spoel]*
      'brainwashed'

In contrast to NV combinations such as those of (64a) which occur productively in Afrikaans, the combinations exemplified here are highly restricted in number and cannot be productively formed. Also, they clearly have metaphorical meanings. It could be argued therefore that they are lexicalized compounds which, as a result of their being listed in the lexicon, have also acquired the idiosyncratic property of syntactic cohesiveness. This would account for the fact that they differ in syntactic behaviour from NV compounds, such as those of (64a), with which they are structurally identical.

A first potential problem with such an account of the facts
in (73) and (74) would be that it could not serve as a basis
for explaining why lexicalization results in syntactic cohe-
siveness in the case of NV compounds, but not in the case of
verb-particle combinations which have been assumed to be PV
compounds. A second potential problem arises from the fact
that, in addition to NV compounds such as those exemplified
in (73)-(74), the class of syntactically cohesive compound
verbs also includes all the VV compounds and a number of PV
compounds. Thus, VV combinations such as those of (64c) do
not pattern like verb-particle combinations with regard to
V-second and inflectional affixation, as shown in (75) and
(76) respectively.

(75)(a) *Hy <u>ryloop</u>   na sy meisie toe.*
         he hitch-hikes to his girl   to
         'He hitch-hikes to (where) his girlfriend (is).'

   (b) **Hy <u>loop</u> na sy meisie toe <u>ry</u>.*
       he walks to his girl   to ride

(76)(a) *Hy het <u>GE</u> + <u>ryloop</u>.*
         he has AFFIX hitch-hike
         'He hitch-hiked.'

   (b) **Hy het <u>ry</u> + <u>GEloop</u>*
       he has ride   AFFIX walk

Consider also the PV combinations shown in (77).

(77)(a) *Hy <u>oor</u> + <u>werk</u> homself heeltemal.*
         he over work himself completely
         'He completely overworks himself.'

   (b) *Hulle <u>om</u>   + <u>seil</u> eenvoudig die beperkings.*
       they around sail simply   the restrictions
       'They simply circumvent the restrictions.'

(c) *Sy* <u>*deur*</u> + <u>*boor*</u> *hom met haar blik.*
     she through drills him with her   look
     'She casts him a piercing look.'

(d) *Vinnige optrede* <u>*voor*</u> + <u>*kom*</u> *ongelukke.*
     quick action before   comes accidents
     'Quick action prevents accidents.'

The underlined syntactically complex verbs in (77a-d) resemble
verb-particle combinations in that they consist of a preposi-
tion/adverb/particle and a verb. However, the combinations in
(77) differ from verb-particle combinations in that their con-
stituents are not syntactically separable. Thus, it is clear
from (77) that both the preposition and the verb are fronted
by the rule of V-second in root clauses. In addition, these
verbs do not take the inflectional affix *ge-* internally, as
shown in (78).

(78)(a) *Hy het homself heeltemal* <u>*oorwerk*</u>/*<u>*oorgewerk*</u>.
         he has himself completely overworked
         'He completely overworked himself.'

  (b) *Hulle het eenvoudig die beperkings*   <u>*omseil*</u>/*<u>*omgeseil*</u>.
       they have simply   the restrictions circumvented
       'They simply circumvented the restrictions.'

  (c) *Sy het hom met haar blik* <u>*deurboor*</u>/*<u>*deurgeboor*</u>.
       she has him with her   look pierced
       'She pierced him with her look.'

  (d) *Haar vinnige optrede het 'n ongeluk* <u>*voorkom*</u>/*<u>*voorgekom*</u>.
       her quick   action has an accident prevented
       'Her quick action prevented an accident.'

The question is how the syntactic cohesiveness of the VV and
PV combinations exemplified in (75)-(76) and (77)-(78) respec-
tively could be accounted for given a syntactic compound ana-
lysis such as that outlined above. A first possibility would

be to argue, exactly as in the case of the inseparable NV
combinations in (73)-(74) above, that the combinations in
question have become lexicalized as a result of having ac-
quired a specialized meaning by metaphorical extension.
Their syntactic cohesiveness could then be argued to be the
result of their lexicalization. Once again, however, it
could be argued that such an account would be problematic
because it cannot explain why lexicalization results in
syntactic cohesiveness in the case of VV compounds and the
PV compounds in question, but not in the case of verb-parti-
cle combinations.

In the case of VV and PV compounds, such an account would be
problematic for other reasons as well. First, as regards VV
compounds, notice that it is not just a restricted subset of
VV compounds that exhibit the exceptional property in ques-
tion. All VV compounds are syntactically cohesive in Afri-
kaans. Moreover, not all VV compounds have metaphorical or
otherwise noncompositional meanings by virtue of which they
could be claimed to have become lexicalized. For example,
VV compounds with a coordinative meaning, such as those shown
in (79), have a fully compositional meaning which could be
claimed not to require listing in the lexicon.

(79)   *sit + lê*   *huil + kreun*

        sit   lie   cry   groan

        'to lounge'   'to cry and groan simul-
                                  taneously'

        stoot + trek   *sê · + vra*

        push   pull   say   ask

        'to push and pull   'to say and ask simul-
        simultaneously'   taneously'

Thus it appears (i) that there are no VV compounds that dis-
play the syntactic noncohesiveness that all compound verbs
are predicted to display on a syntactic compound analysis,
and (ii) that some syntactically cohesive VV compounds are

fully compositional in meaning. Facts such as these could
not be explained by claiming that the compounds in question
have become lexicalized and, hence, syntactically cohesive
by virtue of having acquired a metaphorical meaning.

Second, in addition to being syntactically cohesive, PV com-
binations such as those in (77)-(78) all exhibit an idiosyn-
cratic stress pattern, a fact that could not be explained by
an account in terms of lexicalization analogous to that pro-
vided for inseparable NV compounds. Thus, notice that the
stress pattern of PV combinations such as those of (77)-(78)
above differs systematically from that of verb-particle com-
binations. The stress pattern of the PV combinations dis-
cussed above is shown in (80a) and that of the corresponding
verb-particle combinations is shown in (80b), where "ˆ" in-
dicates primary stress.

(80)(a) *oor + wérk*   (b) *óor + werk*
         over   work   over   work
         'to overwork'   'to work over'

         deur + bóor   *déur + boor*
         through drill   through drill
         'to pierce'   'to drill through'

         om + séil   *óm + seil*
         around sail   around sail
         'to circumvent'   'to circumnavigate'

         voor + kóm   *vóor + kom*
         before   come   before   come
         'to prevent'   'to get to the front'

It could be argued that items in the lexicon may acquire
idiosyncratic stress properties in the same way that they may
acquire idiosyncratic syntactic properties such as syntactic
cohesiveness. However, an account in terms of lexicalization
would not be able to explain why all and only this particular

set of lexicalized PV compounds acquired the property in
question. For, notice that neither the NV nor the VV com-
pounds that could be argued to be lexicalized exhibit the
stress pattern in question.

An account of the problematic properties of inseparable NV,
VV, and PV combinations in terms of lexicalization would
therefore have to be concluded to be problematic. First,
such an account could not explain why only these combina-
tions, and not lexicalized verb-particle combinations,
acquire the idiosyncratic property of syntactic cohesiveness.
Second, such an account could not explain why all VV com-
pounds, including those with a fully compositional meaning,
are lexicalized. And, third, such an account could not ex-
plain why all and only inseparable lexicalized PV compounds
acquire an idiosyncratic stress pattern.

In the case of inseparable PV compounds, there could be
argued to be a possible alternative account to the one out-
lined above. On this alternative account inseparable PV
strings would be argued to be derived words rather than
compounds. If they could be successfully argued to be de-
rived words rather than compounds, their syntactic cohesive-
ness would no longer pose a problem for the syntactic com-
pound analysis outlined above. Three pieces of evidence
could be adduced in support of the claim that inseparable
PV strings should be analyzed as derived words rather than
compounds. The first piece of evidence is their syntactic
cohesiveness. On the syntactic compound analysis assumed
here, compound verbs are predicted to be syntactically non-
cohesive under certain conditions. However, the constituents
of the PV strings in question cannot be separated under the
relevant conditions. By contrast, their syntactic cohesive-
ness would follow from an analysis on which the lefthand
constituent was assumed to be a bound morpheme, e.g. a pre-
fix, that was lexically specified to be a sister to a cate-
gory of a certain type, a verb in this case, at all syntac-
tic levels of representation. [43]

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The second piece of evidence that could be adduced in support
of the claim that inseparable PV strings should be analyzed
as derived words concerns their characteristic stress pattern.
Thus, compare (81a) which shows the stress pattern of the
PV combinations in (77)-(78) above, and (81b) which shows the
stress pattern of prefixed words in Afrikaans.

(81)(a) $[[oor][wérk]_V]_V$ (b) $[[be][wérk]_V]_V$
           over work   be- work
           'to overwork'   'to cultivate'

         $[[deur][bóor]_V]_V$ $[[her][bóor]_V]_V$
           through drill   re-   drill
           'to pierce'   'to redrill'

         $[[om][séil]_V]_V$ $[[ver][séil]_V]_A$
           around sail   AFFIX sail
           'to circumvent'   'mixed up (with)'

         $[[voor][kóm]_V]_V$ $[[ont][kóm]_V]_V$
           before come   un-   come
           'to prevent'   'to escape'

It is clear from a comparison of (81a) and (81b) above that
the stress properties of inseparable PV strings would be con-
sistent with the claim that they are prefixed words.

A third piece of evidence that could be adduced in support
of this claim concerns the inflectional properties of inse-
parable PV strings. Thus, it was shown in (78) above that
the inflectional affix ge- can be deleted in the past parti-
cle forms of the combinations in question. This property too
is characteristic of prefixed words in Afrikaans, as illus-
trated for the PV strings in (82a) and for prefixed words in
(82b).[44]

(82)(a) $[ge\text{-}[oorwérk]_V]_{Vprt}$ - $[\emptyset \ [oorwérk]_V]_{Vprt}$

        $[ge\text{-}[deurbóor]_V]_{Vprt}$ - $[\emptyset \ [deurbóor]_V]_{Vprt}$

        $[ge\text{-}[omséil]_V]_{Vprt}$ - $[\emptyset \ [omséil]_V]_{Vprt}$

        $[ge\text{-}[voorkóm \ ]_V]_{Vprt}$ - $[\emptyset \ [voorkóm]_V]_{Vprt}$

    (b) $[ge\text{-}[bewérk]_V]_{Vprt}$ - $[\emptyset \ [bewérk]_V]_{Vprt}$

        $[ge\text{-}[herbóor]_V]_{Vprt}$ - $[\emptyset \ [herbóor]_V]_{Vprt}$

        $[ge\text{-}[ontkóm]_V]_{Vprt}$ - $[\emptyset \ [ontkóm]_V]_{Vprt}$

Given the similarities mentioned above between inseparable
PV strings such as those exemplified in (77)-(78) on the one
hand and prefixed words on the other hand, it could be argued
that the PV strings in question should be analyzed as derived
words and not as compounds. On such an analysis, the preposi-
tions occurring as the lefthand constituents of the relevant
PV strings would be claimed to be prefixes. The claim that
the prepositions in question are prefixes which are homopho-
nous with a preposition or adverb has often been made with
respect to the corresponding Dutch and German forms.[45] The
claim is not unproblematic, however.

First, as is clear from a comparison of the (a)- and (b)-
forms in (80), every inseparable PV string is related in
meaning to a corresponding verb-particle combination. Speci-
fically, the meaning of the inseparable PV string could be
argued to be a metaphorical extension of the meaning of the
related verb-particle combination. No other (class of) de-
rived words is related to (a class of) compound words in the
same way. Claiming that the prepositional constituents of
inseparable PV strings are prefixes, would entail claiming
that the PV strings in which they occur are unrelated to the
corresponding verb-particle combinations, clearly an unde-
sirable consequence. Second, if prepositions/adverbs such as
oor, om, deur, and *voor* were to be assigned the status of pre-
fixes, they would constitute a unique class of affixes in

Afrikaans. No other affixes in Afrikaans have been claimed
to occur as free morphemes as well. An account of the pro-
perties of inseparable PV compounds based on the claim that
the prepositions *oor*, *om*, *deur*, and *voor* occurring in such
compounds are prefixes, would therefore have to be concluded
to be potentially problematic as well.

In the absence of a well-motivated account of the problematic
properties of inseparable NV, VV, and PV compounds in Afri-
kaans, these properties would have to be assumed to be stipu-
lated in the lexicon. This was shown to be an undesirable
step, particularly in the case of inseparable VV and PV com-
pounds.

Thus, on the one hand, a syntactic compound analysis could
be shown to provide a basis for predicting both the existence
and the properties of separable NV and AV compounds in Afri-
kaans. On the other hand, however, it has been shown not to
provide a well-motivated basis for explaining either the
existence or the properties of inseparable NV, VV, and PV
compounds such as those discussed above.

6.3.5 Summary of findings

The aim of par. 6.3 has been to outline a possible analysis
of verb-particle combinations in Afrikaans that would be con-
sistent with a conception of the relationship between mor-
phology and syntax such as that accepted by Sproat (1985,
1987) and Lieber (to appear). On the general theory of syn-
tactic word formation accepted by them, the same syntactic,
phonological, and semantic rules and constraints that account
for the properties of phrases and sentences are assumed to be
able to account for the properties of syntactically complex
words as well.

In par. 6.3.1 evidence concerning the syntactic properties
of verb-particle combinations in Afrikaans was presented in

support of the claim (8a) that verb-particle combinations
should be analyzed as compound verbs. The remainder of par.
6.3 was devoted to a critical examination of the kinds of
arguments that would have to be presented to support the
claim (8b) that, as compound verbs, verb-particle combina-
tions are syntactic constructs, the morphosyntactic proper-
ties of which must be accounted for by syntactic rules and
constraints. The theoretical devices proposed by Lieber (to
appear) to account for the morphosyntactic properties of
compound word structures were considered in par. 6.3.2. They
were summarized in (31) above. Every one of the modifications
proposed by Lieber to generally accepted principles of phrase
structure was argued to be problematic on either empirical or
theoretical grounds.

The question of the adequacy of a syntactic compound analy-
sis as a basis on which to account for the characteristic
cluster of properties exhibited by verb-particle combina-
tions' was addressed in par. 6.3.3. A detailed examination
was made of the assumptions that would have to be made in
order to argue

(i)   that an account of the cohesiveness of compound
        words with regard to deletion and movement rules
        could be given on the basis of a syntactic com-
        pound analysis that did not assume a principle
        such as the Lexical Integrity Hypothesis, and

(ii)   that a syntactic compound analysis could serve as
        a basis for explaining the difference in beha-
        viour exhibited by verb-particle combinations with
        regard to movement rules such as PP-preposing and
        PP-over-V (and possibly V-raising) on the one hand,
        and the rule of V-second on the other hand.

It was argued that both the account of (i) and the explana-
tion of (ii) could be given partly in terms of independently
motivated syntactic notions such as 'trace', 'antecedent',
'government', 'proper government' and 'barrier', the syntactic

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rule Move α , the syntactic parameter specifying the possi-
ble projection levels of V at which V-raising may apply, a
syntactic constraint such as the ECP, and a semantic con-
straint such as the Recoverability Condition. However, it
became clear that, in addition to these independently moti-
vated theoretical notions, rules and conditions, a number
of notions/conditions would have to be assumed for which no
such independent motivation existed and which could therefore
be argued to be problematic. Thus, it was argued that, in
order to provide the account of (i) and the explanation of
(ii), the additional language-specific assumptions of (83)
and general linguistic assumptions of (84) would have to be
made.

(83)(a)   The constituent moved by the rule of PP-over-V
          in Afrikaans must be adjoined to VP (par.
          6.3.3.1.1).

   (b)   V-raising affects a nonminimal projection of V
          in Afrikaans (par. 6.3.3.1.2).

(84)(a)   The head of a syntactically complex category X^0
          rather than X^0 itself is the minimal projection
          of X^n (par. 6.3.3.1.2).

   (b)   A notion 'nonminimal projection of V' can be de-
          fined in terms of which the correct predictions
          will be made about possible and impossible V-
          raising constructions in Afrikaans.

   (c)   I, the head of INFL, assigns a theta role to its
          complement VP (par. 6.3.3.1.2).

Moreover, it was argued in par. 6.3.3.1.2, that the diffe-
rence in syntactic cohesiveness between compound verbs on the
one hand, and compound nouns and adjectives on the other hand
could be explained only if the following assumption was made:

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(85)   The notion 'barrier' can be defined in such a
          way that the presence of more than one X^0 node
          between an antecedent and its trace would con-
          stitute a barrier to either government or move-
          ment.

The assumptions (84a), (84b) and (85) in particular could be
argued to require a nontrivial modification of current syn-
tactic theory on which it is claimed that (i) the notion 'pro-
jection of X^n' is defined as 'X^{n+1}' --- but see the discus-
sion in par. 6.3.2 --- (ii) the notion 'minimal projection
of X^n' is defined as 'X^0', and (iii) only a maximal projec-
tion, i.e. XP, can be a barrier to government/movement under
the appropriate conditions. The possible theoretical and
empirical consequences of these modifications have not been
systematically investigated. They may be expected to be
far-reaching and certainly not unproblematic.

It was argued that the following properties of verb-par-
ticle combinations in Afrikaans could be accounted for with
the aid of independently motivated assumptions on a syntactic
compound analysis: (i) the ability of verb-particle combina-
tions to occur in the position following *aan die/'t* in pro-
gressive constructions --- see par. 6.3.3.1.3, (ii) the
ability of verb-particle combinations to serve as the bases
of word formation rules --- see par. 6.3.3.2, and (iii) the
characteristic noncompositionality and idiosyncratic subcate-
gorization exhibited by verb-particle combinations --- see
par. 6.3.3.2.

And, finally, it was shown in par. 6.3.4 that a syntactic
compound analysis could be argued to provide a basis for
predicting both the existence and the properties of separa-
ble NV and AV compounds in Afrikaans. However, it was also
shown that neither the existence nor the properties of inse-
parable NV, VV, and PV compounds could be accounted for on
the basis of a syntactic compound analysis such as that out-
lined above. Thus, unless the following assumption was made,

the existence and properties of these compounds could be
argued to constitute counterevidence to a syntactic compound
analysis:

(86)   The properties of inseparable NV, VV and PV
          compounds are stipulated in the lexicon.

The latter assumption was argued to be problematic, particu-
larly as far as inseparable VV and PV compounds are concerned.

6.4   Assessment

In par. 6.2 above two possible alternative construals of
the relationship between morphology and syntax were outlined.
One of these, viz. the construal of this relationship assumed
on a theory of syntactic word formation such as that proposed
by Sproat (1985, 1987) and Lieber (to appear), was assumed in
par. 6.3 as a framework for the analysis of verb-particle
combinations in Afrikaans. On this construal a theory of mor-
phology/word formation and a theory of syntax are taken to be
one and the same theory. That is, it is assumed that the
properties of word structure can be accounted for by a theory
of syntax.

It appeared from the discussion in par. 6.3 that, in order to
account for the formal and other (morpho)syntactic properties
of verb-particle combinations on the basis of a syntactic
compound analysis, a number of modifications would have to be
made to currently accepted versions of the GB theory of syntax.
These modifications included modifications to $\overline{X}$ theory such
as those proposed by Lieber --- see par. 6.3.2 --- and
the redefinition of structural notions such as 'barrier' and
structural relations such as 'projection of category X^n'
along the lines indicated in par. 6.3.3.1.   The problematic
nature of these modifications has been made clear. It remains

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to consider the question of what may be learnt from the pro-
blematic nature of these modifications about the potential
adequacy of a theory of syntactic word formation as a frame-
work for the description of the properties of syntactically
complex words. Before doing so, however, let us consider the
question of what the merits of a syntactic compound analysis
such as that outlined above could be argued to be.

First, at a language-specific level, the analysis could be
argued to be able to account for the problematic properties
of Afrikaans verb-particle combinations discussed in chapter 2.
In addition to accounting for these properties, the analysis
could be argued to have the further advantage of being able to
explain why verb-particle combinations exhibit at least some
of these properties. Recall that the analyses of Dutch verb-
particle combinations discussed in chapters 3 and 4 were criti-
cized for failing to provide a principled basis for explaining
why verb-particle combinations behave cohesively with regard
to rules such as PP-preposing, PP-over-V, and V-raising on the
one hand, but not with regard to rules such as V-second and
ge- affixation on the other hand. On a syntactic compound
analysis, the internal structure of syntactically complex verbs
is assumed to be part of phrase structure and, hence, accessi-
ble to syntactic rules. Given this assumption, the difference
in cohesiveness displayed by verb-particle combinations with
regard to the two classes of rules could be argued to be re-
lated to structural properties of the combinations themselves
and the configurations in which they appear.

Thus, it could be argued that PP-preposing and PP-over-V can-
not apply to the lefthand constituent of a verb-particle
combination because the constituent to be moved is the non-
head constituent of the structure in which it appears. Move-
ment of a nonhead constituent out of a complex word structure
would be systematically excluded by an independently motivated
general syntactic principle, viz. the Empty Category Principle.
V-second, by contrast, moves the head of the structure under-
lying verb-particle combinations in Afrikaans. Unlike nonhead

movement, head movement would be allowed by the Empty Category
Principle. Hence, a syntactic compound analysis could be
argued to provide a principled basis for explaining the con-
trasting facts concerning the applicability of rules such as
PP-preposing and PP-over-V on the one hand and V-second on
the other hand to constituents of verb-particle combinations
in Afrikaans.

The behaviour of verb-particle combinations with regard to
V-raising, too, could be shown to be related to structural
properties of these combinations. V-raising has been indepen-
dently argued to be able to apply to a projection of V^0.
Given that the compound structure underlying verb-particle
combinations forms part of the syntactic phrase structure to
which V-raising applies, it could be argued that the V-node
dominating the compound structure qualifies as a projection
of the head V^0 of the compound structure for purposes of V-
raising.

If these arguments could be shown to be sound, the above ac-
count of the syntactic behaviour of verb-particle combina-
tions could be argued to be superior at a language-specific
level to accounts such as those proposed for Dutch by Baayen,
Van Riemsdijk, and Stowell. On the latter accounts no prin-
cipled explanation is available for the contrasting behaviour
of verb-particle combinations with regard to the rules men-
tioned above.

A further positive language-specific consequence of accepting
a syntactic compound analysis of verb-particle combinations
was discussed in par. 6.3.4. As was shown there, the
claim that word structure obeys general, category-neutral
principles of phrase structure predicts the existence not
only of verb-particle combinations but also of compound verbs
with lefthand constituents other than prepositions. This
prediction appeared to be correct, as evidenced by the exis-
tence of NV, AV, and VV compounds in Afrikaans. The fact
that the analysis could serve as a basis for correct predic-

tions could be considered a positive consequence of accepting such an analysis.

Turning now to the general linguistic level, a syntactic compound analysis could be argued to have at least two major positive consequences. A first positive consequence of accepting a syntactic compound analysis would be the elimination of conceptual redundancy in the theory of grammar. Recall that it was argued in chapter 5 above that analyses of verb-particle combinations consistent with a lexicalist construal of the relationship between morphology and syntax all led to the postulation of conceptually redundant descriptive devices and, hence, to the loss of generalization. These devices included a rule generating $\overline{X}$ categories in the lexicon, as proposed by Simpson; the two rules (one lexical and one syntactic) proposed for the generation of verb-particle combinations by Baayen; Selkirk's redundancy rule relating lexically and syntactically generated verb-particle combinations; Van Riemsdijk's P-shift rule which in effect duplicates the function of word formation rules; and Stowell's extended word formation component which overlaps in function with both the morphological and the syntactic components of the grammar.

By contrast, if the syntactic compound analysis presented here could be justified, no conceptually redundant devices would be required to account for the properties of verb-particle combinations. The syntactic properties of verb-particle combinations in Afrikaans could be described in terms of notions, rules, principles and parameters that are independently required for the description of the syntactic properties of phrases. Thus, on the syntactic compound analysis outlined above, the properties of verb-particle combinations were described in terms of syntactic notions such as 'projection of X^n', 'trace', 'antecedent', '(proper) government', 'barrier', etc., the syntactic rule Move α , a syntactic distinction such as that between head movement and nonhead movement rules, (sets of) syntactic principles such as $\overline{X}$ theory, the Empty Category Principle, and bounding theory,

syntactic parameters such as those determining the position
of specifiers and complements, and a semantic constraint, viz.
the Recoverability Condition. Now, a theory of word forma-
tion postulating a single set of categories, notions, rules,
and constraints to account for the properties of words and
phrases could be argued to be more highly valued in terms of
a criterion of generality than one on which two systems of
rules, principles, etc. are, redundantly, required to account
for the properties of words and phrases respectively. If, in
addition to being more highly valued in terms of a criterion
of generality, the former theory could be argued also to be
at least as adequate, empirically and conceptually, as the
latter theory, then this would be a strong indication that
the former theory should be preferred to the latter theory.
Whether or not a theory of syntactic word formation could be
argued to be empirically and conceptually adequate would de-
pend on the availability of independent evidence for the modi-
fications to the general theory of grammar that are required
on particular analyses of word structure such as the syntactic
compound analysis of verb-particle combinations in Afrikaans
outlined above. We shall return to this question below. What
is clear, however, is that acceptance of a syntactic compound
analysis of verb-particle combinations could be argued to
have the advantage of eliminating the need for redundant rules,
concepts and other descriptive devices at both a language-
specific *and at a general theoretical* level.

Acceptance of a syntactic compound analysis of verb-particle
combinations could be argued to have a second positive conse-
quence at the general linguistic level as well. As was indi-
cated in par. 6.2 above, the Lexical Integrity Hypothesis,
which forbids syntactic rules from analyzing or changing
word structure, does not follow logically from the particular
way in which the relationship between morphology and syntax
is construed on a lexicalist theory of morphology. Therefore,
if the Lexical Integrity Hypothesis, insofar as it can be
maintained, could be derived instead of having to be stipu-
lated on an alternative theory of morphology, then the alter-

native theory could be argued to derive some merit from this
fact. Thus, let us consider the implications of a syntactic
compound analysis for the Lexical Integrity Hypothesis.

One consequence of accepting a syntactic compound analysis of
verb-particle combinations would be that the Lexical Integri-
ty Hypothesis, even on its weaker formulation, could not be
maintained. On a syntactic compound analysis, V-second would
have to be able to move the head constituent of a compound
verb, in violation of even the weaker version of the Lexical
Integrity Hypothesis as formulated in (5) in chapter 1. How-
ever, it would appear that a principle of lexical integrity
could be argued to hold in the case of other syntactically
complex words. Thus, it was pointed out in par. 6.3.3.1.2
that the rule Move α cannot move constituents of compounds
other than the head of a compound verb in Afrikaans. This
phenomenon could be adduced as evidence for accepting some
version of the Lexical Integrity Hypothesis. However, this
phenomenon could also be argued to be the kind of phenomenon
that bounding theory was designed to deal with. And a theory
of syntactic word formation, by hypothesis, would allow for
the difference between permissible and impermissible cases of
movement out of compound word structures to be accounted for
in terms of syntactic principles such as the principles of
bounding theory. If such an account could indeed be given,
there would be no need for a stipulation such as the Lexical
Integrity Hypothesis in the theory of syntactic word forma-
tion. Although the details of such an account have not been
worked out, recent proposals by Chomsky (1986) concerning
the reformulation of the Subjacency Condition in terms of a
category-specific notion 'barrier' would suggest that such
an account might be possible, as was indicated in par.
6.3.3.1.2.

The No Phrase Constraint was not at issue in the analysis of
verb-particle combinations presented in par. 6.3. However,
the set of word structures generated by the category-neutral
principles of $\overline{X}$ theory was shown in (24) above to include the

structure (24a) which contains a maximal projection, and
which is the structure underlying phrasal compounds in Eng-
lish according to Lieber (to appear). It was shown in (67)
above that Afrikaans does have a small and unproductive class
of syntactically complex verbal expressions which could be
argued to be analyzable as compound verbs of which the non-
head constituent is a PP rather than a P. It could also be
argued that the morphosyntactic well-formedness of members
of unproductive classes of words, and of lexicalized forms in
general, must be specifiable by the rules and constraints of
the language --- see n. 40 above. It would then follow that
a theory of syntactic word formation on which structures such
as (24a) were ruled well-formed could be considered more ade-
quate than a theory on which such structures were ruled ill-
formed by virtue of violating the No Phrase Constraint. More-
over, Sproat (1985:202ff) has shown that the part of the No
Phrase Constraint that does appear to hold of word structure
generally, viz. the constraint against the appearance of
specifiers, prehead modifiers, etc. in the nonhead consti-
tuent of complex words, may be argued to follow from a prin-
ciple of theta theory --- see n. 1.1 to chapter 6 for details.
Once again, therefore, a theory of syntactic word formation
could be argued to be superior to a lexicalist theory of word
formation in that a constraint such as the No Phrase Constraint
could be shown to be derived from an independently required
syntactic principle on the former theory, whereas it has to be
stipulated on the latter theory.

It has been noted repeatedly that a syntactic compound analy-
sis of verb-particle combinations (and other compound verbs)
in Afrikaans could be claimed to achieve the descriptive and
explanatory success indicated above only if the language-
specific and general-linguistic assumptions listed in (31) and
(83)-(86) above could be shown to be well-founded.

The assumptions of (31), i.e. those concerning modifications
to the $\overline{X}$ theory of phrase structure as proposed by Lieber,
have been argued to be problematic for a variety of reasons.

Let us consider two of these reasons. On the one hand, at least two of Lieber's modified syntactic principles, viz. (20) and (21), were argued to express false generalizations about supposed similarities between word structure and phrase structure. In other words, these principles were shown to predict similarities between word structure and phrase structure which could be argued not to exist. On the other hand, both the parameter (22b) and the stipulation (25) were argued to be ad hoc on the grounds that there was no evidence that they were required for any purpose other than that of ensuring that the proposed structural principles made correct predictions about possible word structures in English. Both these shortcomings could be argued to detract from the potential merit of a theory of syntactic word formation for the same reason. Thus, it could be argued that a theory of syntactic word formation necessitated the postulation of theoretical devices which expressed false generalizations about supposed similarities between word structure and phrase structure, or which were required solely to prevent the theory from making incorrect predictions about possible word structures. Such a theory could be claimed to be both empirically and conceptually inadequate. And, as was argued above, greater generality bought at the cost of empirical and conceptual adequacy does not ensure greater merit. That is, a theory that could be claimed to be more general (in the sense of less redundant) than an alternative theory, but at the same time less adequate empirically and conceptually than this alternative theory, could not be argued to be superior to the latter, alternative theory. A theory of syntactic word formation which included the problematic assumptions of (31) could be argued to be empirically and conceptually inadequate. Hence, it could not be argued to have greater merit as a framework for the description of word structure in human languages than a lexicalist theory of morphology.

It was claimed that the well-foundedness (or otherwise) of the general linguistic assumptions (84a-c) and (85) could be established only on the basis of further research. Let us

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consider the possible consequences which failure to provide
independent justification for just one of these assumptions,
viz. the assumption (85), would have for a theory of syntac-
tic word formation. The assumption in question concerns the
redefinition of the notion 'barrier' in such a way that the
presence of more than one X^0 node between an antecedent and
its trace would constitute a barrier to government or to
movement. This assumption was argued in par. 6.3.3.1.2 to
be required in order to account for the difference in cohe-
siveness with regard to syntactic movement rules displayed
by compound verbs (excluding inseparable NV, VV and PV com-
pounds) on the one hand, and compound nouns and adjectives
on the other hand.

It is of crucial importance that it should be possible to re-
late the difference in accessibility to movement rules dis-
played by the heads of compound nouns and adjectives on the
one hand and those of compound verbs on the other hand to
some other difference in properties between the two classes
of constructions or to some independent principle of the
grammar. If this could not be done, some version of the
Lexical Integrity Hypothesis would have to be assumed to ap-
ply in the case of the former but not the latter compounds.
This would be a highly undesirable consequence for two reasons.

First, the fact that it would create the possibility of deri-
ving the Lexical Integrity Hypothesis from one or more inde-
pendently required grammatical principles could be argued to
be a potential advantage of accepting a theory of syntactic
word formation, as indicated above. However, if some version
of the Lexical Integrity Hypothesis had to be assumed on a
theory of syntactic word formation to account for phenomena
such as those in question, this theory could not be claimed
to be superior to a lexicalist theory of word formation in
the relevant respect. Second, if a theory of syntactic word
formation were to include some version of the Lexical Inte-
grity Hypothesis, a central claim of this theory, viz. that
word structure is merely a part of phrase structure, could not

be upheld. Acceptance of a version of the Lexical Integrity
Hypothesis would entail the claim that words are different
from phrases in some theoretically significant sense. This
claim could be argued to be incompatible with a theory of
syntactic word formation which, in essence, denies that the
notion 'word' has any theoretical significance.

It is clear therefore that the assumptions in terms of which
the difference in syntactic behaviour between compound nouns
and adjectives on the one hand and compound verbs on the
other hand are accounted for in Afrikaans would be of cru-
cial importance in any assessment of the adequacy of a theory
of syntactic word formation. Failure to provide independent
motivation for the assumption (85) above, or to show that the
facts in question can be accounted for in terms of some other
well-motivated assumption(s), would bear negatively on the
syntactic compound analysis of verb-particle combinations
proposed above and on the theory of syntactic word formation
which it presupposes.

It must be concluded that the adequacy of a theory of syntac-
tic word formation has not been established on the basis of
the analysis of verb-particle combinations in Afrikaans pre-
sented above. What has been established is that the adequacy
of a theory of syntactic word formation would depend crucial-
ly on the possibility of providing independent justification
for the all but trivial modifications to currently accepted
and well-motivated syntactic notions and principles that are
required on such a theory.

Chapter 7

CONCLUSION

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This study, ultimately, attempts to contribute to the cur-
rent debate concerning the way in which the relationship
between syntax and morphology should be construed on a Chom-
skyan theory of grammar. Two alternative construals of this
relationship were considered. On the first, viz. that as-
sumed on lexicalist theories of morphology, a theory of word
structure and a theory of phrase structure are viewed as
fully independent subsystems of the grammar, each having its
own categories, rules, and constraints, and each being sub-
ject to its own principles of organization. The lexicalist
construal of the relationship between morphology and syntax
is thus essentially a modular one.

On the alternative construal, viz. that of theories of syn-
tactic word formation, a theory of word structure and a theory
of phrase structure are viewed as a single theory. On this
construal a single system of categories, rules and constraints,
subject to a single set of organizational principles, is as-
sumed to account for the (morpho)syntactic properties of both
words and phrases. The construal of the relationship between
morphology and syntax assumed on a theory of syntactic word
formation is thus essentially a nonmodular one.

Various analyses of verb-particle combinations in Dutch and
English which explicitly or implicitly assume a lexicalist
construal of the relationship between morphology and syntax
were considered critically. It was argued that some of the
major shortcomings of these analyses could be attributed to
their being couched within the modular mould of a lexicalist
framework. A major shortcoming of all the analyses considered

was shown to be loss of generalization due to the fact that
they required redundant descriptive devices to account for
properties of verb-particle combinations in the languages
concerned. The same kind of redundancy and resulting loss
of generalization has been argued by Botha (1984:141-144) to
be a major shortcoming of lexicalist analyses of synthetic
compounding in English. In both cases the redundancy could
be argued to be part of the cost of maintaining a formalisti-
cally modular view of the relationship between syntax and
morphology assumed.

The potential adequacy of a theory of syntactic word forma-
tion as a framework for the description of word structure
was assessed on the basis of a syntactic compound analysis of
verb-particle combinations in Afrikaans. Both the general
theoretical devices that have been proposed by Lieber (to ap-
pear) to account for the morphosyntactic form of compound
words and the additional language-specific and general lin-
guistic assumptions that would have to be made in order to
account for the properties of verb-particle combinations in
Afrikaans were argued to be problematic. Specifically, the
modified general structural (i.e. syntactic) principles pro-
posed by Lieber were claimed to either express false genera-
lizations about supposed similarities between word and phrase
structure or to lack independent motivation. Also, the modi-
fications of accepted syntactic notions required on a syn-
tactic compound analysis of verb-particle combinations in
Afrikaans were shown to be all but trivial. Hence, providing
independent justification for these modifications would
appear to be a daunting task. In the absence of independent
justification, of course, the modifications concerned would
have to be concluded to be ad hoc. The fact that it expressed
false generalizations and required ad hoc descriptive devices
could be argued to be an indication that a theory of syntactic
word formation, as presently construed, is both empirically
and conceptually inadequate.

Thus, the choice at present seems clear. On the one hand, the
cost of modularity, i.e. componential heterogeneity, is con-
ceptual redundancy and the inability to express linguistically
significant generalizations. On the other hand, the cost of
nonmodularity, i.e. componential homogeneity, is predictive
failure and ad hoc modification. And then it should also be
borne in mind that the constructions considered in this study,
viz. verb-particle combinations, were shown to have phrase-
like properties which render them particularly amenable to
analysis within the framework of a theory of syntactic word
formation. It may be expected that many properties of less
phrase-like complex words --- especially those that cannot
be formed productively --- could prove to either defy such
treatment or to require a general theory of syntax that would
be so stipulatory as to be virtually devoid of explanatory
power.

In view of the foregoing, it must be concluded that neither
of the two "pure", i.e. prototypical, models of the relation-
ship between morphology and syntax that were contrasted in
this study can be considered unproblematic. It would appear,
therefore, that a solution to the problem of finding an ade-
quate way of construing the relationship between morphology
and syntax should be sought in a "mixed" model, i.e. a model
lying somewhere in between the formalistically modular ap-
proach of lexicalist theories of word formation and the com-
pletely nonmodular approach of theories of syntactic word
formation. It is hoped that this study will have contributed
towards identifying the requirements that such a mixed model
would have to satisfy and the problems that it would have to
address.

In searching for an alternative solution, an approach such as
that adopted by Fabb (1984) or Baker (1985) would appear to
be well worth considering. The construal of the relationship
between morphology and syntax assumed on this alternative ap-
proach was abstractly represented as (2) in par. 6.2 above.
On this approach a greater degree of interdependence between

morphology and syntax is assumed. However, it is still es-
sentially a modular approach. Thus, both Fabb and Baker
maintain that some syntactically complex words are formed in
the lexicon and others in the syntax. The structural proper-
ties of the two sets of complex words are therefore claimed
to be determined by different and independent systems of
categories, rules, constraints, etc.

One of the problems that arose on the syntactic compound ana-
lysis presented above would appear to be exactly the kind of
problem that could find a solution within the framework of an
alternative approach such as that adopted by Fabb and Baker.
This is the problem of accounting for the difference in syn-
tactic behaviour (and other properties) between separable and
inseparable compound verbs, and between (separable) compound
verbs and (inseparable) compound nouns and adjectives in Afri-
kaans. On the syntactic compound analysis presented above it
was assumed that the difference in syntactic cohesiveness
between different classes of compounds would have to be ac-
counted for in terms of a revised notion 'barrier'. It was
argued that such an account would be problematic, however.
If these differences could be accounted for on the assumption
that separable compound verbs are syntactic constructs where-
as all other compounds are lexical constructs, then there
would be no need for a redefinition of the notion 'barrier'.
Thus, one of the major problematic consequences of the ana-
lysis outlined above would no longer arise.

Such an alternative account can be expected to encounter pro-
blems of its own, however. One such problem would be that of
finding a way to express the linguistically significant simi-
larities between separable and inseparable compounds. This
and similar problems would have to be solved by further research.
Also, it may be expected that most of the problems that were
shown to arise on the syntactic compound analysis outlined above
would arise on such an alternative analysis as well. These pro-
blems should be addressed in further research.

First, there is the problem of accounting for the formation
of syntactic compounds. Lieber's base-generation account has
been shown to be highly problematic. An alternative that
could be considered is an incorporation account along the
lines proposed by Baker (1985). On this account complex words
formed in the syntax are claimed not to be base-generated but
to be formed by application of the rule Move α .   The rule
Move α is claimed to be able to adjoin the head constituent
of a subcategorized complement to a lexical head that governs
it, thus forming a compound word. Given that the nonhead con-
stituents of separable NV and AV compounds in Afrikaans were
shown to bear the same relation as subcategorized complements
to the verbal head of the compound, an incorporation analysis
of at least this subset of compounds would appear to be pos-
sible. Whether such an analysis could also be extended to
verb-particle combinations would remain to be seen. Recall
that a major objection to the incorporation analysis proposed
by Van Riemsdijk and Stowell, and discussed in chapter 4, was
that these analyses failed to account for the separability of
the verb and the particle by V-second. However, it has been
shown to be one of the merits of the syntactic compound ana-
lysis outlined above that it could serve as a basis for ex-
plaining the behaviour of compound verbs with regard to rules
such as V-second.

A second problem requiring further investigation would be that
of redefining the notions 'projection of category X^n', and
'minimal projection of category X^n', in such a way as to en-
sure that the head X^0 of a syntactic compound would be cor-
rectly identified as the minimal projection of a category X^n
by rules such as V-second and V-raising, the principles of
Case-assignment and theta role assignment, etc. The proposals
made by Fabb (1984) in this connection would provide a good
starting point.

Thirdly, the desirability of deriving rather than stipulating
the claims expressed by the Lexical Integrity Hypothesis and
the No Phrase Constraint respectively was indicated in par. 6.4

above. If these claims should have to be maintained with re-
spect to words formed in the syntax, they would have to be
shown to follow from other well-motivated syntactic principles.
In the case of the Lexical Integrity Hypothesis it was hypo-
thesized that a redefined notion 'barrier' could serve as a
basis on which to account for the characteristic syntactic
cohesiveness of the majority of compound words. Any attempt
to redefine the notion 'barrier' is bound to encounter nume-
rous problems, however, Given an alternative theory of the
relationship between morphology and syntax such as that as-
sumed by Fabb and Baker, however, it would be well worth
investigating the possibility that the Lexical Integrity Hypo-
thesis could be dispensed with as a constraint on words formed
in the syntax and maintained only as a constraint on words
formed in the lexicon. This would entail that all compounds,
with the exception of separable compound verbs such as those
found in Afrikaans, would have to be assumed to be formed in
the lexicon and, hence, to be subject to the Lexical Inte-
grity Hypothesis. The syntactic cohesiveness of derived
words formed in the syntax would have to be accounted for on
other grounds. The inability of an affix to occur without a
sister constituent of the appropriate type has been suggested
as a possible basis for the constraint on the movement of
consituents of derived words by syntactic rules --- see
n. 43 to chapter 6. As far as the No Phrase Constraint is
concerned, proposals for deriving this constraint from, e.g.,
principles of theta theory as proposed by Sproat --- see
n. 11 to chapter 6 --- could prove to be a fruitful start-
ing point for further investigation.

Fourthly, and finally, there is the question of the content
and theoretical significance of the notion 'word'. On a
theory of syntactic word formation such as that accepted by
Sproat (1985), the notion 'word' is assumed to be theoretical-
ly insignificant. That is, the morphosyntactic properties of
words, i.e. X^0 categories, are taken to follow entirely from
a theory of phrase structure. On lexicalist theories of mor-

phology, by contrast, words are assumed to have properties
which differ from those of phrases in theoretically signifi-
cant respects. The description of these properties thus
requires the postulation of an independent theory of morpho-
logy. Now, a theory of word formation on which some words
are taken to be syntactic constructs while others are taken
to be lexical constructs, would express the claim that there
are two different notions 'word': viz. a syntactic notion
'word' and a lexical notion 'word'. Questions such as the
following would then arise: What is the content of these two
notions? Do these notions differ in content? If so, are
these differences predicted on a theory of morphology which
provides for both lexical and syntactic word formation? Are
these notions similar in content? If so, how are these simi-
larities to be expressed on a theory of morphology which pro-
vides for both lexical and syntactic word formation? These
are nontrivial questions indeed. It is the fact that it
gives rise to questions such as these that makes the problem
of the relationship between morphology and syntax one well
worth studying.

NOTES TO CHAPTER   1

1.   Cf. e.g. Halle 1973; Siegel 1974; Jackendoff 1975;
     Aronoff 1976; Wasow 1977; Anderson 1977; Roeper and
     Siegel 1978; Allen 1978; Lieber 1981 and 1983; Sel-
     kirk 1982; Kiparsky 1982; Thomas-Flinders 1983; and
     Di Sciullo and Williams 1987 to mention but a few nota-
     ble attempts to account for the properties and/or for-
     mation of morphosyntactically complex words within a
     lexicalist framework.   Cf. also the references in par.
     1.2 below.

2.   The various ways in which the relationship between mor-
     phology and syntax has been construed by different lexi-
     calist morphologists will be discussed in par. 1.2 below.

     Detailed proposals concerning the nature of the rela-
     tionship between the morphological and phonological com-
     ponents of the grammar. are made by, e.g. Siegel (1974);
     Allen (1978); Carrier (1979); Strauss (1982); and
     Pranka (1983); and by proponents of a variant of lexi-
     calist morphology known as Lexicalist Phonology and Mor-
     phology, such as e.g. Pesetsky (1979); Mohanan (1982);
     and Kiparsky (1982).

     For proposals concerning the way in which rules and prin-
     ciples of morphology interact with semantic rules and
     principles, cf. e.g. Jackendoff 1975; Lieber 1981;
     Bresnan 1982; Pesetsky 1985; Zwanenburg 1984; and
     Botha 1988a.

3.   The expression <u>the lexicalist construal of the relation-
     ship between morphology and syntax</u> must be interpreted as
     shorthand for "the various ways in which the relationship
     between morphology and syntax is construed on lexicalist
     theories of morphology". There is no single, invariant
     "lexicalist construal" of this relationship, as will be

made clear in par. 1.2 below.

Cf. also Botha 1984:135-144, where a similar characteri-
zation of the lexicalist construal of the relationship
between morphology and syntax is given. Botha argues
that this construal is problematic on the basis of the
shortcomings of lexicalist theories of synthetic compoun-
ding.

4.   Consider, for example, the following contrasts:

(a) Synthetic compounds not   (b) Synthetic compounds
     containing verb-particle   containing verb-particle
     combinations: combinations:

     *(in die) rug + steek + lik   aan + steek + lik
        in the back   stab   -ous   on/to pin/put   -ous
                                           'contagious'

     *potte + bak + sel   af + sak + sel
       pots   bake   -ment   down   sink   -ment
                                           'sediment'

     *wan + geld + bestuur   wan + voor + stel
       mis-   money   manage   mis- before   present
                                           'misrepresent'

     *her + boek + lees   her + op + tel
       re-   book   read   re-   up   count
                                           're-add'

5.   The discussion in par. 1.2 is a fleshed-out version of
      Botha's (1984:par. 6.3.2) discussion of the basic tenets
      of lexicalist morphology or, to use Botha's term, the
      Extended Lexicalist Position.

6.   A brief outline of the development of the constraint
      that I am calling the Lexical Integrity Hypothesis in
      generative grammar is given in Botha 1984:136. For more
      detailed discussion cf. e.g. Hoekstra et al. 1980:1-15;
      Scalise 1984; and Sugioka 1986:ch. 1.

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7. This elaborated version of the Lexicalist Hypothesis has
    been assumed for purposes of the analysis of classes of
    compound and/or derived words by, amongst others, Halle
    (1973), Siegel (1974), Aronoff (1976), Allen (1978),
    Strauss (1979), Botha (1980), and Anderson (1982).

8. Cf. e.g. Jackendoff 1975; Booij 1977; Brame 1978;
    Lapointe 1978, 1980; Pesetsky 1979; McCarthy 1979;
    Carrier 1979; Lieber 1981, 1983; Selkirk 1982; Strauss
    1982; Bresnan 1982; Mohanan 1982; Kiparsky 1982;
    Thomas-Flinders 1983; Pranka 1983; and Simpson 1983a, b.

9. Simpson (1983b:3-4) provides the following examples to
    illustrate the prohibition against the gapping of parts
    of words:

    i. a. *John paid the electricity bills, and Mary*
                ____ *the gas bills.*
        b. *John liked the play, and Mary dis-____ it.*

    ii. a. *John was hopeless, but Mary was ____-ful.*
        b. *Lucy admired his open-____ and faithfulness.*

10. Cf. e.g. the proposals by Marantz (1981) and Pranka
    (1983) on which features associated with parts of what
    constitute complex words at syntactic S-structure are
    merged in the course of the syntactic derivation of the
    sentence.

11. Thus, according to Simpson (1983b:5), it is impossible
    to refer to part of a word by a pronoun, as illustrated
    in i., or to modify appositively a nominal which is
    part of a word, as shown in ii.

    i. a. *John has no father now, and he misses him.*
        b. *John is fatherless now, and he misses him.*

ii. a. *John's eyes were full of tears, the self-indul-*
         gent tears of a guilty conscience.
     b. **John's eyes were <u>tearful</u>, the self-indulgent*
         tears of a guilty conscience.

12. Unless explicitly otherwise indicated, the term <u>word</u> will
     be used in this study in its syntactic sense, i.e. to de-
     note a constituent dominated by one of the (terminal)
     lexical categories N, V, A, or P in a syntactic structure.
     In $\overline{X}$ terms a word is a zero level category or X^0.   Cf.
     e.g. Selkirk 1982:6ff; Jensen and Stong-Jensen 1984:477;
     Fabb 1984:33; and Baker 1985:89 for this definition of
     the notion 'word'. The syntactic notion 'word' must be
     distinguished from the phonological and the semantic no-
     tions 'word', for discussion of which cf. e.g. Seuren
     1966 and Beard 1981:40ff.   Cf. also Booij 1983:7 for a
     distinction between the phonological and syntactic notions
     'word'.

     Di Sciullo and Williams (1987) draw a distinction between
     words as morphological objects, i.e. objects whose form
     is determined by rules of morphology, and words as syntac-
     tic atoms, i.e. objects which are insertable in X^0 slots
     in syntactic structures. Given that it is the aim of the
     present study to determine whether this distinction is
     well-founded, the term <u>word</u> as used in this study must be
     taken to denote any constituent of the category X^0, irre-
     spective of whether its (morpho)syntactic form is deter-
     mined by rules of morphology or by rules of syntax.

13. Note that morphologists such as Anderson, who draw a dis-
     tinction between morphological rules that apply in the
     lexicon and morphological rules that apply in the syntax,
     accept the No Phrase Constraint as a constraint on the
     former type of morphological rule only.

14. In $\overline{X}$ notation, a category is represented as a pair con-
     sisting of a symbol X, where X represents the category

name --- i.e. N, V, A (= Adj and Adv), or P --- and
a superscript integer n indicating the category level
in the $\bar{X}$ hierarchy. A lexical category is represented
as X^0. Any bar level higher than 0 indicates a syntac-
tic phrase. Thus all categories of level $X^{1\leq}$ (read:
level 1 and higher) are phrases. X^{max} represents the
maximal projection of a category, that is the one with
the highest possible level specification. Cf. e.g. Sel-
kirk 1982:6-8 for discussion.

15. Complex words such as the following are provided as
examples of phrasal embedding in word structure (the
supposed phrasal constituents are underlined):

   i. _tweekamers_telsel
      two-chamber-system   (Booij 1977:44)

   ii. _New York-to-Detroit_ flight   (Carroll 1979:876
                                          n. 1)

   iii. _skewemond_ - _laggie_
        crooked-mouth smile
        'crooked smile'

        oor - die-heining - _stories_
        over the fence   stories
        'gossip between neighbours'

        rek - en- strek - _oefening_
        stretch and extend exercise
        'stretch-and-bend exercise'   (Botha 1980:141ff)

   iv. _old house_ lover
       used book seller   (Fabb 1984:194)

16. Cf. e.g. Chomsky 1970; Jackendoff 1975:668ff; Wasow
1977:330-331; Bresnan 1978; Hoekstra et al. 1980:4;
and Fabb 1984:38-39. For a recent challenge to these
arguments, cf. Sproat 1985:491-499.

17. But see Di Sciullo and Williams 1987:ch. 1 for argu-
    ments to the effect that the putative lesser producti-
    vity of the rules responsible for creating words and
    the greater unpredictability of the properties of syn-
    tactically complex words are of no theoretical signifi-
    cance.

18. Cf. e.g. Mohanan 1982:71 for an explicit statement of
    this conception of the lexical component of the grammar.
    Cf. also the contributions in Hoekstra et al. 1980 for
    further elaboration of this view.

19. Cf. *Katz 1981:117ff* and *Bowers 1984:23 for this parti*-
    cular interpretation of the autonomous systems hypothe-
    sis. Cf. also Wiese 1982 for a clarification of the
    role of modularity in linguistic and psycholinguistic
    theories.

NOTES TO CHAPTER 2

1. Equivalent terms in languages other than English are
    "trennbare/unfeste Zusammensetzungen" (cf. e.g. Henzen
    1957:89-90) and "trennbare partikelverben" (cf. e.g.
    Eroms 1982:33) in German; and "scheidbaar samengestelde
    verba" (cf. e.g. De Vries 1975:43) and "samenkoppelingen"
    (cf. e.g. De Rooij-Bronkhorst 1980:163) in Dutch.

2. Verb-particle combinations, i.e. complex verbal expres-
    sions with properties similar to those of the English,
    Dutch and Afrikaans expressions exemplified in (1), also
    occur in languages such as German (see i. below), Nor-
    wegian (see ii. below) and Swedish (see iii. below).

    i. a. *Du musst deinen Spinat auf + essen, Johann.*
            you must your   spinach up   eat   John
            'You must finish your spinach, John.'

        b. *Johann esst immer seinen Spinat auf.*
            John   eats always his   spinach up
            'John always finishes his spinach.'

    ii. a. *Jon sparka ut hunden.*
             John kicked out the-dog
             'John kicked out the dog.'

         b. *Jon sparka hunden ut.*
             John kicked the-dog out

    iii. a. *Pojkarna åt upp sin   mat.*
              the-boys ate up   their food
              'The boys finished their food.'

          b. *Pojkarna åt tacksamma upp sin   mat.*
              the-boys ate grateful   up their food
              'The boys gratefully finished their food.'

Cf. e.g. a number of contributions in Eichinger (ed.)
1982 and Höhle 1985:351ff for some discussion of verb-
particle combinations in German; Åfarli 1985 for a dis-
cussion of Norwegian verb-particle combinations; and
Platzack 1983:19f for some comments on the equivalent
expressions in Swedish.

3.   The nonverbal constituent may also be noun-like or
     adjective-like in character. For discussion and exam-
     ples, see chapter 6 below.

4.   A rule of V-second is postulated by those grammarians
     who assume that Dutch, and Afrikaans, exhibit SOV word
     order at the level of D-structure. V-second obligatorily
     moves the tensed verb to the second position in root
     sentences, thereby accounting for the asymmetry between
     root and embedded sentences as regards the position of
     the verb. Cf. e.g. Koster 1975; Van Riemsdijk 1978:35;
     Waher 1982 (and the references cited there); Koopman
     1984; Van Riemsdijk and Williams 1986:52, 57; the con-
     tributions in Haider and Prinzhorn (ed.) 1986; and Den
     Besten 1986:par. 2.2 and the references cited there for
     discussion of the rule of V-second. Olsen 1985:135ff,
     Platzack 1985 and Toman 1985:10ff provide helpful over-
     views of the literature on the so-called V-second pheno-
     menon.

     For discussion and/or illustration of the rule of V-
     raising, cf. e.g. Koster 1975:129ff (he calls it the
     rule of Predicate Raising), Van Riemsdijk 1978:35, 54,
     De Haan 1979:48ff, Evers 1982, Haegeman and Van Riems-
     dijk 1986, and Den Besten 1986:par. 2.3 and the refe-
     rences cited there. According to Haegeman and Van Riems-
     dijk (1986:417)

          "Verb Raising is a type of clause union that af-
          fects the verb of a nonfinite complement clause
          to the left of certain matrix verbs ... . In
          essence, the verbs form a cluster; furthermore,
          the embedded verb usually ends up to the right
          of the matrix verb ... ."

They (1986:419) illustrate the operation of V-raising
in Dutch with reference to the following data:

   i.   <u>D-structure:</u>

      dat   Jan [PRO [een huis kopen]$_{VP}$]$_S$ wil
      that Jan   a house buy   wants
      'that Jan wants to buy a house'

  ii.   <u>V-raising:</u>

      a.   *dat Jan [PRO [een huis e]$_{VP}$]$_S$ wil kopen*
             that John   a   house   wants buy

      b. **dat Jan [PRO [e]$_{VP}$]$_S$ wil een huis kopen*
             that John   wants a house buy

5.   Both sentences (3b) and (5b) are from Koster 1975:116,
    126. I have added some structural information in accor-
    dance with analyses of similar sentences provided by
    Van Riemsdijk (1978:54) and Baayen (1986:34).

6.   Cf. Koster 1975:124 and the references cited there for
    some discussion of the *aan het* + infinitive construc-
    tion. The example is from (Baayen 1986:35).

7.   Cf. e.g. Jespersen 1928:15; Henzen 1957:89; Fraser
    1965:37-38; Live 1965:441ff; Palmer 1965:180; Hund-
    snurscher 1968:1-7; Weinreich 1969:69; Marchand 1969:
    1, 125; Kunsmann 1971:85ff; Bolinger 1971:xii, 110ff;
    Quirk et al. 1972:812; Du Plessis 1972:47ff; Emonds
    1972:546; Lipka 1972:19, 29; Adams 1973:9; Meyer
    1975:4; De Vries 1975:44ff; Fraser 1976:v, 5ff; Oehrle
    1976:206; Von Schon 1977:2-3; Booij 1977:160 n. 7;
    Makkai 1978:421; Carlson and Roeper 1980:158; De Rooij-
    Bronkhorst 1980:189; Stowell 1981:302; Lieber 1983:69;
    Simpson 1983a:7; Zwicky 1984b:155; Kilby 1984:par. 6.3;
    Höhle 1985:356; Paulissen 1985:15ff; and Baayen 1986:
    47, 49.

For extensive discussion and illustration of the ranges
of meanings of verb-particle combinations, cf., in par-
ticular, Fraser 1965:ch. 3 and Bolinger 1971:ch. 7 for
English; De Vries 1975:ch. 3 for Dutch; Henzen 1969,
Lipka 1972:ch. 3 and various contributions in Eichinger
(ed.) 1982 for German; and Du Plessis 1972:60ff and
Van der Merwe 1980 for Afrikaans.

8. The meanings attributed to the expressions in (14)-(16)
    are all provided by the various dictionaries which I
    have consulted --- see Bibliography.

9. Cf. Aronoff 1976:11 for the notion 'underdetermined
    meaning'. Cf. also Marchand 1969:125, Makkai 1978:421,
    Beard 1981:259, 272, Jackendoff 1983:par. 9.5, Hoek-
    sema 1984:34ff, and Allerton 1984:32ff for some discus-
    sion of the underdetermined or context-dependent nature
    of the meaning of certain classes of lexical items.

10. Cf. Botha 1968:214-6 for a discussion of the distinction
    between metaphorical and idiomatic meaning. Metaphorical
    meaning is discussed in (Botha 1968:par. 5.4.1) and idio-
    matic meaning in (Botha 1968:par. 5.5.1). Cf. also Makkai
    1978:445; Norrick 1979:672f; Clark and Clark 1979:804ff;
    Halvorsen 1983:610f; Jackendoff 1983:ch. 10; Allerton
    1984:35f; and Kilby 1984:104f for some discussion of the
    problems involved in drawing a distinction between idiom
    and metaphor. A survey of relevant literature is given
    by Wood (1986:6-7).

11. Cf. Aronoff 1976:10 for a discussion of cranberry morphs.

12. The morpheme *skeep* in *op+skeep* and *af+skeep* does not ap-
    pear to be related to the *skeep* in *in+skeep* 'to take on
    board', *ont+skeep* 'to unload', and *ver+skeep* 'to ship'.
    The latter morpheme *skeep* is obviously phonologically
    related to the independently occurring noun *skip* 'ship'
    in Afrikaans.

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13.   The Dutch examples are from De Vries 1975:166-168 and
      De Rooij-Bronkhorst 1980:163. Cf. also Kunsmann 1971:
      82ff for similar examples from German. Cf. Du Plessis
      1972:15ff for more examples from Afrikaans.

14.   The English examples are from Simpson 1983a:7, the Dutch
      ones from Baayen 1986:38 and the Afrikaans ones are from
      Du Plessis 1972:54ff and Ponelis 1979:235 respectively.
      For more examples from English, Dutch, and German, cf.
      e.g. Live 1965:433ff; Marchand 1969:125; Lipka 1972:
      176; Oehrle 1976:215f; Fraser 1976:6ff; Carlson and
      Roeper 1979:133; Simpson 1983b:9; and Van Voorst 1983:
      389. For more examples from Afrikaans, cf. Van der
      Merwe 1980:115ff.

15.   The English examples are from Simpson 1983b:10-11. The
      sources of the Dutch examples are indicated in the text.
      Examples of Afrikaans nominalisations that take verb-
      particle combinations as bases are provided by Ponelis
      (1979:236) and Van der Merwe (1980:171ff). For more
      examples from English, Dutch, German, and Norwegian,
      cf. e.g. Jespersen 1946:160-1; Marchand 1969:19, 110;
      Henzen 1969; Bolinger 1971:7-9; Adams 1973:9; Meyer
      1975:11-12; Fraser 1976:27f; Schultink 1977:159;
      Carlson and Roeper 1980:132; Selkirk 1982:27; Simpson
      1983a:7f; Kilby 1984:100; and Åfarli 1985:89.

16.   Booij (1977:160 n. 7) argues that a verb such as *omkoop-*
      baar has the structure [[*om*] [*koopbaar*]] rather than
      [[*omkoop*] *baar*], i.e. the structure of a compound of
      which the second constituent is a derived word. Cf.
      Baayen 1986:44f for an argument against Booij's analysis.
      Cf. also Botha 1984 for extensive arguments against a
      compound analysis of similar expressions in English and
      Botha 1980:par. 4 for arguments that the equivalent ex-
      pressions in Afrikaans should be analyzed as shown in
      (30).

17. Apart from the references cited in the text, cf. also
    Bolinger 1971:6-13, Quirk et al. 1972:81, Oehrle 1976:
    202ff, Kroch 1979:222-223, Randall 1982:17, Kilby
    1984:100, and Eilfort 1986:20ff for a discussion of the
    syntactic cohesiveness of verb-particle combinations in
    English. Cf. e.g. De Vries 1975:50-51, Van Riemsdijk
    1978:54-55, De Rooij-Bronkhorst 1980:188f, and Paulis-
    sen 1985:17 for Dutch; Höhle 1985:352-353 for German;
    and Åfarli 1985:93-95 for Norwegian.

18. Cf. chapter 3 n. 23 for a formulation of the rule of
    Gapping in English. Note the requirement that the gap-
    ped constituent be directly dominated by a V node.

19. The sentences in (39a) and (40a) are from Baayen 1986:
    34-35; those of (39b) are from Haegeman and Van Riems-
    dijk 1986:419; and those of (40b) are from Koster
    1975:124-125. In the case of (40b), I have added some
    structure in accordance with the structural indications
    provided by Baayen for the (a)-sentences. See also the
    references in n. 17 above for further discussion and
    examples.

20. The sentences in (41) are from Van Riemsdijk 1978:55,
    while the sentences in (42) are from Baayen 1986:35.
    Apart from these works, cf. Koster 1975:113 and the
    references cited there for discussion and/or illustra-
    tion of the Dutch rule of PP-*over*-V.

21. For discussion of the stress pattern of verb-particle
    combinations, cf. e.g. Taha 1964, Fraser 1965:19,
    Bolinger 1971:13ff, Keppens 1975, Meyer 1975:9ff, and
    Oehrle 1976:201f for English; Kunsmann 1971:2, 61 and
    Kintzel 1984:148ff for German; Åfarli 1985:94 for Nor-
    wegian; Schultink 1973, Booij 1977:160 n. 7, De Rooij-
    Bronkhorst 1980:163, and Baayen 1986:43-44 for Dutch.

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22. Cf. e.g. Booij 1977:par. 2.1.5 for a discussion of the
     stress patterns of Dutch compounds and Baayen 1986:43-44
     for a comparison of the stress pattern of verb-particle
     combinations with that of compounds. Cf. e.g. De Vil-
     liers 1965:147-148 and Kempen 1969:92 for some discus-
     sion of the stress pattern of Afrikaans compounds.

NOTES TO CHAPTER 3

1. According to Selkirk (1982:8) it is generally assumed
   in $\overline{X}$ syntax "that any nonhead category introduced on
   the right side of the arrow in a phrase structure rule
   is necessarily the <u>maximal projection</u> of the category".

2. The visibility of the internal structure of lexically
   generated $\overline{X}$ categories, has to be stipulated given Simp-
   son's acceptance of a principle known as the Bracket
   Erasure Convention. The Bracket Erasure Convention re-
   presents a general linguistic constraint on the inter-
   action of word formation rules and (lexical) phonologi-
   cal rules applying at various levels within the lexicon,
   in terms of a level-ordered theory of word formation
   known as Lexical Phonology and Morphology (hence: LPM)
   --- cf. e.g. Pesetsky 1979, Mohanan 1982 and Kiparsky 1982.

   In terms of this convention the internal categorial brac-
   kets of the words created at each level within the word
   formation component are erased once the word has "passed
   through" the relevant level. Thus the Bracket Erasure
   Convention ensures that the phonological (and morpholo-
   gical) rules applying at a given level do not have access
   to the internal structure (i.e. brackets) of a word
   formed on a lower level, but rather treat such words as
   indivisible units. For example, the -ed affix, as the
   regular past tense affix in English, is introduced at
   level 3. It cannot, therefore, be attached to a consti-
   tuent of a compound, because the internal brackets of the
   compound will have been erased at the end of level 2, the
   level at which compounds are formed.

3. Cf. Botha 1981:288-9 and 307-309 for a discussion of
   this evidential requirement.

4.   Cf. Botha 1981:289-290 and 309-313 for a discussion of
     this evidential requirement.

5.   Cf. e.g. Jackendoff 1975:662ff; Fraser 1976:104ff;
     Chomsky 1980:149ff; 1981:101, 146 n. 94, 224 n. 20;
     Zubizaretta 1982:221; Ruwet 1983.

6.   Cf. e.g. Fodor 1977:88, 180 and Newmeyer 1980: par.
     5.4.3, 5.6.2 for a discussion of the properties of
     global constraints, the kind of evidence that has
     been adduced for them, the arguments against their use,
     and an overview of the relevant literature.

7.   Cf. e.g. Pranka 1983:8 for a recent explicit exposition
     of the GB view of lexical insertion. Cf. e.g. Lapointe
     1980:442f for an exposition of the principles of lexi-
     cal insertion from a lexicalist point of view.

8.   Possible alternative proposals for the analysis of
     idioms, for instance, include those by Bresnan (1982:
     45ff) and Chomsky (1980:149ff and 1981:101, 146 n. 94,
     150 n. 124, 224 n. 20). On Bresnan's proposal, which
     is couched within the framework of LFG, the requirement
     that, in order to express a given idiomatic meaning, a
     verb must occur with (a) certain fixed complement(s),
     is expressed in the lexical entry of the verb. Thus,
     the fact that the verb *keep* in *keep tabs on* is related
     to the independent verb *keep*, but differs from it in
     meaning and subcategorization, is expressed in the
     lexical entry (i.e. the "lexical form" in LFG termino-
     logy) of *keep* by including in this entry the following
     statement:

     i. *keep* : V, 'KEEP-TABS-ON ((SUBJ), (ON OBJ))'
                                     (OBJ FORM) $=_c$ TABS

     Roughly, i. must be taken to mean that the verb *keep*

can select a specific object, viz. *tabs*, in combination
with which it has a specific meaning, i.e. the meaning
represented by KEEP-TABS-ON, and a particular subcate-
gorization, i.e. the subcategorization represented by
((SUBJ), (ON OBJ)). For an explanation of the forma-
lisms used, cf. Bresnan 1982. Lexical insertion pro-
ceeds in the normal way and the Projection Principle
--- see n. 14 below --- ensures that structures in
which *keep* occurs with the NP *tabs* are judged well- or
ill-formed according to whether they satisfy the require-
ments stated in i.

On Chomsky's proposal, an expression such as *keep tabs on*
is freely generated by the base rules and assigned the
same structure as a corresponding nonidiomatic expres-
sion. An "idiom rule" reanalyzes *keep tabs on* as a verb
(V^0) and assigns it its idiomatic meaning. According to
Chomsky (1981:101, 146 n. 94), such a reanalysis entails
adding a "string $\alpha V \gamma$ to the phrase marker of each ter-
minal string $\alpha \beta \gamma$, where β is the idiom". The effect
of reanalysis is that an expression such as *keep tabs on*
is associated with two structural descriptions at the
level of D-structure, viz. iia. which is the structure
generated by the base rules and iib. which is the re-
analyzed structure --- cf. Van Riemsdijk and Williams
1986:148.

  ii. a. $[_V$ keep$]_V$ $[_{NP}$ tabs$]_{NP}$ $[_{PP}$ $[_P$ on$]_P$ [NP]$]_{PP}$

      b. $[_V$ $[_V$ keep$]_V$ $[_{NP}$ tabs$]_{NP}$ $[_{PP}$ $[_P$ on$]_P]_V$ [NP]$]_{PP}$

Chomsky (1980:150) claims that the idiom rules responsible
for the analysis are "analogous to rules of the lexicon",
while Van Riemsdijk and Williams (1986:148), in their
discussion of Chomsky's proposal, claim that reanalysis
is "part of the lexical insertion rule for idiomatic
expressions".

It is clear from this rough outline of Bresnan's and

Chomsky's alternative proposals that both proposals
require an enrichment of the general linguistic theory.
Bresnan's proposal makes provision for an enrichment of
the lexicon, whereas Chomsky's proposal makes provision
for an enrichment of the base component.

9.   Cf. De Rooij-Bronkhorst 1980 for an earlier proposal
     entailing the postulation of an intermediate category
     level (i.e. a category level between V^0 and V^1) for
     verb-particle combinations in Dutch. Apart from noting
     the similarity between Baayen's proposal of a V^i cate-
     gory level and De Rooij-Bronkhorst's earlier proposal, I
     shall have nothing more to say about De Rooij-Bronk-
     horst's analysis. She provides no evidence, apart from
     verb-particle combinations, for the postulation of such
     an intermediate category level. Neither does she have
     anything to say about the status of such a category
     level in the grammar, the nature of the rule(s) by which
     it is generated, etc.

     Höhle (1985:352ff) arrives at a similar conclusion on
     the basis of evidence from German. He (1985:356) argues
     that verb-particle combinations in German can be ana-
     lyzed neither as words (V) nor as phrases (VP) on the
     basis of the same kind of evidence as that on which
     Baayen bases his argument for Dutch. According to Höhle,
     verb-particle combinations form what he calls a verbal
     complex within VP. The category level of this verbal
     complex is a matter for future research according to him.

10. Cf. e.g. De Rooij-Bronkhorst 1980:188 where a similar
     proposal is made.

11. Cf. e.g. Van Riemsdijk 1978:4f, par. 7, Lightfoot 1979:
     par. 1.5, Botha 1981:par. 10.4.3.2, and Chomsky 1981:
     7ff for some discussion of the status and evidential
     basis of markedness claims.

12.   Cf. e.g. Van Riemsdijk and Williams 1986:19ff for discus-
      sion and illustration of the A-over-A Principle which
      they formulate as follows:

      A-over-A Principle
      In a structure ... $[_A...[_A...]_A...]_A...$, if a
      structural description refers to A ambiguously,
      then that structural description can only ana-
      lyze the higher, more inclusive, node A.

13.   See the discussion in connection with (21) in par.
      3.3.2.3 below for Baayen's proposals regarding the ana-
      lysis of idioms such as (14b) within a grammar incorpo-
      rating an overlap area.

14.   The Projection Principle is formulated as follows by
      Chomsky (1981:29):

         Projection Principle

         Representations at each syntactic level (i.e.
         LF, and D- and S-structure) are projected
         from the lexicon, in that they observe the
         subcategorization properties of lexical items.

      Cf. e.g. Chomsky (1981:29ff) for a discussion of the way
      in which structures at various levels of representation
      are determined by lexical requirements given the Projec-
      tion Principle.

15.   Note that the phrase (24b) *een wilde bok schieten* is not
      unacceptable in its literal sense "to shoot a wild goat/
      buck". However, it is unacceptable with the meaning "to
      blunder".

16.   See the references in n. 7 above. Cf. also Newmeyer
      1980:88f and the references cited there for some discus-
      sion of lexical insertion in the older *Aspects* model of
      generative grammar. The discussion is relevant as it
      opposes two views of how lexical insertion takes place,

viz. the "matching" view and the "substitution" view.
According to Newmeyer, the question of which view is to
be preferred, "has received very little attention, with
some linguists ... adopting the matching format, but
most ... adopting the substitution format". Let us as-
sume, for the sake of argument that the view that lexi-
cal insertion may take the form of a matching of nodes,
(as opposed to substitution), as proposed by Baayen, is
nonobjectionable. Note that Baayen himself is not clear
about the nature of lexical insertion.   In a note he
(1986:67 n. 16) says that "lexical insertion can be con-
sidered to be a substitution transformation", yet he
consistently calls it "matching".

17.   Cf. also Allen 1978:111ff.

18.   Cf. also e.g. Lipka 1972:76; De Vries 1975:46; Aronoff
      1976:par. 3; Makkai 1978:421; Roeper and Siegel 1978:
      216; Taylor 1980:141; and Van Santen 1984:21 for the
      view that words are more readily assigned noncomposi-
      tional meanings than phrases.

      The assumption (34) is also implicitly accepted by lexi-
      calist morphologists who regard the semantic noncomposi-
      tionality of (classes of) derived and compound words as
      evidence for generating these (classes of) words by means
      of word formation rules in the lexicon. Cf. e.g. Halle
      1973:4, 6; Siegel 1974:24f; Jackendoff 1975:667f;
      Roeper and Siegel 1978:216f; Bresnan 1982:57 and Fabb
      1984:39.

19.   Cf. e.g. Strauss 1982:16-23 for an overview of much of
      the relevant literature. Cf. also the discussion in
      Wood 1986:ch. 3 and Di Sciullo and Williams 1987:ch. 1.

20.   Cf. e.g. Aronoff 1976:43-45; Adams 1973:12; Taylor
      1980:24f; Bauer 1983:par. 4.5.5 and 4.5.8; and Wood

1986: 21, as well as the references cited in the latter
two works, for a discussion of the relationship between
productivity and semantic compositionality.

21.   Cf. e.g. Adams 1973:12; Aronoff 1976:par. 3; Booij
      1977:par. 1.1.3; Bauer 1983:par. 4.2.3; and Kastovsky
      1986 for various uses of the notion 'productive' in
      generative morphology. For a critical discussion of
      various uses of the concept of productivity within trans-
      formational generative grammar, cf. Botha 1968:par. 4.3.
      Rainer (1985) reviews the various uses of the notion
      'productivity' in the literature on word formation, and
      provides an extensive bibliography.

22.   Cf. e.g. Siegel 1974; Allen 1978; Pesetsky 1979;
      Kiparsky 1982 ; Strauss 1982; Mohanan 1982; Pranka
      1983; and Archangeli 1983 for proposals or discussions
      of proposals to this effect.

23.   Selkirk (1982:28) refers to the Gapping Rule which is
      formulated as follows by Stillings (1975:262):

$$\text{NP} \quad \text{V*} \quad \text{C} \quad \begin{matrix} \text{AND} \\ \text{OR} \end{matrix} \quad \text{NP} \quad \text{V*} \quad \text{C}$$

$$1 \quad\quad 2 \quad\quad 3 \quad\quad 4 \quad\quad 5 \quad\quad 6 \quad\quad 7$$

$$\Downarrow$$
$$\emptyset$$

where C is a variable which ranges over single consti-
tuents, i.e. it represents the label of any single non-
terminal node such as NP, PP, ADV, VP, S, etc. Accord-
ing to Stillings, V* is a variable representing any
string of (not necessarily connected) contiguous lexical
items, each of which is "in the range of V", i.e. direct-
ly dominated by a V node. Thus, V* could represent a
string of verbs, V_1, V_2, V_3..., etc., or a V $\sim$ NP string
forming a complex V.

24. In order to account for the occurrence of passive senten-
    ces such as *The bed looks slept in* in English, Anderson
    (1977:374) proposes that the lexicon contain a redundancy
    rule relating simple verbs and complex verbs consisting
    of a verb and a preposition. Notice, however, that the
    redundancy rule in question relates two lexical catego-
    ries and <u>not</u> a lexical and a phrasal category. Selkirk's
    proposed lexical rule would therefore differ in an essen-
    tial respect from a redundancy rule such as that proposed
    by Anderson.

25. Selkirk is not the only morphologist who holds that rules
    of inflection should be able to intermingle with other
    word formation rules. Cf. also e.g. Strauss 1982:76,
    Thomas-Flinders 1983:149, and Sproat 1985:414ff. For an
    argument that rules of inflection should be ordered after
    rules of compounding, cf. Kiparsky 1982 : 9ff.

26. The structures in (53b i, ii) are exactly parallel to the
    structures i. and ii. below which are presented by Sel-
    kirk (1982:55) to illustrate the "systematic ambiguity"
    which her analysis allows for.

```
i.          V                      ii.          V
         [+ past]                            [+ past]
     P _____ V                        V _____ Af
              [+ past]                [+ past]      [+ past]
         V ____ Af                  P _____ V
      [+ past] [+ past]                  [+ past]
         |       |                   |       |        |
        out    dance   -ed          out    dance     -ed
```
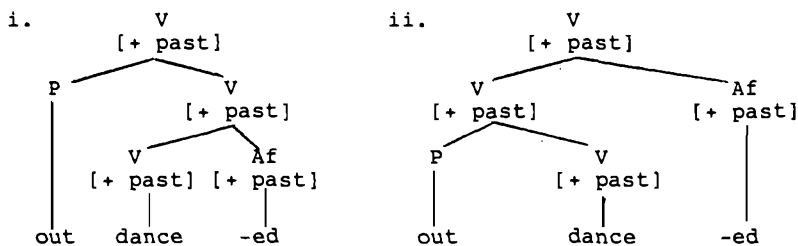
According to her (1982:56), "There is no obvious evidence
that the grammar chooses one analysis over the other. Se-
mantically, both alternatives are interpretable, giving
the same result. Structurally, i.e. syntactically, both
of these possibilities are available, given our indepen-
dently motivated system". The ill-formedness of (53a ii)

*clean outed would constitute evidence for choosing the
analysis i. and rejecting ii.

27.   The acceptability judgments that are required in order
      to decide whether or not sentences such as those exempli-
      fied in (54) are grammatical are extremely subtle, as
      pointed out by Kroch (1979:222). He cites the following
      grammatical equivalents of the (ii)-sentences in (54b)
      and (54c) respectively:

      i.   The attendant filled the tank PART WAY up.
                                              [cf. (54b ii)]
      ii. Sally put the dessert out and her husband
           the dinner dishes away.   [cf. (54c ii)]

      However, the grammaticality of sentences such as these
      cannot be adduced as evidence in favour of Selkirk's
      phrasal analysis of discontinuous verb-particle combina-
      tions, unless an alternative explanation can be given
      for the ungrammaticality of the corresponding sentences
      in (54). Rather, as Kroch (1979:223) puts it,

           "The great diversity of behavior which these
           combinations exhibit is more likely to be
           caused by semantics (perhaps also by resi-
           dual historical factors) than by structural
           differences for which the motivation is
           weak."

      Note, too, that the existence of grammatical correlates
      of sentence (54cii) --- e.g. ii. above --- consti-
      tutes counterevidence to a potential alternative expla-
      nation for the ill-formedness of (54c ii). According to
      Stillings's (1975:262) rule of Gapping, only one consti-
      tuent is allowed to the right of the deletion site. If
      this was correct, the fact that in (54c ii) two consti-
      tuents, viz. the NP the figures and the PP over, appear
      to the right of the deletion site, would explain the
      ill-formedness of this sentence. On this alternative
      account, the ill-formedness of (54c ii) would no longer
      constitute counterevidence to Selkirk's phrasal analysis

of discontinuous verb-particle combinations. But on
such an account, ii. above should be ungrammatical as
well, which it isn't according to Kroch.

28. In a discussion of the effect of the heaviness of the
direct object NP on the positioning of particles, Hoff-
man (1978:342) defines the notion 'heaviness' as follows:

> "Heaviness is a relation between sisters. The
> heaviness of a particular constituent is deter-
> mined by its length (syllable count), its
> internal complexity (node count), its stress
> marking, and perhaps even its pragmatic value.
> However, the absolute heaviness of a consti-
> tuent is not the significant variable. The
> relevant factor is the heaviness of the NP sis-
> ter relative to that of the PP sister."

Cf. also Oehrle 1976:204 for a discussion of the notion
'heaviness' in connection with the rule of Heavy-NP Shift
and Bolinger 1971:51ff for a discussion of the interac-
tion between stress, length and rythm on the one hand and
"news value" on the other hand as factors determining
particle position.

29. The assumption (63) is a subcase of the principle of
direct syntactic encoding --- cf. Bresnan and Kaplan
1982:xxviii. An outline of the basic assumptions of
the variant of generative grammar known as Lexical Func-
tional Grammar is given in the cited Introduction to
(Bresnan 1982 (ed.)) written by Bresnan and Kaplan.

NOTES TO CHAPTER 4

1. Emonds (1972:548) first proposed that particles in Eng-
    lish be analyzed as (intransitive) prepositions.   Par-
    ticles had previously been assumed either to belong to
    an independent category, viz. the category Particle, or
    to be represented by a feature complex in the substruc-
    ture of the verb. For the former position, cf. e.g.
    Legum 1968:50 and Kunsmann 1971:170ff. For the latter
    position, cf. e.g. Fraser 1966:48-49 and Jacobs and
    Rosenbaum 1968:100ff. Other linguists, apart from
    Emonds, who have claimed that particles are nondistinct
    from intransitive prepositions in English are, notably,
    Jackendoff (1977:32, 68-69) and Fiengo (1980:60).

2. For many particles, also known as separable prefixes, in
    Dutch there exists a corresponding, phonetically identi-
    cal morpheme which, although it resembles a free mor-
    pheme, behaves exactly like a bound morpheme and for
    this reason is often considered to be an (inseparable)
    prefix. Baayen (1986:33) cites the following example:

    i. *Over* as an inseparable prefix:

        a.   *Jan* <u>*over+wéegt*</u> *het voorstel.*
             John over weighs the proposal
             'John considers the proposal.'

        b.   *dat Jan het voorstel* <u>*over+wéegt*</u>
             that John the proposal over weighs
             'that John considers the proposal'

    ii. *Over* as a particle/separable prefix:

        a.   *Jan* <u>*weegt*</u> *die brief* <u>*óver*</u>.
             John weighs the letter over
             'John weighs the letter again.'

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b.   *dat Jan de brief óver+weegt*
     that John the letter over weighs
     'that John weighs the letter again.'

As indicated by the "´" in the examples above, verb-
particle combinations differ from the phonetically iden-
tical prefix + verb constructions as regards the placing
of the primary stress. Whereas in verb-particle combina-
tions the primary stress is on the particle, it is the
verb which carries the primary stress in the correspond-
ing prefix + verb constructions.

3.   The principles concerned interact to determine the dis-
     tribution of NP types and NP positions in syntactic
     structures. In terms of the principles of Case assign-
     ment some properties of an NP are determined by the pre-
     sence or absence of a governing Case assigner --- cf.
     e.g. Van Riemsdijk and Williams 1986:ch. 14. By the
     principles of θ-role assignment an NP is, or is not,
     assigned argument status with respect to some predicate
     --- cf. e.g. Van Riemsdijk van Williams 1986:ch. 15.
     By the principles of the binding theory the possibility
     or not of the occurrence of a given type of NP in a
     given structural position is determined by whether or
     not an NP in that position is free or bound in its
     governing category --- cf. e.g. Van Riemsdijk and
     Williams 1986:ch. 17. The Empty Category Principle
     states the licensing condition for the occurrence of an
     empty category in terms of a notion of proper government
     --- cf. e.g. Van Riemsdijk and Williams 1986:ch. 18.

     For a definition of the notion 'binding', cf. e.g. Van
     Riemsdijk and Williams 1986:266. For a definition of
     the structural relations of government and proper govern-
     ment, and of what counts as a governor, cf. e.g. Van
     Riemsdijk and Williams 1986:291-292.

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4. The Projection Principle is formulated as follows by
   Van Riemsdijk and Williams (1986:252):

   i. <u>Projection Principle</u>

      The θ-Criterion holds at D-structure, S-
      structure and LF.

   The θ-Criterion is informally formulated as follows
   by them (1986:243):

   ii. <u>θ-Criterion</u>

      Every NP must be taken as the argument of some
      predicate; furthermore, it must be taken so
      at most once.

   See also Chomsky's formulation of the Projection Princi-
   ple in n. 14 to chapter 3.

5. Although correctly observing the problematic facts,
   Baayen wrongly concludes that these facts have a bearing
   on the adequacy of the word formation rule proposed by
   Van Riemsdijk to generate the complex verb structure
   into which the particle is moved by the P-shift rule (2).
   According to Baayen (1986:39), the word formation rule
   generating the complex verb structure $[_V[_P \text{\_\_\_}][_V\text{lopen}]]$
   "underdetermines the syntactic configurations which its
   output projects around itself", such a verb having "no
   clear status with respect to its argument structure".
   But this, of course, is a problem with all word formation
   rules: their output is often characterized by semantic
   noncompositionality and idiosyncratic subcategorization
   properties. Such idiosyncracies must merely be listed
   in the lexicon as idiosyncratic properties of particular
   complex words. Information about the semantic and sub-
   categorizational idiosyncracies of the products of word
   formation rules need not be specified by the rules them-
   selves. Word formation rules are considered by many
   generative morphologists to be merely generalizations
   about the possible <u>structures</u> of the complex words of a

language. Cf. e.g. Carlson and Roeper 1980 and Lieber
1981:65ff for some discussion of this issue.

6.   Cf. Neijt 1979 for a discussion of Gapping in Dutch.
      In broad terms, a rule of V-Gapping in Dutch deletes a V
      and, optionally, one or more (not necessarily contiguous)
      constituents in coordinations of S', S or VP, subject to
      various conditions such as Recoverability.

7.   Booij (1983:1) proposes a nonsyntactic, prosodic rule of
      Coordination Reduction "whereby parts of complex words
      are deleted under identity with parts of complex words
      in the same phrase". According to Booij (1983:2) the
      latter rule "does not violate the Lexical Integrity prin-
      ciple, because it is a prosodic rule, not a syntactic
      one". It could be argued that, whereas the syntactic
      Gapping rule has applied in (15a), it is the prosodic
      Coordination Reduction rule which has applied in (15b).
      This would make it possible to maintain an analysis on
      which *uit + lopen* is a syntactic string in (15a) and a
      complex word in (15b).

      However, given Booij's (1983:9) formulation of the rule
      of Coordination Reduction, the latter rule cannot have
      applied in the case of (15b). Booij's rule includes a
      condition which states that the deleted constituent must
      be adjacent to the conjunction. This is not the case in
      (15b). The fact that (15b) is nevertheless well-formed
      indicates, therefore, that the deletion of *lopen* in (15b)
      is not the result of the application of Booij's rule of
      Coordination Reduction in complex words.

8.   *in* in (24b) is a motional postposition taking the NP
      het bos as complement. Like particles, motional post-
      positions can apparently be incorporated in the verb
      and be moved along with the verb by the rule of V-raising.
      Cf. Van Riemsdijk 1978:par. 3.7, Stowell 1981:455ff, and
      Baayen 1986:37, 42f for discussion.

9.   Cf. Stowell 1981:87 and the discussion in par. 4.3.2.1
      below.

10.   If the NP *a telegram* could not be assigned Case in (34),
       the structure would be ruled ill-formed by a Case Filter
       which rejects any structure containing a noun which is
       not Case-marked.   Cf. Stowell 1981:111 for discussion.

11.   Invariant order, such as that displayed by particles
       and unstressed object pronouns, is a characteristic pro-
       perty of clitics, according to Stowell (1981:120, 306).
       Cliticization, according to him (1981:284ff), is also a
       word formation process. Other grammarians have accounted
       for the facts of (35a) in different ways. Fraser (1965:
       137) and Emonds (1972:548), who account for the diffe-
       rent structural positions of the particle in terms of a
       rule of Particle Movement, express the restriction on
       the particle position in sentences containing a pronomi-
       nal object as a rule-specific restriction on the appli-
       cation of the rule in question. Bolinger (1971:ch. 4)
       and Oehrle (1976:221) consider an interplay of phonolo-
       gical and discourse factors to be responsible for the
       well- or ill-formedness of sentences such as those of
       (35). for a detailed proposal to this effect, cf. Hoff-
       man 1978:342. See also par. 3.4.2.3 above for particu-
       lars of Hoffman's proposal.

12.   Cf. Aronoff 1976:51f for some discussion.

13.   The situation is actually somewhat more complicated.
       Stowell (1981:455ff) assumes that Dutch also has a syn-
       tactic rule of Reanalysis which reanalyzes an adjacent
       preposition or postposition and a verb so as to form a
       ccmplex verb ---   see n. 16 below.   Thus, assu-
       ming that PP and S are bounding nodes for Subjacency in
       Dutch, as proposed by Van Riemsdijk (1978) and accepted
       by Stowell (1981:457), the well-formedness of (i), in

which a WH-phrase has apparently been moved across both
a PP and an S boundary, can be explained by assuming
that (i) has the reanalyzed structure shown in (ii)
rather than the structure shown in (iii). The latter
structure is the structure prior to the application of
Reanalysis according to Stowell (1981:457).

   i.   *Waar heeft zij vaak over gesproken?*
       where has   she often about spoken
     'What has she often spoken about?'

  ii.   *waar$_i$ heeft zij vaak [e]$_i$ [$_V$[$_P$ over][$_V$gesproken]]*

iii.   *waar$_i$ heeft zij vaak [$_{PP}$[e]$_i$[$_P$ over]] [$_V$gesproken]*

In order to account for the fact that intransitive prepo-
sitions and surface postpositions such as *over* in (i)
above cannot be moved along with the verb by V-raising,
despite the fact that they may be reanalyzed as part of
the verb, Stowell (1981:463) proposes that V-raising too
should be assumed to be a word formation rule.. If V-
raising is a word formation rule, rather than a rule of
syntax, it follows that it cannot apply to complex verbs
created in the syntax by application of Reanalysis. Thus
it is predicted that only particles and motional postpos-
itions, which can be incorporated into the verb by an
incorporation rule applying in the (extended) word form-
ation component, will be able to appear adjacent to the
verb in V-raising constructions.

14.   The rules of stress assignment, being phonological rules,
      are sensitive to phonological boundaries by definition.
      For discussion of the phonological conditioning of mor-
      phological word formation rules, cf. e.g. Siegel 1974,
      Allen 1978 and Kiparsky 1982.   See also the discussion
      of Simpson's proposal in par. 3.2 above.

15.   According to Stowell (1981:304ff) the NP constituent of

a complex verb created by the extended word formation
rule of NP Incorporation absorbs the Case feature which
would normally be assigned by the verb to a lexical NP
appearing in a particular subcategorized position in $\overline{V}$.
As a result, the incorporated NP is linked with the rele-
vant empty subcategorized position by virtue of govern-
ing it and having absorbed the Case feature which would
normally have been assigned to it. Thus, according to
Stowell (1981:305) the sentences (31b) and (33) above ac-
tually have the structures (i) and (ii) respectively.

i.   *Kevin $[\overline{v}$ $[_V$ turned* $-$ *[the light]$_i$* $-$ *on]* $-$ *[e]$_i$]*

ii.   *Wayne $[\overline{v}$ $[_V$sent* $-$ *[Robert]$_i$]* $-$ *[a telegram]* $-$ *[e]$_i$]*

The phonetically empty position in $\overline{V}$ in (i) above is the
subcategorized direct object-NP position, whereas the
empty position in $\overline{V}$ in (ii) is the subcategorized indi-
rect object-NP position. These subcategorized positions
must appear at D-structure, S-structure and LF in order
to satisfy the Projection Principle. Cf. also Stowell
1981:364f n. 7 for technical detail.

16. According to Stowell (1981:438ff), a rule of Reanalysis
     is responsible for reanalyzing strings of adjacent con-
     stituents within a VP so as to form a complex verb.
     Thus, according to Stowell (1981:444), reanalysis can
     explain why extraction of the WH-phrase *which boys* from
     the complex NP in. (ii) below is possible, in apparent
     violation of Subjacency. He argues that the extraction
     is possible, as evidenced by the well-formedness of (i),
     because the string V-NP-P has been reanalyzed as a com-
     plex V, as shown in (iii).

     i.   *[which boys]$_i$ did you take pictures of [e]$_i$*

     ii.   *$[\overline{v}$ $[_V$ take][$_{NP}$[$_{NP}$ pictures][$_{PP}$[$_P$ of][$_{NP}$which boy]]]]*

iii. $[_{\overline{V}} [_V [_V take] [_{NP} pictures] [_P of]] [_{NP} which\ boy]]$

He (1981:442) assumes that the rule of Reanalysis, which
is responsible for deriving (iii) above from (ii), is
subject to a "structure-preserving" condition. This con-
dition stipulates that the structure created by the rule
of Reanalysis must be string-equivalent to a structure
created by the word formation rules of the grammar con-
cerned. Thus (iii) above is a possible output of the
Reanalysis rule, because it is string-equivalent to the
structures created by the interaction of the extended
word formation rules of NP Incorporation and Particle
Incorporation, as illustrated in (iv).

iv. Kevin $[_{\overline{V}} [_V [_V switched] [_{NP} the\ light] [_P on]]]$

According to Stowell (1981:454), Reanalysis must be as-
sumed to apply at S-structure, or at least after appli-
cation of Move $\propto$, due to an antecedent condition on
the rule of Reanalysis. This condition states that a
string of constituents may be reanalyzed as a complex
word only if the resulting word governs a constituent
which is bound by an antecedent to the left of the (re-
analyzed) word, i.e. the trace of a moved constituent.

17. Cf. Stowell 1981:296-300 for a discussion of the pro-
blems listed above.

18. The particle *on* is represented as a PP containing an in-
transitive preposition in (44) in accordance with
Stowell's (1981:339) assumption that particles are in-
transitive prepositions. However, a case could also be
made for analyzing *on* as a preposition or adjective head-
ing a small clause adjunct, analogously to the following
examples presented by Stowell (1981:263):

   i.   *Scott wandered home [PRO drunk].*

  ii.   *The farmer loaded the truck [PRO full of hay].*

iii.   *Jack rolled the dough [PRO into a ball].*

 iv.   *John emerged from the meeting [PRO confused by their reaction].*

The differences between (44) and a small clause analysis, as exemplified in (i)-(iv) above, are irrelevant to the present discussion. The small clause analysis is mentioned here to show that Stowell's framework could, in principle, allow an analysis of discontinuous verb-particle constructions other than the incorporation analysis proposed by him.

19.   Idiom chunk NPs are NPs such as *advantage,* *tabs* and *note* in expressions such as *take advantage of, keep tabs on* and *take note (of).* These NPs are highly restricted in their distribution in the sense that they generally occur only in conjunction with some specific verb and do not have the same freedom of distribution as other NPs. Cf. Radford 1981:161-2 for some discussion. Chomsky (1981: 37, 101, 146 n. 94) proposes that a sequence of a verb and an idiom chunk NP, such as *take advantage of,* is reanalyzed as a complex V by an idiom rule applying "in the base after lexical insertion", i.e. at the level of D-structure.

20.   Thus, Fraser (1976:par. 1.3) observes that "it is clear that we presently have no way of determining from any syntactic or semantic properties associated with a verb whether or not it will combine with a particle in one way or another". And, although it appears as if phonological considerations may play a role in determining whether or not a verb can combine with a particle, "it is clear that phonological considerations alone will not determine the conditions for verb-particle combinations". Similarly, Bolinger (1971:17) expresses doubts about the

possibility of establishing "a closed system" of verbs
that are able to appear in verb-particle combinations.

21.   Thus, according to Stowell (1981:485 n. 28), "incorpo-
rated postpositions are analogous at some level to
clitics and other incorporated NPs". Clitics, on Sto-
well's (1981:304f) account, govern a specific, phone-
tically empty, subcategorized position in $\overline{V}$ in which a
lexical NP would normally appear if the clitic were
absent. This means that all positions subcategorized
by a verb will appear at D-structure, S-structure, and
LF although a subcategorized position may remain phone-
tically empty. See n. 15 above for details.

NOTES TO CHAPTER 5

1. See (41)-(43) in par. 3.4 above for a summary of
    Simpson's and Baayen's positions, and (65)-(67) in par.
    3.5 for a summary of Selkirk's position.

2. See par. 3.2.2.1 for a discussion of the ad hoc nature
    of Simpson's $\overline{V}$ rule; par. 3.3.2.1, 3.3.2.2, and 3.3.2.3
    for discussion of the ad hoc nature of Baayen's V^1 cate-
    gory level; and par. 3.5.2.1 for discussion of the ad
    hoc nature of Selkirk's lexical rule.

3. This assessment of Stowell's claim (5a) may appear to
    contradict what was said in par. 4.3.3 above. Recall
    that it was shown there that Stowell could be said to
    accept the strong version of the Lexical Integrity Hypo-
    thesis. However, this was shown to be possible only if
    special assumptions are made about the sensitivity of
    lexical insertion rules to the phonological structure
    of (complex) words.

4. See (29)-(30) and the following discussion in par.
    4.2.3 for Van Riemsdijk's position and (68)-(69) and
    the following discussion in par. 4.3.3 for Stowell's
    position.

5. Recall that it was shown in par. 4.2.3 that the cohe-
    siveness of the particle and the verb with regard to
    V-raising could be explained by assuming that the
    A-over-A Principle would prevent movement of the verb
    out of the complex V node. But, as was pointed out,
    the A-over-A Principle cannot explain why the particle
    cannot be moved out of the complex V node by Topicali-
    zation or by P''' extraposition. It was argued, however,
    that the latter property would follow from the assign-

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ment of word structure to verb-particle combinations
given the assumption that the constituents of syntacti-
cally complex words cannot be separated by syntactic
rule.

6. See (41) and (42) in par. 4.3.2.1 above for a list of
the properties ascribed to extended word formation rules
by Stowell.

7. The shortcomings indicated here are not the only short-
comings of the analysis in question. See par. 4.3.2.2
above for a discussion of another problematic conse-
quence of the adoption of this analysis rather than a
movement analysis.

NOTES TO CHAPTER 6

1. Cf. e.g. Aronoff 1976:4, 1983:355-6; Bauer 1983:par.
   1.2; Botha 1968:par. 2.6, ch. 4; 1981:par. 1.2; Fabb
   1984:par. 4.4.1; Hoekstra et al. 1980:1-3; Kintzel 1984:
   1-4; and particularly Scalise 1984:ch. 1 for overviews
   of the treatment of word formation in pre-1970 versions
   of transformational grammar.

2. With the replacement of the single-headed arrow by a
   double-headed one, the representation (1) could be made
   also to reflect a slightly weaker lexicalist conception
   of the relationship between morphology and syntax. This
   is the one subscribed to by lexicalist morphologists who
   do not accept the No Phrase Constraint and who therefore
   accept that syntactic phrases may form the bases of word
   formation rules --- see the discussion in par. 1.2
   above.

3. Di Sciullo and Williams (1987:54) point out, however,
   that the theory-internal nature of the propositions con-
   stituting the S-structure insertion theory makes it less
   attractive than an alternative view which they call the
   "sentence form" view. On the latter view, the fact that
   syntactic rules and principles do not have access to
   word-internal structure follows from a definition of syn-
   tax on which syntax is about "sentence forms", i.e. "word-
   less" phrase markers, rather than about sentences. They
   grant, however, that it is empirically difficult to dis-
   tinguish the "sentence form" view from the S-structure
   insertion view.

4. See (30) in par. 3.4 above for a formulation of the Brac-
   ket Erasure Convention. A version of the Morphological
   Island Constraint was presented as (31) in the same para-
   graph.

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5.   *Words with inflectional morphology* have been assumed to
     be formed by rules of syntax by morphologists such as
     Siegel (1974), Aronoff (1976), Allen (1978), Anderson
     (1982), and Pranka (1983).

6.   The schema (2) does not adequately represent the construal
     of the relationship between morphology and syntax implicit
     in the work of, e.g., Stowell (1981), Zubizaretta (1982,
     1985), Sadock (1983, 1985), and Baayen (1986). These lin-
     guists assume, on the one hand, that the grammar contains
     an autonomous morphological component. On the other hand,
     they claim that the morphosyntactic properties of some
     syntactically complex words can be fully specified neither
     by morphological nor by syntactic rules and principles
     alone. Their view, which is in a sense a combination of
     the one represented in (1) and the one represented in (2),
     could be schematized as follows:
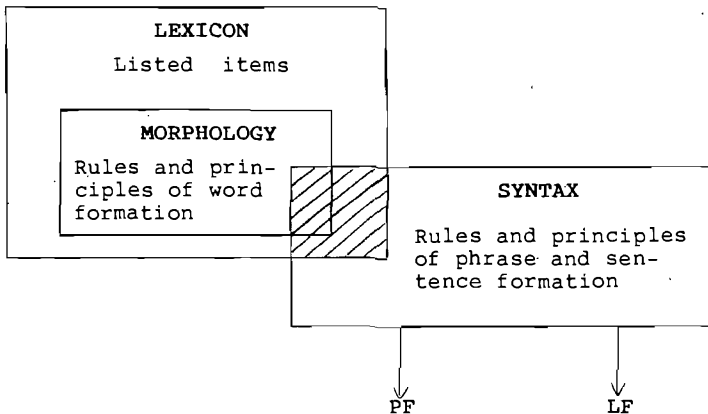
The shaded area in the above schema ambiguously represents
an area of word formation which is subject either to both
morphological and syntactic rules and principles --- e.g.
Baayen's overlap component discussed in par. 3.3.2.1 above
--- or to rules and principles that are neither purely mor-
phological nor purely syntactic --- e.g. Stowell's extended
word formation rules discussed in par. 4.3.2.1 above.

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7. Fabb does not indicate whether syntactic rules may be al-
lowed to change word structure, e.g., by moving consti-
tuents into or out of word structures.

8. This is a somewhat simplified representation of Baker's
view of the aim of a theory of morphology. Morphology
theory in fact has two tasks according to him (1985:82),
viz.

   i. to determine whether a structure dominated by an X^0
   level category is grammatical or not in a given
   language, and

   ii. to assign a "phonological shape" to every well-
   formed word structure generated in the lexicon or
   in the syntax.

9. As noted in par. 6.1, transformationalist theories of
word formation such as those proposed by, e.g., Lees (1960)
can also be termed theories of syntactic word formation.
Such theories will not be considered here, however.

10. A similar proposal has apparently been made by H. Walinska
de Hackbeil in her Ph.D. dissertation entitled "The roots
of phrase structure: the syntactic base of English mor-
phology" (University of Washington, Seattle WA. 1986).
Unfortunately I have not had access to this study and
therefore merely note its existence.

11. Sproat (1985:202ff) presents an explicit, highly techni-
cal argument against accepting the No Phrase Constraint
as a constraint on the occurrence of syntactic phrases
(specifically maximal projections) as nonhead constituents
of synthetic compounds in English. The gist of the argu-
ment is that the nonhead constituent of a synthetic com-
pound must be able to satisfy the internal thematic role
of its verbal sister. Sproat (1985:154ff) assumes three
different mechanisms by which a verb may discharge its

theta role, the details of which do not concern us here.
Of these, only one, viz. theta identification, is avail-
able given the structure assigned to synthetic compounds
within Sproat's framework. Theta identification, however,
requires that the thematic grid of both the verbal head
and the nonhead constituent contain an "open position",
i.e. a theta role that has not yet been discharged. If
the thematic grid of the nonhead constituent must contain
an open position, it follows that this constituent cannot
be a maximal projection since all theta roles are dis-
charged within a maximal projection on Sproat's theory.

12.   Lieber (1984:196) stipulates that X^0 be assumed to count
       as a bounding node for Subjacency. This would rule out
       the movement of constituents into or out of words, i.e.
       X^0 categories.

       Sproat (1985b:194) argues that there is independent reason
       to believe that the grammar contains a requirement to the
       effect that a nonmaximal projection cannot serve as the
       antecedent of an anaphor or pronoun. Given this require-
       ment, the anaphoric islandhood of words follows, at least
       for English, since words (X^0 categories) cannot contain
       maximal projections --- see n. 11. Thus, there is no
       need to appeal to a separate principle such as the Lexical
       Integrity Hypothesis to account for the anaphoric island-
       hood of words. See n. 11 to chapter 1 for an illustration
       of the phenomenon of anaphoric islandhood.

13.   It should be noted at this point that the combinations in
       (7) above are all listed as verbs in dictionaries of Afri-
       kaans. They are also assumed to be "(complex) verbs" by
       grammarians of Afrikaans such as, e.g., Kempen (1969:298ff),
       Du Plessis (1972:69), and Ponelis (1979:232ff). However,
       any resemblance between the (pretheoretical) notion 'com-
       plex verb' with which these grammarians operate and the
       theoretical notion 'complex verb' employed in this study
       is no more than a superficial, terminological resemblance.

14. See also the examples in (45)-(46) in par. 2.7 above.

15. See also the examples in (47) in par. 2.7 above.

16. See also the examples in (52b, c) in par. 2.7 above.

17. See also the examples in (49b) and (51b) in par. 2.7 above.

18. See also the example (53a) in par. 2.7 above.

19. Cf. e.g. Fraser 1965, Ross 1967, Legum 1968, Jacobs and
    Rosenbaum 1968, and Oehrle 1976 for the kinds of arguments
    that have been presented in support of a similar claim
    about verb-particle combinations in English.

20. Baker (1985) proposes an alternative way of deriving the
    well-formedness of structures such as (19). On his pro-
    posal, a complex X^0 category may be created by application
    of the rule Move α. In essence, Move α may move an
    X^0 category from its D-structure position and adjoin it to
    a governing X^0 constituent to create a complex X^0 consti-
    tuent. The well-formedness of the resulting structure is
    determined by principles such as the Empty Category Prin-
    ciple, principles of theta assignment, etc. This alter-
    native will not be explored here, given that similar "in-
    corporation" analyses, viz. those proposed by Van Riems-
    dijk and Stowell, have been shown to give rise to incor-
    rect predictions about the properties of verb-particle
    combinations in chapter 4 above.

21. The claim being made here is not that a maximal projection
    cannot appear in the nonhead position of a compound.
    Phrasal compounds, i.e. compounds with a phrasal nonhead
    constituent, are indeed possible as Lieber (to appear)
    herself is at pains to show --- see discussion below.
    The claim being made here is that the nonhead constituent
    of (nonphrasal) compounds such as (19) is typically not a

maximal projection.

22. A detailed discussion of the predictions made by Lieber's
    set of principles and parameters, as well as of possible
    counterexamples to the claims made about word structure
    in English, falls outside the scope of this study. The
    reader is referred to the discussion in (Lieber to appear).

23. The facts concerning VP and PP are actually more compli-
    cated. Thus, as far as PP is concerned, it should be
    noted that Afrikaans has more prepositions than postposi-
    tions, and that postpositions very often co-occur with a
    preposition, as in (27c) above. As far as VP is concerned,
    it is misleading to claim that it can be either head-
    initial or head-final. When V is preceded by its comple-
    ments in Afrikaans, it can indeed be assumed to occupy
    the final position in VP. However, on most analyses of
    the V-second phenomenon, V is assumed to have moved out
    of VP in sentences in which it precedes its complements.
    Thus, Travis (unpubl.:8-10) proposes that V can only be
    moved to the positions shown in the structure below in
    languages such as German:

If no movement takes place, sentences such as i. are de-
rived in German (the Afrikaans equivalent is given imme-
diately below the German sentence):

i. *Ich weiss dass die Kinder [ₓₚ das Brot   gegessen haben].*
    Ek   weet   dat die kinders [ₓₚdie brood geëet   het].
    I   know   that the children   the bread eaten   have
    'I know that the children have eaten the bread.'

Movement of V to INFL yields sentences such as ii.

ii. *[ᵢₚ Die kinder   haben [ₓₚ das Brot   gegessen]].*
     [ᵢₚ Die kinders het   [ₓₚ die brood geëet]].
         the children have   the bread eaten
     'The children have eaten the bread.'

And movement to COMP is claimed to have taken place in
sentences such as the following:

iii. *[꜀ₚ Heute   haben [ᵢₚ die Kinder [ₓₚ das Brot   gegessen]]].*
     [꜀ₚ Vandag het   [ᵢₚ die kinders [ᵢₚ die brood geëet]]].
         today   have   the children   the bread eaten
     'Today the children ate the bread.'

If analyses such as those proposed by Travis are correct,
it cannot be claimed that VP in German (and in Afrikaans)
can be either head-initial or head-final, because V never
in fact occurs in the initial position in VP. It would
be correct, however, to claim that V can be either preceded
or followed by its complements.

24. Cf. Stowell 1981:ch. 4 for a discussion of the specifier
     system in English.

25. The prediction is probably correct. Indications are that
     complex words in Afrikaans are predominantly right-headed.
     Possible exceptions are prefixed words such as those shown
     in i. in which the prefix is category-changing and hence
     could be argued to be syntactically the head of the derived
     word.

         i. *[ge + juigᵥ]ₙ*   *[ver + soetₐ]ᵥ*
             PREFIX cheer   PREFIX   sweet
             'cheering'   'to sweeten'

$[ont + bos_N]_V$ $[be + vriend_N]_A$

   de   forest   be   friend

 'to deforest'   'befriended'

Other possible exceptions are compounds with an additive
meaning, such as those shown in ii. and iii.

ii. $[doof_A + stom_A]_A$ $[dom_A + astrant_A]_A$

     deaf   mute   stupid cheeky
    'deaf-mute'   'impudent'

    $[wuif_V + groet_V]_V$ $[stoot_V + skraap_V]_V$

     wave   greet   push   scrape
    'to greet with a wave' 'to bulldoze'

iii. $[sit_V + lê_V]_V$ $[kok_N + huishoudster_N]_N$

     sit   lie   cook   housekeeper
    'to lounge'   'cook-cum-housekeeper'

    $[huil_V + kreun_V]_V$ $[nukkerig_A + geprikkel_A]_A$

     cry   groan   moody   irritable
    'to cry and groan   'moody and irritable'
    simultaneously'

In the case of compounds such as those exemplified in ii.
and iii., both constituents are of the same category as
the compound as a whole. Syntactically neither can
therefore be identified as the head. Semantically, too,
neither constituent appears to be more prominent than the
other. This is most obvious in the case of the coordi-
native compounds shown in iii. The order of the consti-
tuents in these compounds can be switched without affect-
ing the meaning in any way. The compounds in ii., by
contrast, may be argued to have two meanings, only one of
which is truly coordinative, the other being noncoordina-
tive. For example, *stootskraap* could have the meaning
'pushing and scraping simultaneously', in which case the
meaning would not change if the order of the constituents
were to change. But it could also have the meaning

'scraping by pushing', in which case changing the order
of the constituents would result in a change of meaning.
Cf. Kempen 1969:344 for some discussion. In the latter
case the righthand constituent of the compound could be
argued to be the head semantically. For some discussion
of the distinction between the syntactic and the semantic
notions 'head of a word' and the relationship between
these notions, cf. Zwicky 1984a.

Appositive compounds such as those shown in iv. may be
argued to be semantically left-headed because of the fact
that the relationship between the constituents is, roughly,
one of modifiee-modifier. The compound shown in iv.b.
could be argued to be syntactically left-headed as well.

iv. a. $[goewerneur_N + generaal_N]_N$

      governor   general
   'governor-general'

     $[Piet_N + lekkerbek_N]_N$

     Peter   gourmet
     'Peter (who is a) gourmet'

   b. $[Jan_N + [groot + praat]_V n]_N$

      John   big   talk
      'John (who) boasts'

Cf. Botha 1964:264ff and Kempen 1969 for examples.

26.   Fabb (1984:35) assumes that the "non-heads in compounds
      are like phrasal maximal projections in that they may be
      freely associated with a Case feature ... and may be as-
      signed a theta-role". This assumption, according to him,
      follows from the requirement that a dominating node can be
      in a projection relationship with only one of its daughter
      nodes. Given this requirement, only one of the daughter
      nodes in a compound structure (viz. the righthand node, by
      the Righthand Head Rule) must be assumed to be nonmaximal,
      hence in a projection relationship with the mother node.

Merely stipulating that the nonhead constituent in a com-
pound structure is its own maximal projection would not
solve the problem noted in connection with Lieber's prin-
ciple (21), however. This principle would still fail to
express the generalization that maximal projections in
phrase structure are $\bar{\bar{X}}$ categories, whereas maximal pro-
jections in word structure are X^0 categories.

27. To my knowledge the question of bounding nodes in Afri-
kaans has not been systematically investigated. The
assumption that S is a bounding node in Afrikaans is not
unreasonable, however. A first indication that this is
not an unreasonable assumption is the fact that S is as-
sumed to be a bounding node in Dutch, with which Afrikaans
shares many syntactic properties --- cf. e.g. Van Riems-
dijk and Williams 1986:76. A second indication that it is
reasonable to assume, pending evidence of the required
kind, that S is a bounding node for Afrikaans is provided
by facts such as the following:

i. Movement of a constituent out of a complex NP to the
COMP position is impossible in Afrikaans, e.g.

   a. *Hy vra $[_{\bar{S}}$ wie$_i$ $[_S$ $[_{NP}$ stories $[_{PP}$ oor $e_i]]$
      he asks   whom   stories   about

      kinders bang maak
      children afraid make
      '*He asks whom stories about e scare children.'

   b. *Hy vra $[_{\bar{S}}$ wie$_i$ $[_S$ Piet $[_{NP}$ 'n vermoede $[_{\bar{S}}$ $e_i[_S e_i$ sy
      he asks   who   Peter   a suspicion   his

      beursie gesteel het]]] het]]
      purse   stolen has   has
      '*He asks who Peter has a suspicion e stole his
      purse.'

ii. Movement of a constituent out of a clause containing
     a WH-phrase in COMP is impossible in Afrikaans, e.g.

a. *[$_\overline{S}$ <u>wat</u>$_i$ [$_S$ verneem hy [$_\overline{S}$ <u>wie</u>$_j$ [$_S$ <u>e</u>$_j$ uitgevind het

     what   asks   he   who   found out has

[$_\overline{S}$ <u>e</u>$_i$ [$_S$ Marie smiddags   <u>e</u>$_i$ doen]]]]]]

          Mary   in the afternoon   does

'*What$_i$ does he ask who found out e$_i$ Mary does
 in the afternoons?'

In i.a. the impermissible movement crosses an S, NP and
PP. In i.b. the impermissible movement crosses an $\overline{S}$,
NP and S. And in ii.a. the impermissible movement cros-
ses two $\overline{S}$ nodes and two S nodes. If S and $\overline{S}$, or $\overline{S}$ and NP,
were taken to be bounding nodes, the impossibility of
movement in i.a. could not be accounted for. If only
PP and NP were taken to be bounding nodes, the impossibi-
lity of movement in i.b. and ii.a. could not be ac-
counted for. Hence, the only way to account for the
impossibility of movement in all three the cases shown
above would be to assume, minimally, that S and NP are
bounding nodes in Afrikaans.

28. Baker's definition of 'government' reflects the notion
     of government accepted in (Chomsky 1986:8ff).

29. Baker's formulation of the Empty Category Principle and
     his definition of 'proper government' reflect standard
     assumptions about the content of these notion. Cf. e.g.
     Van Riemsdijk and Williams 1986:ch. 18 for discussion.

30. Cf. the discussion in (Baker 1985:70ff) for an indication
     of the differences between the definition of 'barrier'
     presented here and that presented in (Chomsky 1986:par. 4).
     These difference are subtle and do not appear to have

consequences for the argument developed here.

31. The status of the A-over-A Principle within current ver-
     sions of the GB theory of syntax is not clear. Part, but
     not all, of the content of this principle has been sub-
     sumed by Subjacency --- cf. e.g. the discussion in Van
     Riemsdijk and Williams 1986:ch. 4.   However, the A-over-A
     Principle is apparently still required to account for
     phenomena that fall outside the scope of the Subjacency
     condition --- cf. e.g. Chomsky 1981:222 fn. 2.   The
     direction taken in recent work by, e.g., Chomsky (1986)
     has been to develop a notion 'barrier' to replace the
     notion 'bounding node' relevant to Subjacency. It may
     be assumed that the effects of the A-over-A Principle too
     will eventually be derivable from a theory of barriers.

32. Chomsky (1986:71) calls the assumption that I is theta-
     indexed with its complement VP a "questionable assumption".
     Yet, given the pervasiveness of the V-second phenomenon
     in, particularly, Germanic languages, VP would have to be
     assumed not to be a barrier to movement. It would then
     be a question of finding the correct mechanism to account
     for this putative fact.

33. Recall, too, that both Van Riemsdijk and Stowell have
     been shown to argue that verb-particle combinations in
     Dutch must be analyzed as complex verbs at some level of
     representation. See the discussion in chapter 4 above.

34. Baker (1988:45ff) proposes the following derivation for
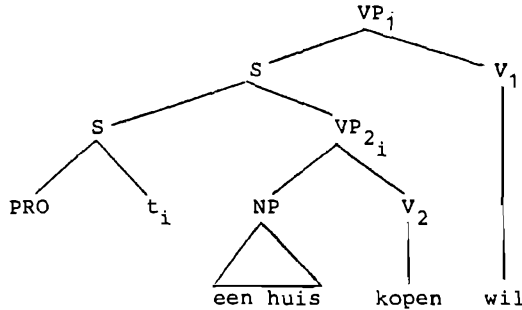   the Dutch sentence:

               dat Jan wil   een huis kopen
               that John wants a   house buy
               'that John wants to buy a house'

i. **D-structure**
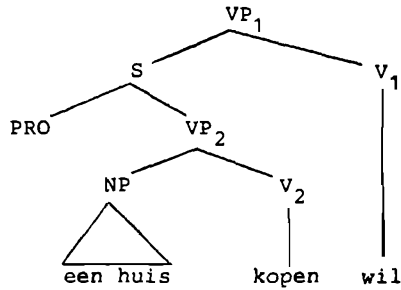
VP$_2$ is adjoined to S by application of Move α, yielding

ii. **S-structure**

V$_2$ is incorporated into V$_1$ by application of Move α at LF, yielding

iii. **LF**
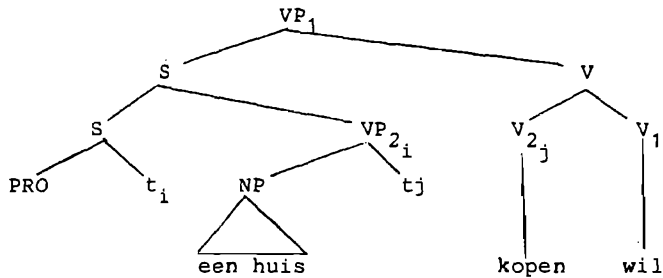
Cliticization of the auxiliary verb V$_1$ takes place at PF. The cliticization rule places the clitic (i.e. V$_1$) before the last phrase of the preceding

clause, where "the last phrase" is defined as 'any
phrase which properly contains the last word of the
relevant clause (and which is less than the entire
clause)'. Cliticization of V_1 yields

iv. PF

dat Jan $[_{VP_1} [_S$ PRO $[_V wil]$ $[_{VP_2}$ een huis kopen$]]]$

If "the last phrase" is taken to be V_2 instead of
VP_2 the following variant of the above structure,
which corresponds with a well-formed sentence in
Dutch, is derived:

dat Jan $[_{VP_1} [_S$ PRO $[_{VP_2}$ een huis $[_V wil]$ kopen$]]]$

Thus the fact that the NP *een huis* can be either
adjacent to or separated from the verb *kopen*
after "V-raising" is accounted for by assuming varia-
tion with regard to the placement of the clitic at
PF. In order to account for the fact that in Afrikaans
the clitic cannot be placed between a particle and a
verb, the only possible position of the clitic would
have to be assumed to be before the last nonminimal con-
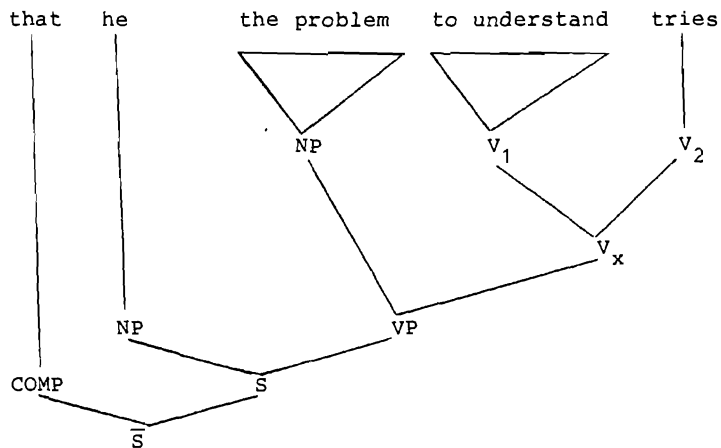stituent of the preceding clause.

The adjunction of VP_2 to S (see ii. above) is re-
quired in order that the S-structure may be a proper
input structure for incorporation at LF. (Incorpo-
ration is required to account for scope facts ---
see Baker 1988:52ff for discussion.) Notice that
V_2 cannot be incorporated into V_1 in the D-struc-
ture shown above. Given that an S intervenes between
V_1 and V_2, the structure resulting from such incorpo-
ration would violate the ECP: the incorporated V_2
would not govern its trace within VP_2. After ad-
junction, S no longer counts as a barrier to govern-

ment as it is now a complex category S + VP_2.   In
such an adjunction structure the dominating cate-
gory S assumes the indices of the adjoined category.
Hence S would assume the theta index of VP by vir-
tue of which VP_2, hence S + VP_2, does not count as
a barrier to government --- see Baker 1985:69 for
discussion of the properties of adjunction structures.

35.   For example, Haegeman and Van Riemsdijk (1986) argue
       that so-called V-raising phenomena are the result, not
       of movement, but of reanalysis and inversion.   Thus,
       they (1986:422f) propose that the sentence dat hij het
       probleem te begrijpen probeert ('that he tries to
       understand the problem') in Dutch be derived in the
       following way.   First Reanalysis has the effect of re-
       analyzing linearly adjacent V nodes in a structure as
       a complex V node.   The structure before reanalysis is
       shown above the line in i. and the structure after
       reanalysis below the line.   The multidimensional repre-
       sentation is intended to express the claim that Reana-
       lysis adds an additional set of brackets to a structural
       description.

       i.   ...

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i. Reanalysis:

$\overline{S}$ → COMP, S

S → NP, VP

VP → S, V_2

S → NP, VP

VP → NP, V_1

dat   hij   PRO   het probleem   te begrijpen   probeert

----

that   he   the problem   to understand   tries

NP V_1 V_2

V_x

NP   VP

COMP   S

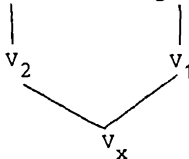$\overline{S}$
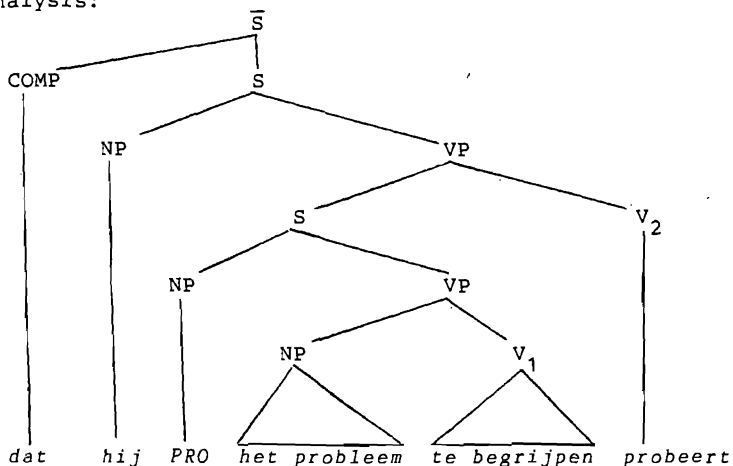
Inversion applies to the reanalyzed node V_x, inverting the order of its constituents, as shown in ii.

ii. Inversion: *dat hij het probleem probeert te begrijpen*

V_2 V_1

V_x

36.   Cf. Baker 1985 for an extensive discussion of the so-
      called incorporation phenomena for which an adjunction
      analysis is postulated.

37.   Cf. e.g. Booij 1983; Thomas-Flinders 1983:190:fn. 1;
      Höhle 1985:335ff; Sproat 1985:403f; and Toman 1985:429
      for examples from English, Dutch, and German, and for dis-
      cussion of possible constraints on the deletion of consti-
      tuents of complex words.

38.   Cf. e.g. Botha 1981:200 for this formulation of (part of)
      the Recoverability Condition. It is clear from Botha's
      discussion of this condition that the identity required
      of the deleted element and another element in the P-marker
      includes at least identity in meaning/interpretation.

39.   Cf. e.g. Selkirk 1982:60ff and Lieber 1980:35ff; to ap-
      pear:6-7 for the assumption that affixes have subcatego-
      rization properties.

40.   Note that neither Sproat nor Lieber indicates how the
      regular (i.e. nonidiosyncratic) syntactic, phonological
      and/or semantic properties of items listed in the lexicon
      are to be accounted for. For instance, it may be asked
      how the regular syntactic and phonological properties of
      a verb-particle combination listed in the lexicon by vir-
      tue of its idiosyncratic semantic properties are to be
      specified.

      Selkirk (1982:11-12) has suggested a possible solution to
      this problem. She proposes that the structural properties
      of all words in the lexicon must be specifiable by the
      word structure rules of the language. That is, the word
      structure rules function as well-formedness conditions or
      redundancy rules in the case of words listed in the lexi-
      con. The phonological and semantic rules of the language
      could presumably be claimed to perform the same function

with regard to the regular phonological and semantic
properties of listed items.

Thus, the syntactic and phonological regularity of a lis-
ted verb-particle combination would be indicated by the
fact that its phonological and syntactic properties, as
specified in its lexical entry, are exactly as predicted
by the relevant phonological and syntactic rules. Its
meaning, by contrast, would be marked as idiosyncratic
by virtue of the fact that it deviates from the meaning
specified by the semantic rules.

41. Parallel predictions are of course made for compound
nouns, adjectives, and prepositions. Examples of compound
nouns and adjectives with structures parallel to those
shown for compound verbs in (62) were provided in par.
6.3.2 above. Compound prepositions do not occur in
Afrikaans, but Afrikaans could be claimed not to be unique
in this respect. The same principle that is responsible
for ruling out compound prepositions in other languages
could be argued to rule out compound prepositions in Afri-
kaans as well. Lieber (to appear:9) suggests that the
fact that P is a closed category could be responsible for
the absence of compound prepositions in English.

Another, more serious, problem with the predictions made
by Lieber's structural principles is that not all of the
possible compound types can be productively formed in
Afrikaans. Thus, whereas the rules forming NN and VN com-
pounds are fully productive in Afrikaans, those forming
VA and VV compounds are only of limited productivity ac-
cording to Kempen (1969). However, accounting for diffe-
rences in productivity is a problem for any theory of
compounding on which compounds are assumed to be formed
by rule.

The prediction that left-headed compound nouns, adjectives
and prepositions with structures parallel to those shown
in (63) are impossible in Afrikaans is possibly correct.

Compound structure is predominantly right-headed in Afri-
kaans, although some left-headed compounds do occur, as
well as compounds of which neither constituent appears
to be the head --- see n. 25 above for examples.

42.   Forms such as the underlined ones below appear to have
a nonhead constituent which contains a modifier of some
sort:

 i. *Hulle is aan 't   soet + koekies   bak.*
      they are PROGRESSIVE sweet cookies bake
     'They are baking sugar-cookies.'

 ii. *Die kind is aan 't   drie + wiel   ry.*
      the child is PROGRESSIVE three wheel ride
     'The child is riding on a tricycle.'

 iii. *Sy is haar aan 't   pop + mooi   maak.*
      she is her PROGRESSIVE doll pretty make
     'She is making herself as pretty as a doll.'

However, it could be argued that the nonhead constituents
soetkoekies, driewiel, and *popmooi* must themselves be ana-
lyzed as compounds. Thus note that *soet, drie,* and *pop*
do not allow specifiers or modifiers, as shown below.

 iv. **Hulle is aan 't   [nog soeter] + koekies bak.*
      they are PROGRESSIVE even sweeter cookies bake

 v. **Die kind is aan 't   [net drie] + wiel ry.*
      the child is PROGRESSIVE only three   wheel ride

 vi. **Sy is haar aan 't   [n pop] + mooi   maak.*
      she is her PROGRESSIVE a doll   pretty make

Also, *soetkoekies, driewiel,* and *popmooi* have the generic,
nonspecific interpretation characteristic of nonhead con-
stituents of compounds, despite the fact that they contain
the specifiers/modifiers in question. Thus *soetkoekies*
in *soetkoekies bak* refers to a kind of cookie, *driewiel*

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in *driewiel ry* refers to a <u>kind</u> of cycle, and *popmooi* in *popmooi maak*, must be interpreted as 'pretty as a(ny) doll' rather than 'pretty as a specific doll'.

It could be concluded, therefore, that the nonhead consti- tuents of the forms in i.-iii. above must themselves be analyzed as compounds rather than phrases. The form *soet- koekies bak* illustrates another point as well, viz. that the presence of a diminutive or plural suffix on the non- head constituent of a compound does not force a specific, i.e. nongeneric, interpretation. Thus, the nonhead con- stituents of the underlined forms below can be interpreted generically, despite their plural morphology. Hence, these underlined forms can be argued to be compounds.

vii. *Ek gaan gou   <u>hande</u> + <u>was</u>.*
    I go   quickly hands   wash
    'I am going to wash (my) hands quickly.'

viii. *Sy probeer vir hom <u>ogies</u>   + <u>maak</u>.*
    she tries   for him small eyes make
    'She tries to make eyes at him.'

43. Cf. e.g. Baker 1985:par. 2.2 and Sproat 1985:488 for sug- gestions as to how the syntactic cohesiveness of words containing affixes and other bound morphemes could be ac- counted for within the framework of a theory of syntactic word formation.

44. In a discussion of the phenomenon of *ge-* deletion in Dutch, De Rooij-Bronkhorst (1980:167f) specifically argues that *ge-* deletion is conditioned by morphological struc- ture and not by stress in Dutch. The same appears to be true of Afrikaans. Thus, note that *ge-* may appear with underived verbs in Afrikaans, even if the first syllable of the base verb is unstressed, as it is in prefixed verbs:

probéer	-	*geprobeer*
try		tried
studéer	-	*gestudeer*
study		studied
rinkínk	-	*gerinkink*
gambol		gambolled

45. Cf. e.g. De Vries 1975:137ff; Declerck 1976:63; Booij
     1977:98ff; Strauss 1979:72ff; De Rooij-Bronkhorst 1980:
     161; Hoeksema 1984:68; Trommelen and Zonneveld 1986;
     and Wunderlich 1987:307ff.   The generally fuzzy nature
     of the boundary between prepositions and prefixes has
     been discussed by, e.g., Williams (1981:255); Vögeding
     (1981:69ff, 96ff); Sproat (1985:114); and Baker (1985:
     344 and 509 fn. 2).   For a diachronic account of this
     phenomenon, cf. Wunderlich 1987. As far as Afrikaans is
     concerned, Kempen (1969:299) states that the prepositions
     in question behave more like prefixes, but hesitates to
     call them prefixes because of their similarity in meaning
     to the homophonous prepositions/adverbs.

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