Long Head Movement:
The position of particles in the verbal cluster in Dutch

Hans Bennis

0. Introduction

The discussion within generative grammar about the underlying position of particles in Dutch goes back to Koster (1975) and Van Riemsdijk (1978). Koster argues that a verb and a particle constitute a compound verb. If the verb and the particle are separated this is due to the effect of Verb Movement. Central to his account is the assumption that 'Dutch has no rule of Particle Movement at all' (Koster 1975:168). Van Riemsdijk claims that the particle is the head of a particle phrase in the complement of V. The fact that verb and particle may behave as one unit is accounted for by adopting a rule of Particle Incorporation which moves the particle to the verb (or rather to a basegenerated slot in the verbal frame). Although the theory has changed in many ways, these still are the two major positions that are defended with respect to the problem of the so-called *separable compound verbs*.

Recently a lot of attention has been paid to this construction. This is of course the result of the recent interest in Head Movement since Baker (1988), Pollock (1989) and Chomsky (1986). Interestingly, most authors adopt Koster's position that particles are generated as part of a compound verb. An analysis along these lines can be found in Groos (1989), Booij (1990), Hoeksema (1991), Johnson (1991), Model (1991), Neeleman and Weerman (1991) and Verkuyl and Zwarts (1992). The analysis of Van Riemsdijk is not defended explicitly. However, the Small Clause analysis of particles, introduced by Kayne (1984), implies the occurrence of particle movement, in line with the original analysis of Van Riemsdijk. The SC-analysis of a class of Dutch particles is defended in T. Hoekstra et al. (1987), Den Dikken (1990), Bennis (1991) and E. Hoekstra (1991).

In this paper I want to discuss the position of particles in the verbal cluster in Dutch. I will show that the distribution of particles can only be explained in a straightforward way if we allow the particle to be moved. Given that particle movement is a characteristic of the analysis in which the particle is the head of a particle phrase, the facts warrant an analysis along the lines of Van Riemsdijk (1978).

Finally, I will demonstrate that there are instances of long particle movement. This implies that long Head Movement should be allowed, i.e. the Head Movement Constraint cannot be formulated as a condition on movement. It will be shown that the condition of Minimality (Chomsky 1986) sufficiently restricts the operation of Head Movement as to allow the limited occurrence of long Head Movement of particles in Dutch.

1. The distribution of particles in the verbal cluster

Everybody who has ever discussed the particle constructions in Dutch has noticed that in the case of Verb Raising[1] the particle may either be left behind or go along with the verb. An example is given in (1).

(1)	a	dat ik Jan	*op*	wil		bellen
	b	dat ik Jan		wil	*op*	bellen
		that I John	*(up)*	want	*(up)*	call
		'that I want to call John up'				

In (1a) the lower verb (*bellen*) is moved across the auxiliary (*wil*) without taking the particle along. In (1b) the particle accompanies the verb on its way up.

The crucial observation for this paper is that the particle may appear at several positions within the verbal cluster, as is shown in (2)-(4).

(2)	a	dat ik Jan	*op*	had		willen	bellen
	b	dat ik Jan		had	*op*	willen	bellen
	c	dat ik Jan		had		willen *op*	bellen
		that I John *(up)*	had	*(up)*	want	*(up)*	call
		'that I had want to call John up'					

(3)	a	dat hij mij *weg*	zou		kunnen	horen	rijden
	b	dat hij mij	zou *weg*	kunnen	horen	rijden
	c	dat hij mij	zou	kunnen *weg*	horen	rijden
	d	dat hij mij	zou	kunnen	horen *weg*	rijden
		that he me *(away)*	would	*(away)* can	*(away)* hear	*(away)* drive
		'that he would be able to hear me drive away'					

---

[1] I will use the term Verb Raising in the way it is traditionally used in Dutch syntax. This implies that Verb Raising refers to the creation of the verbal complex at the end of a Dutch sentence. The movement of the (finite) verb to C, which is often labelled Verb Raising in recent literature, is referred to as Verb Second, not as Verb Raising.
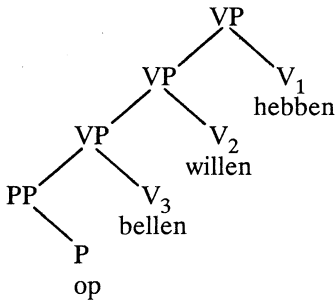
(4)   dat hij dat probleem
   a   *op* moet   hebben   willen   kunnen   lossen
   b   moet *op* hebben   willen   kunnen   lossen
   c   moet   hebben *op* willen   kunnen   lossen
   d   moet   hebben   willen *op* kunnen   lossen
   e   moet   hebben   willen   kunnen *op* lossen
        that he that problem
        (*up*) must (*up*) have (*up*) want (*up*) can (*up*) solve
        'that he must have wanted to be able to solve that problem'

Whereas sentences such as the first and last examples in (1)-(4) are extensively discussed in the generative literature, we hardly find any discussion of those cases in which the particle appears somewhere in between. As far as I know only Van Riemsdijk (1978:103) pays some attention to sentences of the type in (2b). Surprisingly, he considers sentences of this type to be ungrammatical, although he admits that such examples occur in southern dialects. It is indeed true that the acceptability judgements on the very complex sentences in (4) are somewhat unclear and inconsistent. However, I have met no native speaker that provides a clear-cut distinction between acceptable sentences in (4a) and (4e) and unacceptable ones in (4b-d), which is the distinction consistent with Van Riemsdijk's theory. Given that native speakers tend to accept at least some of the intermediate cases (cf. Haeseryn 1990, de Hoop and Smabers 1987), that sentences of this type can be observed in language use quite easily and that all speakers have a clear contrast between any of the above mentioned examples and ungrammatical examples in which the particle follows the verbal cluster, I will take all sentences in (1)-(4) to be grammatical.

2. *Van Riemsdijk vs Koster: the derivation of constructions with particles inside the verbal cluster I*

Van Riemsdijk claims that it is an advantage of his theory that it predicts that sentences of the type in (2b) are ungrammatical. As I will demonstrate, it is indeed true that his theory makes such a prediction. The relevant part of the underlying structure is given in (5).
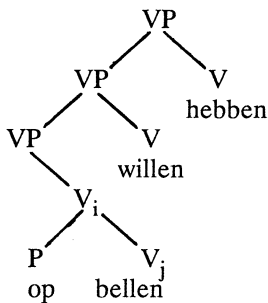
(5)

```
                         VP
                        /  \
                    VP       V₁
                   /  \      hebben
               VP      V₂
              /  \     willen
          PP      V₃
         /  \     bellen
             P
            op
```

(5)

$$
\begin{array}{c}
\text{VP} \\
\diagup \quad \diagdown \\
\text{VP} \qquad \text{V}_1 \\
\text{hebben}
\end{array}
$$

In Van Riemsdijk's analysis there are two operations involved in the deriva-
tion of S-structure clusters: an optional rule of Particle Incorporation and an
obligatory rule of Verb Raising. The cluster in (2a) is derived by the applica-
tion of Verb Raising only. The particle is left behind in its D-structure
position. Alternatively, the particle may incorporate in the V *bellen* before the
application of Verb Raising. In that case (2c) is derived. The impossibility of
the derivation of (2b) is caused by the fact that in this system Particle Incor-
poration is a substitution rule that moves the particle into a base-generated
slot within V. Moreover, rule ordening (Particle Incorporation is ordered
before Verb Raising) and the condition on cyclic application of transforma-
tions have the same effect.

   One of Van Riemsdijk's arguments against Koster's proposal, in which
verb and particle constitute a compound verb at D-structure, is that such an
analysis would predict (2b) to be grammatical. If Koster's analysis indeed
makes such a prediction, it would be an argument in favour of Koster in our
view. However, as far as I can see (2b) cannot be derived in Koster's analysis
either. His underlying structure of (2) is given in (6).

(6)

```
                    VP
                   /  \
               VP       V
              /  \      hebben
          VP      V
         /  \     willen
             Vᵢ
            /  \
          P     Vⱼ
          op    bellen
```

Koster derives the verbal cluster by Verb Raising only. With Verb Raising
either V_i or V_j are raised. If V_j is raised, the result is (2a); if V_i is raised, (2c)
is derived. I don't see any non-ad-hoc way to derive (2b) along these lines. If

V_j is moved, the particle will always appear before the verbal cluster. If V_i is moved to V (*willen*), the resulting cluster is [*willen* [*op bellen*]]. It is hard to see how another application of Verb Raising would result in the cluster of (2b): [*hebben op willen bellen*].

Evaluating this discussion, we may conclude that Van Riemsdijk is right in that sentences of the type in (2b) constitute an argument against Koster, albeit for reasons that are opposite to the reasons he provides. Van Riemsdijk claims that (2b) is out and that Koster incorrectly predicts this sentence to be grammatical. I think that (2b) is grammatical and that Koster incorrectly fails to derive this sentence. Given that Van Riemsdijk is also not able to derive this sentence, we cannot accept his analysis either.

3. Particle movement: the derivation of constructions with particles inside the verbal cluster II

In this section I will argue that sentences of the type in (2b) can only be derived in a system in which particles can be moved separately. This argues for a D-structure as in (5). There is a straightforward way in which we may derive all the sentences in (2)-(4), starting with this D-structure. In order to do so, I will have to make explicit some general theoretical assumptions. First, I will assume that Verb Raising is an instance of Head Movement, which adjoins a lower verb to a higher one. Given that this movement always results in a change in the order of verbs, I will take V-movement to be right-adjunction. Second, I will assume that heads of other lexical categories (N, A, P) can be adjoined to a higher verb as well. In those cases the adjunction is left-adjunction.[2] Instances of these adjunctions are given in (7).

---

[2] It is not clear to me why N/A/P-adjunction is left-adjunction and V-adjunction right-adjunction. The fact that N/A/P-adjunction cannot be right-adjunction may be related to the fact that the categorial status of the complex V^0 is determined by the righthand member of the complex, given the Right-hand Head Rule (cf. Trommelen and Zonneveld 1986). This does not explain why V-adjunction cannot be left-adjunction (cf. Den Besten and Broekhuis 1991). This can be accounted for if we assume that the Tense-licensing of verbs, which triggers Verb Raising, (cf. Bennis and Hoekstra 1989) is directional.

(7) a   dat Jan met mij wil [kunnen [spelen]$_V$]
        that John with me want can play
    b   dat Jan mij wil [[op]$_P$ bellen]
        that John me wants up call
    c   dat Jan niet wil [[piano]$_N$ spelen]
        that John not wants piano play
    d   dat Jan het mij wil [[duidelijk]$_A$ maken]
        that John it me wants clear make

These assumptions are sufficient to explain the distribution of particles in the verbal cluster. This will be demonstrated by applying the adjunction rules to the structure in (5).

(8) a   op hebben willen bellen (=2a)
        op bellen willen hebben   D-str
        op [willen bellen] hebben V_3-to-$V_2 \Rightarrow [V_2\text{-}V_3]_i$
        op [hebben [willen bellen] V_i-to-$V_1 \Rightarrow [V_1\text{-}[V_2\text{-}V_3]_i]_j$
        ([op [hebben [willen bellen]]]   P-to-$V_j \Rightarrow [P\text{-}[V_1\text{-}[V_2\text{-}V_3]_i]_j]_j)^3$
    b   hebben op willen bellen (=2b)
        op bellen willen hebben   D-str
        op [willen bellen] hebben V_3-to-$V_2 \Rightarrow [V_2\text{-}V_3]_i$
        [op [willen bellen] hebben   P-to-$V_i \Rightarrow [P\text{-}[V_2\text{-}V_3]_i]_j$
        [hebben [op [willen bellen]]] V_j-to-$V_1 \Rightarrow [V_1\text{-}[P\text{-}[V_2\text{-}V_3]_i]_j]_j$
    c   hebben willen op bellen (=2c)
        op bellen willen hebben   D-str
        [op bellen] willen hebben   P-to-$V_3 \Rightarrow [P\text{-}V_3]_i$
        [willen [op bellen] hebben V_i-to-$V_2 \Rightarrow [V_2\text{-}[P\text{-}V_3]_i]_j$
        [hebben [willen [op bellen]]] V_j-to-$V_1 \Rightarrow [V_1\text{-}[V_2\text{-}[P\text{-}V_3]_i]_j]_j$

We thus observe that the different orders can be derived by the application of head movement in a mechanical way. From the analysis presented above, it is clear that the variance in the position of the particle is exclusively due to the point at which the particle enters the verbal cluster. Given that rule ordering nor cyclicity play a role in the present model, it would be surprising if the particle would not show the apparent freedom illustrated in (2)-(4).[4]

---

[3] P-adjunction is optional and doesn't give rise to a difference in order in this case, but there is no reason to exclude P-adjunction. As a consequence P may or may not belong to the cluster.

[4] The application of Head Movement of the particle does not give rise to a change in interpretation. In this case Head Movement is fully optional. This appears to be in conflict with the 'economy'-approach in Chomsky (1992).

However, this analysis is crucially dependent on the availability of P-movement as an instance of the general rule of Head Movement. If there is no particle movement, as in Koster (1975) and all analyses that are based on the idea that particles are part of a compound verb at D-structure (see section 0), there is no way to derive all possible orders by general rules or principles of the theory.[5]

4. Long particle movement

It is not only the case that sentences of the type in (2b) must be derived through particle movement, it can also be shown that sentences such as (2b) involve long Head Movement.[6] In (9) we find the structure of the verbal cluster of (2b) before the application of particle incorporation.

(9)
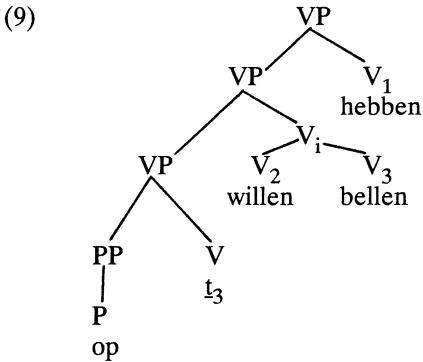
The next step in the derivation is the movement of the particle *op* to V_i. This movement should proceed in one step across the intervening head position V_3. We cannot break up this movement in two steps, given that adjunction of P to t_3 results in a *verbal* cluster $[op\ t]_V$. The next step would be the *right-adjunction* of the created verbal cluster, resulting in the ungrammatical order

---

[5] There are several other arguments in favour of an analysis in which particle and verb are separated at D-structure, some of which can be found in Hoekstra et al. (1987), Den Dikken (1990) and Bennis (1991).

[6] It might be the case that the slight markedness in acceptability of (2b) results from the fact that long movement is involved, whereas in (2a) there is no particle movement at all and in (2c) only short P-movement.

willen bellen op.[7] In order to get *left*-adjunction of the particle to V_j, the particle has to move to V_i on its own. We thus have to conclude that (2b) involves a case of long Head Movement.

This implies that the grammar should allow Head Movement to proceed across intervening head positions. It thus follows that the strong locality requirements on Head Movement cannot be taken as a consequence of a condition on Head Movement itself. In the construction under discussion it is quite clear that long Head Movement is possible only if the intervening head position is empty. This can be demonstrated with those cases in which Verb Raising is optional. There are two instances of optional Verb Raising: a) constructions with past participles and b) constructions with only one auxiliary modal verb (cf. Den Besten and Broekhuis 1990). This optionality is shown in (10) and (11).

(10) a   dat Jan een boek gelezen heeft
      b   dat Jan een boek t̲ heeft gelezen
          that John a book read has / has read
(11) a   dat Jan een boek lezen zal
      b   dat Jan een boek t̲ zal lezen
          that John a book read will / will read

The 'normal' order of verbs in Dutch is AUX - V, as in (10b) and (11b). This is the result of Verb Raising. The possibility of the order V - AUX in (10a) and (11a) indicates that Verb Raising is optional in those cases. If movement of the particle would be possible across a lexical intervening head, we would predict that the underlying structures in (12a) and (13a) would give rise to sentences such as (12b) and (13b). The ungrammaticality of these sentences shows that long Head Movement does not proceed across intervening lexical heads.

(12) a   dat Jan mij op gebeld heeft
      b   *dat Jan mij t$_i$ gebeld op$_i$ heeft
          that John me up called has / called up has
(13) a   dat Jan mij op bellen zal
      b   *dat Jan mij bellen op zal
          that John me up call will / call up will

---

[7] It does not follow from the analysis presented here that the order *V-V-part* is ungrammatical if we derive this order in the way described here. There are several ways to deal with this problem. Since it is irrelevant for the present discussion I will not discuss this issue here.

It can be shown that the possibility of long Head Movement with empty intervening heads and the impossibility of long Head Movement with lexical intervening heads follows from the theory as presented in Chomsky (1986).[8] Chomsky (1986:70) claims that long Head Movement is impossible as a consequence of the ECP. His argumentation runs as follows. Suppose we have a structure as in (14).

(14)   ...[$_x$...[$_y$ ...β...]...δ...]...α...

In (14) α, β, δ are heads and y, x are maximal projections of β, δ respectively. y is a barrier for Head Movement of β to δ. This barrier is removed if δ L-marks y. If β is a particle and δ is a verb, δ L-marks y. As a consequence β can be moved to δ without resulting in an ECP-violation: the trace left by the movement of β is properly governed since there is no barrier for antecedent-government between [δ-β] and the trace of β. Suppose we move β in one step to α. There is no problem for the movement itself if δ and α L-mark y and x respectively. However, such a movement will result in an ECP-violation. The trace in β must be antecedent-governed. Government (not movement) is restricted by Minimality. The Minimality Condition (Chomsky 1986:42) formulated in (16) holds of the configuration in (15).

(15)   ...[$_x$ ...β...δ...]...α...
(16)   α does not govern β in (15) if x is a projection of δ
        excluding α   (Chomsky 1986:42)

The condition in (16) implies that an intervening head blocks (antecedent-)-government. In this way the ECP prevents long Head Movement. Chomsky argues that from this analysis it follows that Head Movement is always strictly local (Chomsky 1986:70/71). This is not a logical consequence, however. If α L-marks x in (15), x is not a barrier for movement, but it is a minimality-barrier for a government relation between α and β. In the case of (long) Head Movement of β to α, this barrier must be removed in order to prevent an ECP-violation. I will assume that movement of δ to α removes this mini-mality-barrier. Moving δ to α, the trace of δ is antecedent-governed by δ in the amalgamated element α-δ. The projection of δ (x) is not a minimality-barrier for this relation. If we move β to α-δ in one step, δ in the amalgamat-

---

[8] The condition that the head must be empty is in several respects reminiscent to the 'head constraint' in Zwarts (1975) and Van Riemsdijk (1978). It also has some similarity with the approach of Baker (1988). However, the fact that it crucially concerns the emptiness of an *intervening* head in this case, makes these proposals different from the condition discussed here.

ed element β-[α-δ] still antecedent-governs t_δ. Given that Head Movement results in a situation in which both heads are no longer distinct, it follows that x is not a minimality-barrier for antecedent-government between β and the trace of β either. We thus need movement of an intervening head to allow long Head Movement. This conclusion is in most respects similar to a proposal in Coopmans and Stevenson (1991). They claim that 'V induces a barrier by Minimality if and only if the verb has not moved to Infl' (C&S:364). In this way they are able to explain the contrast between adjunct extraction from finite and from infinitival clauses. According to them, the reason that movement removes a Minimality barrier is that 'the trace of a moved verb is not strong enough to induce Minimality' (C&S:362). Although I agree with their proposal in general, it is not clear to me that the strenght of the trace is the relevant factor. I would prefer to interpret the Minimality condition as indicated above, which implies that in (15) x is a Minimality barrier only if α and δ are distinct.

I thus conclude that the theory supports an analysis in which the (intermediate) position of particles in the verbal cluster in Dutch is derived through (long) Head Movement. This analysis is consistent only with an analysis in which particles can be moved separately.

References

Baker, M. (1988) *Incorporation: A Theory of Grammatical Function Changing*, University of Chicago Press, Chicago.

Bennis, H. (1991) 'Theoretische aspekten van partikelvooropplaatsing II', *TABU* 21, 89-95.

Bennis, H. and T. Hoekstra (1989) 'Why Kaatje was not heard sing a song', in D. Jaspers et al., eds., *Sentential Complementation and the Lexicon*, Foris, Dordrecht.

Besten, H. den, and H. Broekhuis (1990) 'Woordvolgorde in de werkwoordelijke eindreeks', Ms. ATW-UvA.

Booij, G. (1990) 'The boundary between morphology and syntax: separable complex verbs in Dutch', in G. Booij and J. van Marle, eds., *Yearbook of Morphology 3*, Foris, Dordrecht, 45-63.

Chomsky, N. (1986) *Barriers*, MIT-Press, Cambridge, Mass.

Chomsky, N. (1992) 'A Minimalist Program for Linguistic Theory', Ms. MIT.

Coopmans, P. and S. Stevenson (1991) '*How* Extraction from Finite and Infinitival Complements: A Surprising Asymmetry', *Linguistic Inquiry 22, 359-367*.

Dikken, M. den (1990) 'The structure of English complex particle constructions', in R. Bok-Bennema and P. Coopmans, eds., *Linguistics in the Netherlands 1990*, Foris, Dordrecht.

Evers, A. (1975) *The Transformational Cycle in Dutch and German*, Diss. Utrecht.

Groos, A. (1989) 'Particle-verbs and adjunction', in H. Bennis and A. van Kemenade, eds., *Linguistics in the Netherlands 1989*, Foris, Dordrecht.

Haeseryn, W. (1990) *Syntactische normen in het Nederlands: Een empirisch onderzoek naar volgordevariatie in de werkwoordelijke eindgroep*, Diss. Nijmegen.

Hoeksema, J. (1991) 'Theoretische aspecten van partikelvooropplaatsing', *TABU* 21, 18-26.

Hoekstra, E. (1991) *Licensing Conditions on Phrase Structure*, Diss. Groningen.

Hoekstra, T. et al. (1987) 'Complexe Verba', *GLOT* 10, 61-78.

Hoop, H. de, and P. Smabers (1987) 'Rood of Groen? Een normenonderzoek naar enkele stijlverschillen tussen gesproken en geschreven taal', *De Nieuwe Taalgids*, 80, 287-302.

Johnson, K. (1991) 'Object Positions', *Natural Language and Linguistic Theory*, 9, 577-636.

Kayne, R. (1984) 'Principles of Particle Constructions', in J. Guéron et al., eds., *Grammatical Representations*, Foris, Dordrecht.

Koster, J. (1975) 'Dutch as a SOV language', in A. Kraak, ed., *Linguistics in the Netherlands 1972-1973*, Van Gorcum, Assen.

Model, J. (1991) 'Incorporatie in het Nederlands', *Gramma* 15, 57-88.

Neeleman, A. and F. Weerman (1991) 'The balance between syntax and morphology: Dutch particles and resultatives', Ms. OTS-RUU.

Pollock, J.-Y. (1989) 'Verb Movement, UG and the structure of IP', *Linguistic Inquiry* 20, 365-424.

Riemsdijk, H. van (1978) *A Case Study in Syntactic Markedness*, Foris, Dordrecht.

Trommelen, M. and W. Zonneveld (1986) 'Dutch Morphology: Evidence fror the Right-hand Head Rule', *Linguistic Inquiry* 17, 147-169.

Verkuyl, H. and F. Zwarts (1992) 'Postpositie, incorporatie en terminativiteit', in H. Bennis and J. de Vries, eds., *De Binnenbouw van het Nederlands*, ICG-Publications, Dordrecht.

Zwarts, F. (1975) 'Some remarks on the linear cycle in Dutch syntax', Ms. University of Groningen.