

On Verbs That Fail to Undergo V-Second

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On Verbs That Fail to Undergo V-Second

Hilda Koopman

In this article I develop an analysis for the syntactic distribution in Dutch of particle verbs, verbs with an inseparable prepositional prefix, verbs with the prefix *her-* ‘again’, and particle verbs prefixed with *her-*. Empirical evidence based on the distribution of particle verbs and the prefix *her-* will establish that the finite verb in nonroot environments in Dutch is in situ (or more correctly quite low in the structure). I will show that the proposals developed in Koopman 1994 for the way in which lexical properties are satisfied yield a direct and simple explanation for the paradigms under discussion and solve certain long-standing problems in Dutch syntax. Insofar as these proposals uniquely rely on the mechanism of head movement and are intended as a general theory for the way in which lexical properties need to be satisfied, the analysis developed here yields strong support for my 1994 proposals, which can be seen as a particular implementation of Chomsky’s (1993) checking domain.

I would like to thank two anonymous reviewers, Jeanette Schaeffer, and Dominique Sportiche for their comments.

1 Where Is the Finite Verb in Dutch Nonroot Clauses?

From the extensive work on V-movement in the different Germanic languages, it appears that these languages vary with respect to the position of the finite verb in nonroot environments. Within the Germanic VO languages, the situation can be roughly summarized as follows:¹

- | | |
|------------------------------|---|
| (1) <i>Root environments</i> | |
| V-second | Swedish, Norwegian, Danish, Icelandic, Faroese, Yiddish |
| Restricted V-second | English |
| <i>Nonroot environments</i> | |
| V-in-situ | Swedish, Norwegian, Danish, English |
| V-to-I movement ² | Icelandic, Faroese, Yiddish |

With the exception of English, these languages are all V-second (V2) languages. Any finite verb *must* move through intermediate head positions to the highest functional head position in root clauses. Any finite verb is therefore in principle able to move to I. The position of the finite verb in nonroot environments varies, however. In some languages the verb stays in situ; in others it must raise to I. Overt V-to-C movement in root environments therefore does not imply overt V-to-I movement in nonroot environments.

In light of these data, it is difficult to decide exactly where the finite verb is in nonroot environments in the V2 Germanic OV languages like Dutch and German. If some I categories are final in Dutch and German, then I and V are adjacent. Empirical arguments that establish whether the finite verb is in some final I category or in some position lower than I have been extremely difficult, even impossible, to construct.³ This basically unsettled issue has been present in the literature on Dutch and German for a long time. In the older literature it takes the form of discussions over whether there is an I projection or not: since there is little or no distributional evidence for an I-final category, it is often concluded that such a category must be lacking and that the finite verb simply is in the VP. The standard view is probably that the language has V-to-final-I movement in nonroot environments. This view is based on the idea that since the language has overt V-to-C movement in root environments, it also has V-to-(final)-I movement in nonroot environments. This view is not empirically supported, however, as can be concluded from (1): overt V-to-C movement does not entail overt V-to-I move-

¹ See among others Vikner 1994 and references cited there.

² *V-to-I* is used to indicate V-movement to some functional head position quite high in the clause.

³ This is true for V-final languages in general. The picture might change if Kayne (1994) is correct, and if there are no underlying final head positions. In that case, V-final languages are either languages in which V is in situ, and complements of V have moved to the left of V, or languages in which V is quite high, and a complement has moved to some specifier position to the left of the head position containing V. I will not entertain this possibility here for Dutch (but see Zwart 1993 for an analysis of Dutch as a head-initial language). It will not affect the basic arguments that I present.

ment in nonroot environments.⁴ In the absence of clear empirical arguments, the issue could be decided on the basis of other phenomena. Dutch specific DPs, for example, must scramble to some position quite high in the clause. If, as overt DP-movement in Icelandic suggests, such movement is contingent on overt V-movement, the Dutch verb must have moved in the overt syntax to some position in order to allow domain extension. This argument presupposes that the Icelandic phenomenon is fully understood. In the end, then, empirical arguments are needed, and the question arises whether such arguments *can* be constructed.

2 On Verbs That Fail to Undergo V-Second

There are empirical data leading to the conclusion that the finite verb in Dutch can be in situ. Haider (1993:23–24) presents the argument in rudimentary form.⁵ He notes that there is a class of verbs in Dutch and German that fail to undergo V2 but that nevertheless can have finite forms in nonroot environments. These verbs consist of a particle verb (a verb with a separable P prefix) preceded by a prefix *her-* ‘again’ (comparable to English *re-*). *Her-* can combine not only with certain classes of noncomplex verbs (2a) but also with particle verbs (2b).⁶

(2) a.	kauwen	‘chew’	herkauwen	‘ruminate’
	openen	‘open’	heropenen	‘reopen’
	schrijven	‘write’	herschrijven	‘rewrite’
	lezen	‘read’	herlezen	‘reread’
b.	uitgeven	‘publish’	heruitgeven	‘republish’
	indelen	‘divide’	herindelen	‘redivide’
	uitzenden	‘transmit’	heruitzenden	‘retransmit’
	invoeren	‘introduce, import’	herinvoeren	‘reintroduce’
	indijken	‘put in dikes’	herindijken	‘put in dikes again’

The verbs in (2a) and (2b) are syntactically and morphologically distinct. Thus, their syntactic distribution differs. Finite forms of the verbs in (2a) can undergo V2.⁷

(3) a.	Koeien	<i>herkauwen</i>	hun	eten.
	cows	rechew	their	food
		‘Cows ruminat.e.’		

⁴ In some works, it is proposed that V-to-I movement in embedded contexts is optional; in others, that the finite verb is in situ (Koopman 1984) or undergoes some raising but not to the head-initial functional categories (Koopman 1989, 1990, 1993).

⁵ Haider reaches the conclusions (a) that the V is in situ in nonroot environments and (b) that I is therefore absent. The latter conclusion does not follow.

⁶ As discussed in Keyser and Roeper 1992, *re-* cannot attach to particle verbs in English. In work in progress, I develop an account for the contrast between English and Dutch that exploits the respective absence or presence of P-incorporation in the overt syntax.

⁷ Inflection of verbs prefixed with *her-* is awkward in some cases. However, there are many examples that seem perfectly natural.

- b. Vandaag *heropent* de stad het museum.
today reopens the city the museum
'The city reopens the museum today.'
- c. De dichter *herschreef* deze passage eindeloos.
the poet rewrote this passage endlessly
'The poet endlessly rewrote this passage.'
- d. Gisteren las hij de eerste dertig bladzijden; vandaag *herleest* hij ze
yesterday read he the first thirty pages today reread he them
al.
already
'Yesterday he read the first thirty pages; today he reread them already.'

But finite forms of the verbs in (2b) cannot, whether the entire verb preposes or whether part of the complex verb is stranded.

- (4) a. *Vandaag *heruitgeven* ze het. *Vandaag *geven* ze het *heruit*.
today reoutgive they it today give they it reout
- b. *Deze klas *herindeelden* ze vandaag in kleinere groepen.
this class redivided they today in smaller groups
'They redivided this class today in smaller groups.'
- c. *Dit programma *heruitzenden* ze regelmatig.
this program reoutsend they regularly
'They rebroadcast this program regularly.'
- d. *Deze wet *herinvoerden* ze vorig jaar.
this law reimported they last year
'They reinstated this law last year.'
- e. *Deze polder *herindijken* ze volgende week.
this polder redike they next week
'They redike this polder next week.'

It is intuitively clear why these verbs cannot undergo V2: a particle must be stranded under V2, and *her-* must pied-pipe. This intuition will be formalized in sections 5, 6, and 7. It is not lack of finite verb forms that explains the restriction on the verbs in (4): the verbs in (2b) can be inflected as long as they are in nonroot environments, and this is in large part why this paradigm is interesting.

- (5) a. omdat deze uitgeverij zulke boeken vandaag de dag niet *heruitgeeft*
because this editor such books today not republishes
'because this company does not presently republish such books'
- b. omdat hij de klas in kleinere groepen *herindeelde*
because he the class in smaller groups redivided
'because he redivided the class in smaller groups'

- c. omdat ze zulke programmas regelmatig *heruitzenden*
because they such programs regularly reoutsend
'because they rebroadcast such programs regularly'
- d. omdat ze vorig jaar deze wet *herinvoerden*
because they last year this law reimported
'because they reinstated this law last year'
- e. omdat ze de polder volgende week *herindijken*
because they the polder next week redike
'because next week they will put dikes around the polder again'

Though the forms in (5) are fine, these verbs occur most naturally as bare infinitives or participles.⁸

- (6) a. omdat ze deze boeken niet zullen *heruitgeven*
because they these books not will republish
'because they won't republish these books'
- b. omdat hij de klas in kleinere groepen gaat *herindelen*
because he the class in smaller groups will redivide
'because he will redivide the class into smaller groups'
- c. omdat ze dat programma wel zullen *heruitzenden*
because they that program yes will reoutsend
'because they will rebroadcast that program'
- d. omdat ze vorig jaar deze wet hebben *heringevoerd*
because they last year this law have reimported
'because they have reinstated this law last year'

The different syntactic distribution is not the only distinction between the verbs in (2a) and (2b). A morphological distinction shows up in their participles. The verbs in (2a) are mostly incompatible with the participial prefix *ge-*, as is typically the case for verbs with an unstressed prefix (like *be-* and *ver-*, for instance). *Her-* simply attaches to the verb with the participial suffix (indicated as *part*).⁹

⁸ See Broihier et al. 1994 for similar effects in Germanic child language. Jeanette Schaeffer (personal communication) informs me that this distribution resembles the distribution of particle verbs in Dutch child language: particle verbs are disproportionately realized as infinitives, and finite forms in root environments are avoided (25% of particle verbs are inflected, as opposed to 50% of other verbs).

⁹ In the few instances in which *ge-* and *her-* cooccur, *ge-* precedes *her-*, and *her-* is stressed.

- (i) **gewaardeerd**
*herwaardeerd
*hergewaardeerd
geherwaardeerd
'reappreciated'

(7)	<i>ge-V_{part}</i>	<i>her-V_{part}</i>	<i>her-ge-V_{part}</i>	<i>ge-her-V_{part}</i> ¹⁰	
a.	geopend	heropend	*hergeopend	*geheropend	‘opened, reopened’
b.	gekauwd	herkauwd	*hergekauwd	?geherkauwd	‘chewed, rechewed’
c.	gelezen	herlezen	*hergelezen	*geherlezen	‘read, reread’
d.	geschreven	herschreven	*hergeschreven	*geherschreven	‘written, (re)written’

With the verbs in (2b) there is no morphological interaction between the prefixes *her-* and *ge-*. The particle precedes *ge-*, which in turn obligatorily precedes the participial verb form.

(8)	<i>P-ge-V_{part}</i>	<i>her-P-V_{part}</i>	<i>her-P-ge-V_{part}</i>	<i>ge-her-P-V_{part}</i>	
a.	uitgegeven	*heruitgegeven	heruitgegeven	*geheruitgegeven	‘published, republished’
b.	ingedeeld	*herindeeld	heringedeeld	*geherindeeld	‘divided, redivided’
c.	uitgezonden	*uitzonden	heruitgezonden	*geheruitzonden	‘broadcast, rebroadcast’
d.	ingevoerd	*herinvoerd	heringevoerd	*geherinvoerd	‘imported, reimported/ reinstated’

Thus, when *her-* attaches to a nonparticle verb, the resulting verb can undergo V2 and acts like a regular verb with a prefix. As with other compound verbs, the participial prefix *ge-* does not attach to *her-V_{part}*. When *her-* attaches to a particle verb, the resulting verb fails to undergo V2, yet finite forms of these verbs can occur in environments where V2 is not triggered. With these verbs, there is no interaction between *her-* and *ge-*.

3 The Finite Verb in Dutch Nonroot Environments Is In Situ

Particle verbs prefixed with *her-* fail to undergo V2, because the requirements that a particle must be stranded under V2 and that *her-* must pied-pipe somehow conflict.

- (9) a. *Ze zonden het uit.*
they sent it out
‘They broadcast it.’
b. **Ze uitzonden het.*
they outsent it

¹⁰ Verbs prefixed with *her-* allow *ge-* prefixation more freely in colloquial Dutch; in these cases *ge-* prefixes to the compound V.

- c. Koeien *herkauwen* hun eten.
cows re chew their food
'Cows rumin ate.'
- d. *Vorige week *heruitzonden* ze dit programma. *Vorige week *zonden*
last week reoutsent they this program last week sent
ze het *heruit*.
they it reout
- e. omdat ze dit programma gisteren *heruitzonden*
because they this program yesterday reoutsent
'because they rebroadcast this program yesterday'

Although a precise analysis for this paradigm will be presented in sections 6, 7, and 8, we can draw a conclusion about the position of the finite verb in (9e) at this point.

With particle verbs, the verbal part carrying finite morphology must undergo V2 (9a). Since it is the finite part of the particle verb that must move, it is natural to tie this movement to the licensing of the finite morphology. Suppose therefore that when the finite verb undergoes V2, the finite morphology is satisfied, or checked, in the overt syntax, in the appropriate head positions (say, T and Agr), which occur lower than C.¹¹ The failure of P to pied-pipe under V2 (9b) and the lack of finite verb forms of *her*-P-Vs in root environments (9d) can now be explained if the resulting configuration does not allow the finite morphology to be checked in the overt syntax (see sections 6.1 and 8). If this is correct, it must be assumed that the finite morphology is obligatorily checked in the overt syntax when V moves to C. However, since these verbs can have finite forms in nonroot environments, it also follows that the finite morphology of V is not checked in the overt syntax in (9e). Therefore, the verb in (9e) has not undergone overt movement to T and Agr: the Dutch finite verb therefore is (or rather *can* be) lower than T and Agr_S in nonroot environments. I refer to the position of the finite verb in nonroot environments as the *in situ* position for convenience. Note, however, that this is a sloppy use of the term *in situ*: the finite verb could have undergone some raising, as long as it raises to a position lower than T. Dutch thus basically patterns with Swedish and Norwegian.

Dutch specific DPs scramble to a position quite high in the clause (section 2). Although the verb in nonroot contexts is quite low, the DPs happily scramble high. In (5a), (5b), and (5e), for example, the objects have visibly scrambled. In fact, there does not seem to be any difference between scrambling of specific DPs in root and nonroot envi-

¹¹ The clausal architecture of Dutch is by no means settled. I assume the structure in (i); only boldfaced heads are important for the discussion in this article.

(i) Wh C Nom Dat Acc **Agr_S** T Neg Agr_{IO} Agr_O **Asp** V

Nom, Dat, and Acc are the positions where specificity is licensed (Sportiche 1992). Of these head positions, only Wh, C, Nom, Dat, and Acc are visibly head-initial in the overt syntax; whether the other heads are initial or final in the overt syntax is unclear.

ronments. This implies that the movement of specific DPs is not necessarily contingent on overt V-movement.

Since the verbal morphology of *her*-P-Vs cannot be checked in the overt syntax, it follows that any verbal morphology compatible with these verbs in nonroot environments (the infinitival suffix, the participle, and probably the *te* infinitive)¹² is base-generated and later checked at LF.

The paradigms discussed so far raise many questions. Why does attaching *her*- to a particle verb bleed V2? How are we to account for the syntactic distribution of particle verbs? If the finite verb can be base-generated, why isn't it possible to check the morphology when the entire V moves? If the V is in situ in nonroot environments but raises at LF, why does movement at LF yield the correct results? What is the difference between the representation in the overt syntax and the representation at LF? In order to answer these questions, I present the proposals developed in Koopman 1994, which allow a quite elegant analysis of particle verbs (section 6) and the paradigm of *her*- (section 8).

4 Licensing Heads

In Koopman 1994 I pursue a research program based on the idea that all licensing principles are reduced to two fundamental licensing configurations—spec-head licensing (Sportiche 1990, 1992) and head incorporation—and I explore the role of the latter. The spec-head configuration is achieved through (XP-) movement, incorporation through head movement. I argue in particular that head movement plays a fundamental role in licensing lexical properties. Lexical items resemble atoms: they come with a number of open positions (morphological, thematic, and tense-aspect slots)—call them *receptors*—that need to be satisfied by virtue of the Projection Principle. A receptor is satisfied when an element attaches to it, forming some kind of molecule. Elements attaching to receptors are heads. A head reaches its designated receptor by means of head movement. Head movement is severely constrained, as a consequence of the theory of locality. I will basically assume Sportiche's (1988, 1989, 1990) theory of locality, which is summarized in (10).

- (10) a. *I-command*
 α i-commands (immediately commands) β if the first constituent containing α contains β .

¹² Although the judgments are not crystal clear, *her*-P-Vs can be preceded by the infinitival prefix *te*. Taking V-raising into account, the following pattern seems to arise:

- (i) (?)omdat ze dit programma volgend jaar schijnen *heruit te zenden* (V-raising)
 because they this program next year seem reout to send
 'because they seem to rebroadcast this program next year'
- (ii) *omdat ze dit programma volgend jaar *heruit* schijnen *te zenden* (stranding of *heruit*)
 because they this program next year reout seem to send
 'because they seem to rebroadcast this program next year'

This pattern is consistent with the paradigm described here and argues for base generation of the infinitival prefix (just like base generation of the participial prefix). (ii) is ruled out, because V would have to excorporate in case of V-raising, leaving *heruit* stranded; as shown in section 8, V cannot escape the projection of *her*-.

b. *Government*

α governs β if α i-commands β and no barrier intervenes between α and β .

c. *Barrier*

X^{\max} is a barrier for β ($\beta \neq X^0$) if any non-L-marked projection of X^0 includes β .

A constituent will have a chance to be governed by a head only if it is included in a constituent that is sister to a head; thus, head movement is possible only from sisters, whether XP or X^0 sisters. Moreover, in the case of complex adjunction structures, this theory predicts that only the head can undergo further movement (*excorporate*);¹³ since an adjoined element is not the head of the complex word, the projection of the head will be a barrier for the adjoined head (see Koopman 1994 for discussion). For reasons that will become clear, I must assume a definition for antecedent government that is very close, but not identical, to (10b).¹⁴

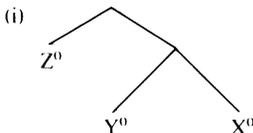
(11) *Antecedent government*

α antecedent-governs β if the first category containing α contains β and no barrier intervenes between α and β .

How are lexical receptors satisfied? As an example, consider a V, V*, selecting for some VP complement. V* has a V receptor that must be filled at LF by the head of the selected complement. The embedded V must reach the receptor through head movement; the selected VP must therefore be in a complement relation with V*. Similarly, when V selects for an NP or a PP, the N or P must incorporate into the N or P receptor of V through head movement. This implies that the N or P must move within its extended projection to a position from where it can be incorporated. Finally, and crucially, I assume that attachment to the receptor involves at least two local steps of head movement, with (12a) necessarily preceding (12b). (The atomic lexical item is boldfaced; receptors attached to the atom are indicated with double lines. The representations below are

¹³ For discussion of excorporation, see Roberts 1991 and Koopman 1994. Although Roberts's account allows excorporation of adjoined heads, the stronger theory presented here disallows such cases.

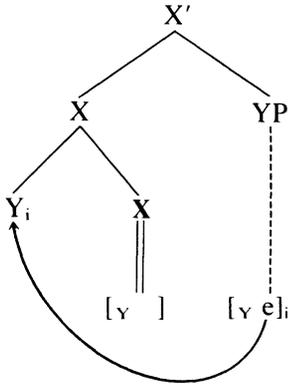
¹⁴ In this definition of antecedent government, it is necessary to refer to categories, so that a Y adjoining to a head antecedent governs its trace. For incorporation, sisterhood is needed: it is important that in a configuration like (i), X^0 i-commands Y^0 (and Y^0 can therefore incorporate to X^0) but not Z^0 .



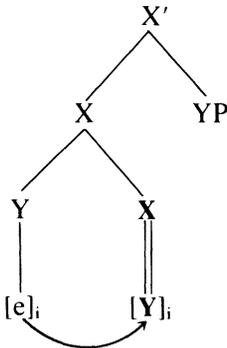
I have not found a way to unify i-command and antecedent government. Alternatively, following a suggestion by Dominique Sportiche (personal communication), the i-command domain for receptor binding could be called the *checking domain*, and one could stipulate that checking requires sisterhood. This yields correct results for checking through head movement, but leaves the problem of checking by means of spec-head agreement (the specifier position is not a sister of the head). Percolation of the features of the head to the sister category of the specifier could be invoked to give sisterhood here, but this assumption does not appeal to me.

incomplete; I will not be concerned with the internal structure of the ‘‘molecule’’ and will concentrate only on the immediate syntactic environment. For discussion, see Koopman 1994.)

(12) a. *Syntactic adjunction to the host*



- b. *Head movement from the position adjoined to the host onto the receptor*
 X i-commands Y in (12a); therefore, X governs Y, and Y can attach to the Y receptor.



The representations in (12) can be seen as representations of the two types of head movement assumed in the literature (see Rizzi and Roberts 1989, for example): adjunction (12a) and substitution (12b). I claim that the adjunction type of head movement *always* precedes the substitution type of head movement; this will play an important role in this article. Since lexical properties must be satisfied at LF, (12b) must apply at LF at the latest. However, given the hypothesis that covert processes can be anticipated in the overt syntax, we expect to find the following cases:

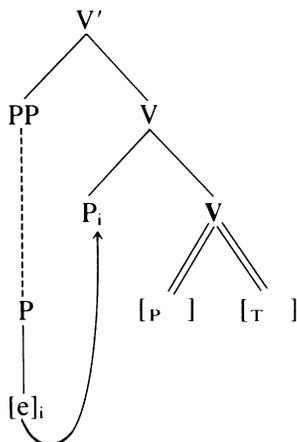
(13)	<i>Overt syntax</i>	<i>Covert syntax (LF)</i>	<i>Example</i>
a.		(12a) & (12b)	No visible incorporation
b.	(12a)	(12b)	Dutch particle verbs
c.	(12a) & (12b)		<i>her</i> -V; inseparable [P-V]

(13a) yields no visible incorporation structures in the overt syntax. As I will show, (13b) illustrates Dutch verb-particle constructions, and (13c) illustrates the verbs prefixed with *her-* that were discussed earlier, as well as other verbal forms preceded either by a prefix (*be-*, *ver-*) or by an inseparable P (see section 7). I discuss (13b) and (13c) in detail below and show how their syntactic distribution is accounted for.

5 Particle Verbs

The derivation in (14) exemplifies (12a) for the P-incorporation that takes place with particle verbs.¹⁵ In the examples below I represent only the P receptor and the T receptor (used to indicate finiteness for convenience) of the atomic V, which is boldfaced; I will maintain a head-final analysis for the Dutch VP throughout.

- (14) The finite V is base-generated; V governs PP; P adjoins to V, yielding the following structure:



Crucially, the particle, P, does not move onto the P receptor until LF.¹⁶

This structure accounts for the syntactic behavior of verb-particle constructions. As is well known, but as yet unexplained, the finite V must excorporate under V2, leaving the P stranded.

¹⁵ For arguments that particles project a syntactic projection, see Kayne 1985 and Den Dikken 1992. That they project a bare PP is argued in Koopman 1991, 1993. Whether particles are base-generated as complex syntactic verbs, as in Johnson 1991, or derived in the syntax through head movement is of little importance to the present theory, as long as the particle is linked to a syntactic PP projection. If P is base-generated as part of a complex verb, this can be achieved by assuming that P still needs to be licensed. Since it is a head, it can only be licensed by being an antecedent of a head, thus forcing the presence of a P⁰ trace, and a PP projection in the overt syntax.

¹⁶ Within the Minimalist framework the question arises what drives P-incorporation in the overt syntax. Since there is no obvious morphological motivation for overt movement, syntactic incorporation of P cannot be a literal syntactic operation. Rather, the syntactic structure in (14) must be considered to arise from the lexical representation, in the way discussed in footnote 15.

- (15) a. *Hij *opbelt* Jan.
 he upphones Jan
 b. Hij *belt* Jan op.
 he phones Jan up
 'He calls Jan up.'

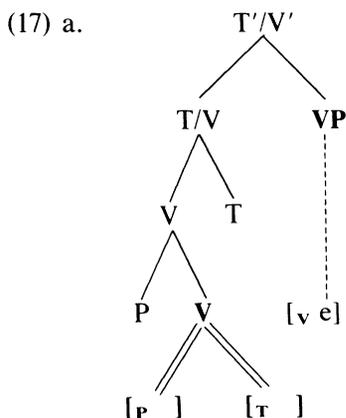
Why is this so? What forces movement of *V*, and what prevents movement of *V*? To make things even more complicated, head movement of *V* in another process, *V*-raising, is possible. Either *V* or *V* may undergo *V*-raising.¹⁷

- (16) a. dat Jan Marie wil *opbellen* (V-raising of *V*)
 that Jan Marie want upphone
 'that Jan wants to call Marie'
 b. dat Jan Marie *op* wil *bellen* (V-raising of *V*)
 that Jan Marie up want phone
 'that Jan want to call Marie'

I will address these questions in turn. Specifically, I will show that pied-piping of *V* is impossible, leaving excorporation of *V* as the only possibility, and I will provide an explanation for the asymmetry between *V*2 and *V*-raising structures.

5.1 Pied-Piping of *V*

What excludes pied-piping of the entire *V*, with subsequent checking of the finite morphology? Suppose that the entire verbal complex adjoins to some functional category—say, *T*—as in (17a). This yields the *i*-command configurations in (17b).



¹⁷ I assume that Dutch *V*-raising is needed irrespective of whether the *VP* is verb-initial or verb-final.

- b. i. V i-commands T.
- ii. V i-commands P.
- iii. V does not i-command T.

In this structure, the lexical verb, V, i-commands P, since the first node dominating V contains P. Crucially, V does not i-command T; V therefore does not govern T, and T cannot incorporate into the appropriate receptor of V, even if V counted as the head of T/V. If we assume that T must incorporate into the T receptor when the syntactic configuration is met (section 4),¹⁸ pied-piping of the particle verb is excluded in a quite simple fashion. Movement of the entire particle verb can therefore never lead to a configuration where a receptor must be satisfied in the overt syntax: the syntactically adjoined P blocks any further receptor binding in the syntax. This raises the question of how receptor binding can be satisfied at LF, when the finite verb remains in situ in the overt syntax. At LF the P receptor of V must be filled. If we assume that P incorporates into its receptor as soon as it can, P will incorporate into V in the configuration in (14). Once P has incorporated, V can excorporate and adjoin to T at LF. It is interesting that this LF derivation basically mirrors the overt syntax, as discussed in section 6.2.

5.2 Excorporation of V

Given the structure in (14), V can excorporate. V is the head of the complex V, and therefore of the VP; as a result, it can move and adjoin to some higher head, where, say, T and Agr are checked. As we have seen, Dutch allows tense and agreement morphology to be satisfied at LF in nonroot environments. However, when V moves to C, tense and agreement morphology must be assumed to be obligatorily checked in the overt syntax. Thus:

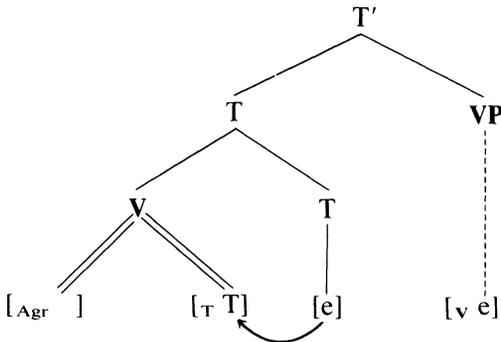
- (18) a. T, Agr must incorporate into their receptors in the overt syntax when the checking configuration is met.¹⁹
- b. T, Agr incorporate into their receptors in the covert syntax elsewhere.

If T and Agr receptors are properties of V, it follows that V must become a sister of T or Agr so as to allow receptor binding (only in this configuration does the element with the receptor i-command the element that must incorporate into the receptor). This forces head movement followed by excorporation of the finite verb for each step, as in (19).

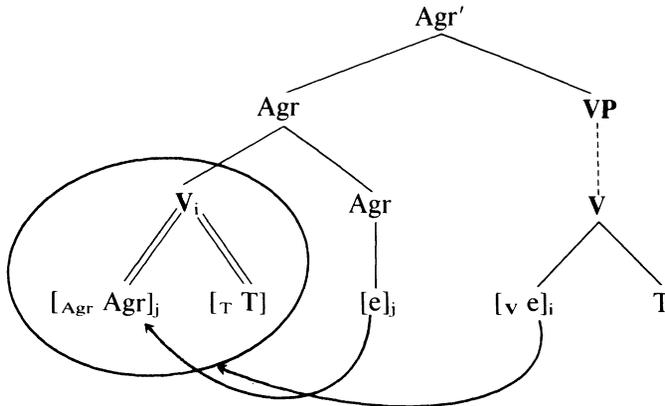
¹⁸ This assumption will exclude adjunction of a verbal complex to T in general.

¹⁹ Apparently, then, there is an asymmetry between receptor binding of lexical categories (P does not incorporate into the P receptor until LF) and that of morphological categories (T must incorporate into the T receptor when the appropriate configuration is met).

- (19) a. T incorporates into the T receptor of V.



- b. V excorporates to Agr; Agr incorporates into the receptor of V.



V finally moves on to the highest functional projection in the root clause, stranding the elements that are adjoined to the head projections it moves through (like the clitics, which are adjoined to functional positions just below C). In the configuration in (19a) V i-commands T, and T can attach to its receptor, satisfying the morphological properties of V. In order for V to excorporate, however, V must also count as the head of the complex word at this point. I have proposed, precisely for this reason, that there is a certain ambiguity regarding what element counts as the head in cases of mutual i-command. If only (12a) applies in the overt syntax, V will not be the head of the complex word. However, in order for V to be able to excorporate, V must count as the head of the complex word. This assumption is not unreasonable: since T incorporates into V, TP becomes in effect a projection of the features of V, which now includes T. Note that this problem only arises in very restricted configurations: there must be mutual i-command, and the item with the receptor must move to some *higher* head position that contains an element that must incorporate into a verbal receptor.²⁰ In other words, when

²⁰ This is actually quite close to Chomsky's checking theory. Chomsky (1993) assumes that functional heads that check some property of V have V features. The functional head disappears, or becomes inactive, after it checks the relevant morphology. The system described here provides a precise mechanism by which the head "disappears": since it incorporates, it is a trace.

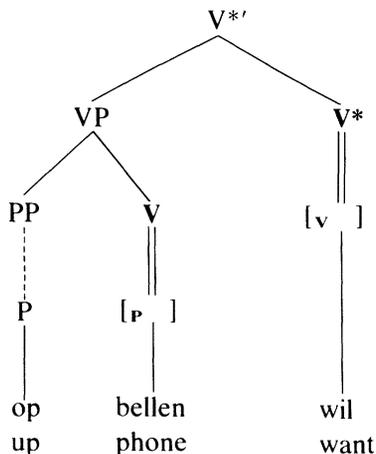
V adjoins to a higher functional head, V counts as the head only when it is forced to, namely, when the functional head has to incorporate into the receptor. If incorporation into the receptor does not take place overtly, V is unable to exorporate to any higher position in the overt syntax (although the whole complex may undergo further head movement). If incorporation into the receptor does take place, V is able to move to higher functional projections, as in the case of V2.²¹

5.3 On the Asymmetry between V-Raising and V-Second

As mentioned above, there is an asymmetry between movement in V2 structures and movement in V-raising structures. In V2 structures, excorporation of V is the only possibility allowed by the theory, once it is established that the finite morphology must be checked in the overt syntax when V moves to C. In V-raising structures, *either* the complex particle verb V *or* V may undergo V-raising, respectively pied-piping or stranding P (cf. (16)). This asymmetry can be accounted for if V-raising is another instance of head adjunction (12a), but not an instance of receptor binding (12b) in the overt syntax. Support for this analysis comes from the fact that the verbal complex behaves like a complex syntactic word on the one hand, but like a sequence of morphosyntactically independent words on the other. As is the case with particle verbs, only the finite verb excorporates under V2.

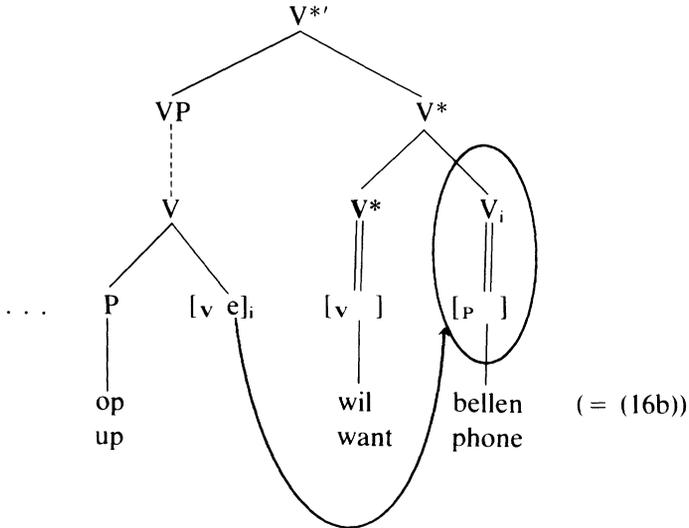
Consider the derivations for the examples in (16), shown in (20), where the verb that triggers V-raising is indicated as V*.

(20) a. V* selects V, which selects a bare PP.

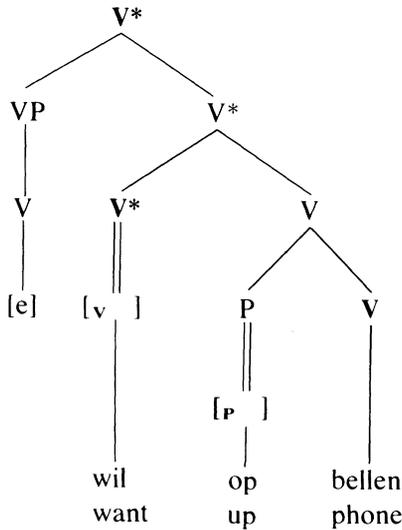


²¹ It is worth pointing out that there would be no problems for T checking in a structure like (17) given Chomsky's (1993) checking domain.

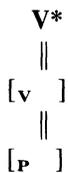
- b. Overt syntax: P adjoins to V; V excorporates and adjoins to V* (V* governs V within V*).



- c. Overt syntax: P adjoins to V; V adjoins to V* and pied-pipes P (V* governs V within V*).



- d. LF: P incorporates into V; V incorporates into V* (only V* shown).



Both movement of *V* and movement of *V* are allowed in the overt syntax. *V* is the head of *VP* and can therefore undergo head movement. Because *V* is the head of the complex *V*, *VP* is not a barrier and *V* can exorporate. Next consider the covert syntax. At LF *V* needs to attach to the *V* receptor of *V**. Thus, *V* must undergo head movement to the receptor of *V**. This is possible in either (20b) or (20c). In both cases *V** i-commands and governs *V*, and *V* can therefore incorporate into the *V** receptor at LF. Movement of the entire verbal complex under *V2* is excluded in exactly the same way as movement of the particle verb under *V2* discussed in the previous section: the *T* receptor of the molecular *V** must be filled by *T*, which requires the molecular *V** to i-command *T*. This configuration can only be achieved by excorporation of the molecular *V**. The asymmetry between what can move under *V2* and what can move under *V*-raising thus follows from a basic structural asymmetry: when the receptor licenser is structurally higher than the molecule, excorporation is the only possibility; when it is lower, excorporation or pied-piping of a complex syntactic word yields a configuration from which receptor binding can take place.

Before we consider incorporation structures where both (12a) and (12b) apply in the overt syntax, it might be useful to discuss briefly how one determines that (12a), but not (12b), applies in the overt syntax. The application of (12a) in the syntax leads to schizophrenic syntactic behavior. It relies on evidence that a head has overtly incorporated into another head. Evidence for overt incorporation can come from the fact that in certain constructions (like *V*-raising constructions) the complex head can undergo further head movement; from the syntactic immobility of the incorporated head; from the syntactic immobility of the constituent whose head has undergone head movement (see Koopman 1994 for discussion); and possibly from the presence of “transparency” (i.e., restructuring) phenomena. Evidence for overt incorporation is often obscured by the fact that the complex syntactic word consists of morphosyntactically independent words, with part of the complex syntactic word typically excorporating for the “checking” of overt morphological properties; as shown in this section, though, this is exactly what the theory predicts.

6 Inseparable P-V

Ver-prefixation, *be*-prefixation,²² and verbs with an inseparable *P* prefix represent instances where both steps in (12) apply in the overt syntax of Dutch. Discussion in this section is restricted to the formation of verbs with an inseparable *P* prefix, as illustrated in (21) (see Van Riemsdijk 1978 for discussion).

- (21) a. ondermijnen ‘undermine’
 b. onderzoeken ‘research’ (lit.: under-search)
 c. overkomen ‘happen’ (lit.: over-come)

²² Hoekstra (1988) pioneered small clause analyses for *be*-Vs, according to which the prefix *be*- originates in a small clause and incorporates into *V*.

As shown in (22), phonologically the verbs with an inseparable P prefix in (21) and particle verbs are distinct: P is accented in the latter, but V is accented in the former (this is generally the case for verbs with verbal prefixes). I have nothing to say about accent here, but simply use the latter pattern as a diagnostic criterion for receptor binding.

- (22) a. óverkomen 'come over, visit' accent on P with particle verbs
 b. overkómen 'happen' accent on V with [P V] verbs

The verbs in (21) also differ morphologically from particle verbs: the participial prefix *ge-* cannot attach either to the entire V^{23} or to V (recall that the particle attaches to a *ge-V_{part}* form with particle verbs; cf. (8) and (23c)).

- (23) [P-V_{part}] [P-ge-V_{part}] *ge-P-V_{part}*
 a. **ondermijnd** *ondergemijnd ?geondermijnd 'undermined'
 b. **overkomen** *overgekomen *geoverkomen 'happened'
 versus
 c. *overkomen **overgekomen** *geoverkomen 'visited'

Finally, the syntactic distribution of the verbs in (21) is distinct from that of particle verbs. The verbs in (21) undergo V2 and P-stranding is disallowed.

- (24) a. Mij *overkomt* dit niet vaak.
 me overcomes this not often
 'This does not happen often to me.'
 b. *Mij *komt* dit niet vaak *over*.
 me comes this not often over

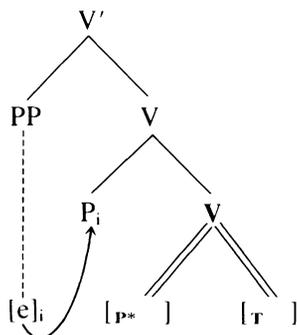
Both the morphological and the syntactic evidence show that the P is truly part of the molecular V in the overt syntax.

What syntactic structure do these verbs project? I assume that these verbs have basically the same syntactic structure as the verb-particle construction, but with the P head incorporating into the P receptor in the overt syntax. The problem with these verbs is not so much showing that P is part of the V, but showing that P is related to a syntactic projection in the overt syntax. Arguments in favor of a syntactic analysis derive from the complementation properties of these verbs. Verbs with P prefixes and particle verbs impose similar restrictions on the type of complement they take. These restrictions can be explained if a syntactic PP projection is assumed.²⁴ I indicate the property that the P receptor must be filled in the overt syntax by arbitrarily assigning a * to the receptor, as in the derivations in (25). Equivalently, we might assume that the complex verb is base-generated, the syntactic structure being projected from the complex lexical item.

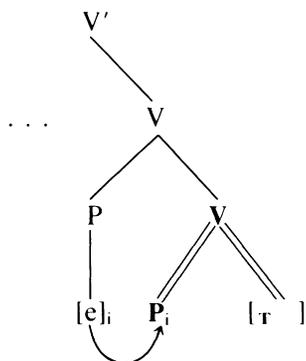
²³ Although, here again, *ge-* prefixes more freely in colloquial Dutch.

²⁴ In particular, there are no particle verbs or verbs with an inseparable P prefix that trigger V-raising—that is, that take "bare VP" complements. This gap can be explained quite straightforwardly if there is a syntactic PP projection blocking incorporation of V into the V receptor of V (for more complete discussion, see Koopman 1991, 1994).

- (25) Step 1: The finite V is base-generated; V i-commands PP; P adjoins to V, yielding



- Step 2: The P head incorporates into the P receptor in the overt syntax.



- Step 3: V excorporates, etc.

Since P incorporates into the receptor of V, it becomes part of the verbal molecule. Consequently, it pied-pipes under V2.

Truly incorporated Ps and the participial prefix *ge-* are in complementary distribution in standard Dutch. Suppose that *ge-* is an expletive element²⁵ licensing some morphological (or perhaps phonological) property of the molecular participial verb form, V_{part} ,²⁶ which is essentially that the participial molecule fit the template in (26).

- (26) [$v_{\text{part}} X^0 + V_{\text{part}}$]

²⁵ The same analysis can possibly be extended to account for the appearance of *ge-* in other forms, like the nominal forms in (i), where it attaches to the verbal root.

- (i) (al dat) gedoe, geloop, gehuil, . . .
(all that) doing walking crying
'all that movement, walking, crying, . . .'

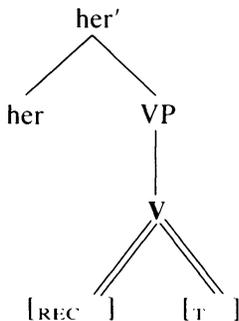
²⁶ The distribution of *ge-* resembles the distribution of verb reduplication in nominalized structures in many African languages. For an example in Gbadi, see Koopman 1984:20.

If some X^0 incorporates into the receptor of the molecular verb, (26) will be satisfied, and *ge-* need not be present. However, if no X incorporates, X will be spelled out as the morphological expletive element *ge-*.²⁷

7 The Paradigm of *Her-*

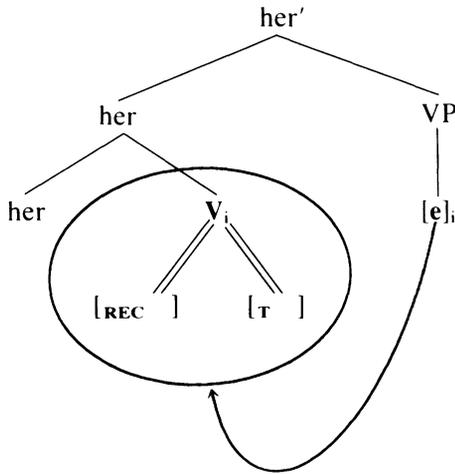
We now have all the ingredients needed to account for the paradigm of *her-*. I will treat *her-* (and *re-* as well) as a syntactic head that is *higher* than V , with V incorporating to *her-*. There are several reasons for this. The first reason is semantic: the semantics of *her-* are aspectual. If aspect is higher than V , *her-* should be higher than V as well. The second reason is based on my work in progress. Treating *her-* and *re-* as higher heads yields an account for the classes of V s to which *her-* and *re-* cannot attach that is more adequate than the one presented in Keyser and Roeper 1992 and that allows us to capture cross-linguistic differences with respect to *her-* and *re-* quite nicely. The third reason is that the proposed analysis yields a direct explanation for the paradigm under discussion. Consider attachment of *her-* to a verb other than a particle verb. Since *her-* is basically in complementary distribution with the participial *ge-* prefix and pied-pipes under $V2$, it is reasonable to assume that *her-* actually attaches to a lexical receptor of V , call it REC for convenience. This implies that two local steps of head movement are involved: adjunction of V to *her-* and incorporation of *her-* into the appropriate verbal receptor. (I arbitrarily assume that *her-* is initial in the derivations below; whether it is head-initial or head-final is immaterial to my argument.) The structure in (27c) allows further excorporation of V to T (recall that *her-* incorporation to V turns V into the head of the projection) and whatever other head positions V is forced to move through. Since *her-* becomes part of the verbal molecule, the morphological template for participles in standard Dutch is satisfied, and the morphological expletive *ge-* will not appear on the participle.

(27) a. *Her-* takes a VP complement.

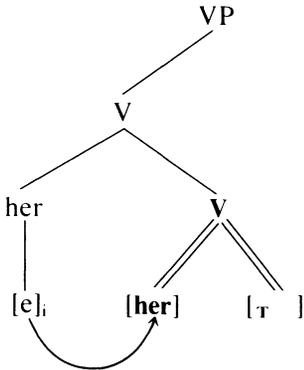


²⁷ In more colloquial Dutch, where *ge-* can cooccur more easily with P prefixes, *ge-* obligatorily precedes P. The difference between standard Dutch and more colloquial varieties of Dutch can be described as a change in the template, whereby *ge-* becomes a higher head that purely licenses participial morphology and thus does not interact with the molecular structure of V .

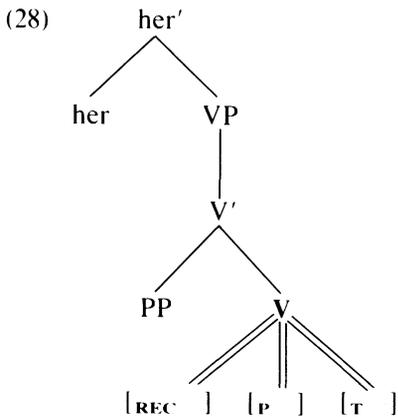
b. V adjoins to *her-*.



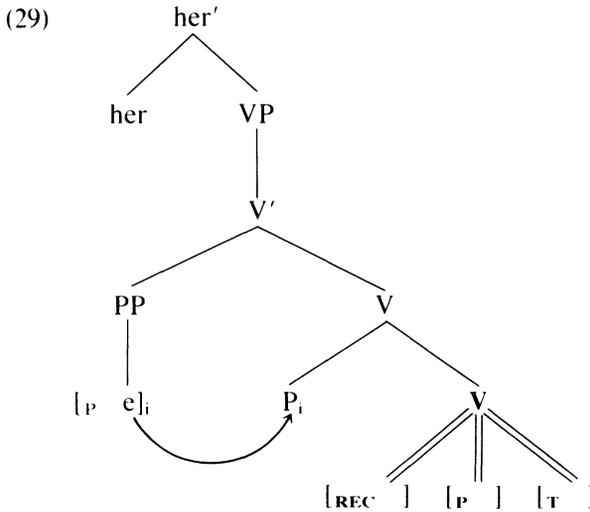
c. V governs *her-*; *her-* incorporates to REC.



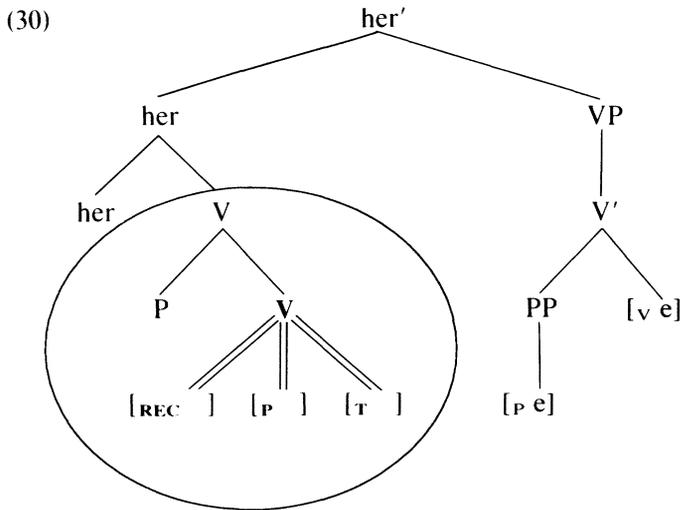
Next consider attachment of *her-* to a particle verb, with the initial structure presented in (28).



P adjoins to V, yielding (29).



Next, V adjoins to *her-*, as in (30).²⁸



²⁸ There is another logical possibility in this structure: V excorporates to *her-*, stranding the adjoined P; *her-* incorporates into V; and V further excorporates, yielding incorrect results.

- (i) *Hij herdeelt de klas in.
he redivides the class in
- (ii) *Zij hergeven dit boek uit.
they republish the book out

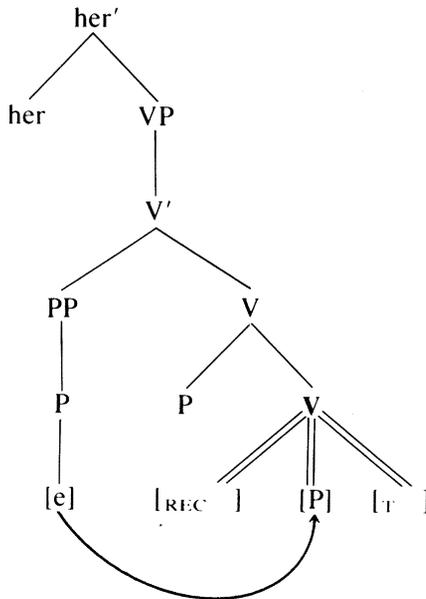
This derivation might not be distinguishable from one in which P has not incorporated. This problem recalls the fact that *re-* cannot attach to English particle verbs (Keyser and Roeper 1992) and suggests a common explanation for both Dutch (i)–(ii) and the English facts.

But now, *her-* cannot attach to REC, because V does not i-command *her-*. It is clear that V in (30) cannot undergo any further overt movement. Since P is adjoined to V, V does not i-command *her-*. Therefore, *her-* cannot incorporate into V. Since *her-* does not incorporate, it remains active as the head of the newly formed V. Therefore, V cannot get out of the projection to satisfy the tense morphology and move on to satisfy the V2 requirement: the verb is stuck. The only option therefore is to satisfy the base-generated morphology at LF, that is, to leave the V in situ—an option that is available only in nonroot environments.

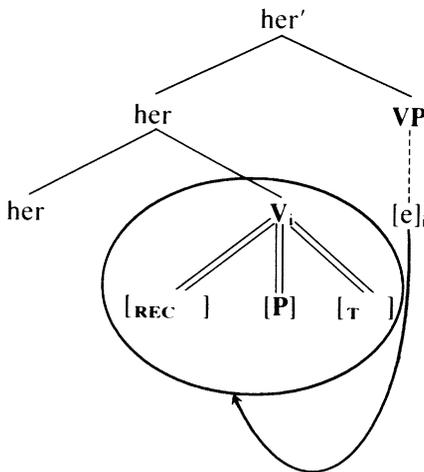
In (30) *her-* does not incorporate into a verbal receptor in the overt syntax. In fact, we already know this from the verbal morphology: there is no interaction between *her-* and *ge-* in this case (e.g., *heruitgegeven* ‘(lit. reoutgegeven) republished’). With simple verbs *her-* and *ge-* are in complementary distribution, showing that *her-* incorporates into a verbal receptor. This implies that *her-* incorporates into a verbal receptor when it can, but is not required to do so. Stress patterns on *her-* seem to support this: incorporated *her-* is unstressed, unincorporated *her-* is stressed.

The distribution of particle verbs prefixed with *her-* is thus accounted for in the following way. Finite forms of particle verbs prefixed with *her-* cannot occur in root environments. V is forced to move in root environments to satisfy the V2 requirement; it cannot remain in situ. When V moves in root environments, tense and agreement morphology must be checked in the overt syntax. V, however, cannot escape the projection of *her-*. V could escape only if *her-* incorporated. But *her-* cannot incorporate into V because P is adjoined to V. Movement of the entire verbal complex will not lead to licensing of the finite morphology in the overt syntax either, for the same reason that movement of the entire particle verb or the entire verbal complex does not yield the appropriate configuration for the checking of tense features in the overt syntax. Leaving the verb in situ in nonroot environments should be possible, however. Particle verbs prefixed with *her-* have finite forms that are restricted to nonroot environments. This raises the question of how the finite morphology is checked at LF. Why can the finite morphology be checked at LF, but not in the overt syntax? At LF, P-incorporation into the P receptor as in (31) clears the way for *her-* incorporation. In (30) V i-commands *her-*, which can therefore incorporate into the REC receptor. V is now able to exorporate as in (32), and the finite morphology can be checked in the usual manner.

(31) LF: P incorporates into the P receptor.



(32) V excorporates to *her-*.



If this analysis is correct, it predicts that Vs that must incorporate P in the overt syntax into the P receptor should be able to be prefixed with *her-* and undergo V2. This prediction seems to be borne out (though the examples are slightly degraded).

- (33) a. Deze mensen *herondergaan* iedere week dezelfde procedure.
 these people reundergo every week the same procedure.
 'These people reundergo the same procedure every week.'

- b. Zij *heronderzoeken* het bloed van de patient iedere paar dagen.
 they re-research the blood of the patient every pair days
 'They reanalyze the blood of the patient every few days.'

Thus, by treating *her-* as a higher head, the theory outlined here explains that V-movement of verbs prefixed with *her-* is impossible for overt checking reasons. It also effortlessly accounts for the fact that these verbs have finite forms and therefore lead to well-formed LF representations. The incorporation of the particle at LF allows the incorporation of *her-* and subsequent excorporation of the molecular verb.

8 Conclusion

In this article I have presented an analysis for the syntactic distribution in Dutch of particle verbs, verbs with an inseparable P prefix, verbs prefixed with *her-*, and particle verbs prefixed with *her-*, based on my proposals in Koopman 1994. In Koopman 1994 I pursue the idea that lexical properties are literally satisfied through head movement, and I try to maintain the theory of head movement in its simplest and strongest form: the way incorporation works follows from the general theory of movement as outlined in Sportiche 1988, 1990. A crucial ingredient of my proposals is the hypothesis that the satisfaction of lexical properties, which I call receptor binding, necessarily requires two local applications of head movement. If receptor binding requires two local applications of head movement, and if the overt syntax can anticipate the covert syntax, then the existence of two different types of complex heads in the overt syntax is predicted. Strong empirical support comes from the existence of both types of incorporation in Dutch. Overt head adjunction, as in Dutch verb-particle constructions, and Dutch V-raising represent the first step toward receptor binding taking place in the overt syntax: verbs prefixed with *her-*, verbs with an inseparable P prefix, are derived when both steps take place in the overt syntax. The proposals yield a straightforward and general account for the syntactic distribution: they explain what heads can excorporate, what heads must excorporate, and what type of movement complex heads can undergo. Thus, my proposals explain why the verbal part of a particle verb must excorporate, why in other cases of V-movement (such as V-raising) either the entire particle verb or the verbal part may move, and why *her-* prefixation to a particle verb has the syntactic effect of blocking V2. They also explain why LF movement of a finite verb prefixed with *her-* is possible. As far as I am aware, no formal account has previously been given for any of these facts; it is achieved by making minimal and extremely general assumptions about the structure of the theory.

Particle verbs prefixed with *her-* do not have finite forms in root environments, yet they do in nonroot environments. This shows that these forms cannot undergo V2, which is obligatory in root environments. Under the assumption that the finite morphology must be checked in the overt syntax when V undergoes V2 (i.e., moves through the functional projections into the highest functional head position of a root clause), the

inability of a particle verb prefixed with *her-* to undergo V2 follows from the configuration that would result: overt movement of such a particle verb does *not* allow such checking. Since finite forms of these verbs can occur in nonroot environments, it also follows that the morphology of the finite verb in nonroot environments is not checked in the overt syntax (i.e., by overt V-movement) but rather at LF. Thus, the finite verb in Dutch can remain in situ (or rather lower than T and Agr_S) in nonroot environments. Interestingly, as pointed out, there does not seem to be any difference between root and nonroot environments with respect to scrambling, which suggests that scrambling in Dutch is not directly dependent on movement of V.

Although much work remains to be done, especially in the domain of morphology (i.e., the internal structure of the molecular verb), this article quite strongly supports the general ideas pursued in Koopman 1994, as well as their particular implementation. In fact, as pointed out earlier, these proposals represent the way in which checking of lexical properties is achieved. They can therefore be seen as a particular instantiation of Chomsky's (1993) checking domain, which is unable to handle the data described here. In particular, Chomsky's definition of checking domain allows a head to check lexical properties of an adjoined head, irrespective of the structure within this head. The data described here establish the need for structure within the checking domain, and do so minimally. Finally, I should note that the theory of head movement presented here is quite incompatible with Kayne's (1994). In particular, it is crucial here that the head c-command an adjoined sister and that a head can excorporate, leaving adjoined elements stranded. In Kayne's account, the head does not c-command an element adjoined to it, nor is excorporation possible.²⁹

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²⁹ There are further differences. Kayne derives the fact that right adjunction to a head is impossible. I have assumed adjunction of V to the right of the higher *her-/re-* head, because V shows up to the right of the prefix. One can always get around this problem by base-generating the complex verb and left-adjoining it to an empty Asp head. Finally, multiple adjunctions to a head are disallowed in Kayne's proposals. I had to assume multiple adjunction in the case of *her-*prefixation to a particle verb ([her [v P [V]]]); this complex acts like a syntactic word and can undergo V-raising.

- (i) omdat hij het boek *heruitgegeven* heeft/heeft *heruitgegeven*
 because he the book reoutgiven has/has reoutgiven
 'because he has republished the book'

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