

# What do you move to what end? An exercise in anti-symmetry.<sup>√</sup>

## *From language design to contrasts between Dutch and Frisian*

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### 0. Structure and aim

In this contribution I will discuss a number of issues arising from the theory of movement developed in the anti-symmetric framework (see Kayne 1994, Koopman & Szabolcsi 2000, etc.). After a brief discussion of some foundational issues, the specific discussion will focus on the parametric variation in Dutch and Frisian verb clusters. A proposal recently put forward in Kayne (2003b) provides an interesting perspective on this variation.

### 1. Background

In order to attain the explanatory goals of our investigation of language it is important to be as precise as possible about the scope of our theories and the tools they provide for us to understand the mechanisms of language. Recent work on the theory of grammar (the minimalist program developed in Chomsky (1995) and subsequent work, and the anti-symmetric approach developed in Kayne (1994), and subsequent work such as Kayne (2003a,b,c) spawned an important discussion of the basic tools of linguistic description, leading to a reassessment of many assumptions that were hitherto taken for granted.

Kayne (1994 and subsequent work) argues that natural language is characterized by the basic anti-symmetric configuration in (1):

- (1) [HP Spec [H' H Comp]]

This configuration is respected at all stages of the derivation. There is no adjunction, nor are there multiple specifiers. Where other theories posit adjunction or multiple specifiers a structure is posited that contains a (silent) functional head rendering the structure compatible with (1). An important additional assumption is (2):

- (2) All movement is overt

A recent elaboration of the anti-symmetric model can be stated as in (3) (Koopman 2003):

- (3) “Constituents are not build up in the traditional way (i.e. DPs are build before they mergewith V), but rather in layered, intertwined structures: V merges with NP and D merges with VP attracting NP .... followed by subsequent remnant VP movement; PPs do not merge with V(P), but attract DP to their right and a remnant VP to their left ....”.

This position reflects the claim that selection is strictly local (Sportiche 2002):

- (4) - H [X ...] ; if H selects for lexical properties its complement must be lexical

An issue that has remained largely open thus far, is what triggers movement in the anti-

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<sup>√</sup> This paper is dedicated to Hans den Besten as a token of friendship and in appreciation of his continuously inspiring role in our common endeavour to understand the structure of language. A first draft of this paper was presented at the NYU workshop on Remnant Movement, NYU Oct. 31-Nov.1 2003. I would like to thank the participants for their comments.

symmetric model. In most conceptions of the minimalist program movement is driven by the need to check and eliminate uninterpretable features. In the anti-symmetric model it is not obvious that in all cases such features can be motivated. Clearly, other driving forces are conceivable, such as the requirement that certain constituents be sufficiently 'light', as proposed by Koopman and Szabolcsi (2000), leading to forced evacuation. Retaining the assumption that a considerable part of movement is triggered by checking requirements Kayne (2003c) proposes that at least some movement may be forced by a general condition that each specifier must be filled once in a derivation, but still subject to the requirement that some checking is possible. In this contribution I will explore the consequences of that position, together with a number of other hypotheses that Kayne proposes in his recent work.<sup>1</sup>

This leads to a computational system with the following core properties (Kayne 2003b: 24-25/(296-298), see also Kayne 2003a, and 2003c):

**Core properties of the computational system** (for ease of reference I introduce a label for each of the properties)

- (5) *No vacuous Specifiers*  
For any H, H a head, Spec, H must be filled once during a derivation.
- (6) *1-step down hypothesis*
- a. The complement of a given head H can never move to the Spec of H  
For (6a) Kayne gives the following rationale: upon Merge the maximal set of matching features has to be checked; consequently, no feature will be available for checking in the Spec-position. We could call this a principle of *No vacuous checking*
  - b. Move to Spec, H, the category closest to H that is not excluded by (6a)  
Kayne introduces this principle in a discussion of the internal structure of PPs, stating that what gets moved to Spec, P is determined by what was merged below P and in what order. In the spirit of his discussion I generalize this to the statement as given, entailing that in general, for any H, what gets moved to Spec, H is determined by what was merged below H and in what order.

I will now start exploring some consequences of (5) and (6).

## 2. Issues of language design

An important concern of linguistics is position of language among man's cognitive faculties. From this perspective it is important to be as clear as possible about the relation between theory of grammar and theory of language production and processing. Logically there are the following alternative lines:

- (7) Alternative lines:
- the theory of grammar and theory of processing (parsing) are unrelated  
There are grammatical *principles* versus processing *strategies*; the latter make use of resources of our cognitive structure that may be quite different from our grammatical knowledge
  - the grammar is the parser modulo limitations on working memory, attention, etc.

The strongest and most interesting position in this respect is the position defended in Marantz (2000, 2003), reflected in the following quote:

"The split between linguistics and psycholinguistics in the 1970's has been interpreted as

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<sup>1</sup> In order to do so I will push these hypotheses, possibly beyond what Kayne is committed to, given the tentative nature of some of his suggestions. I do feel that the consequences are interesting enough to merit discussion.

being a retreat by linguists from the notion that every operation of the grammar is a mental operation that a speaker must perform in speaking and understanding language. But, putting history aside for the moment, we as linguists cannot take the position that there is another way to construct mental representations of sentences other than the machinery of grammar. ....There is no retreat from the strictest possible interpretation of grammatical operations as the only way to construct linguistic representations"

To me this seems the only reasonable position to adopt for linguistics as a branch of cognitive science.

Note, that the standard conception of the minimalist program is straightforwardly compatible with psycholinguistic models based on symbolic computations ( e.g. Levelt (1989)'s grammatical en-/decoder):

- (8) Procedure:
- a. select lexical array  
the lexical array selected at a time may be limited to material constituting one predicate and its arguments, as reflected in recent phase-based approaches (Chomsky 1999)
  - b. put it in working memory<sup>2</sup>
  - c. mechanically execute what is necessary for feature matching
  - d. select material for next phase, combine with results of a-c, etc.

From such a neuro-cognitive perspective many further questions arise. For instance, one of the pervasive features of natural language is the presence of un-interpretable features, whose sole function appears to be that they drive the computation. If they are pervasive, are they part of the design of natural language? If yes, what could be the evolutionary advantage of non-interpretable feature checking? Of course, given our present state of knowledge, any answer will have to be speculative. But we might speculate that during processing relations between formal features stand for the relations between the full constituents they are features of; use of stand-ins puts less demands on processing resources. Suppose we assume a division between declarative and procedural memory systems (Ullman 2001). If lexical elements are part of the declarative memory system, formal features can be well understood as are part of the interface between declarative and procedural memory.

From the perspective of the anti-symmetric model an obvious further question arises: What issues does this particular model raise for language design? Specifically one may think of the claim that all movement is overt, the claim that selection is always local and lexical categories select for lexical categories (Sportiche 2002), and the massive movement and intertwining this entails. What kind of claim about the human processor is involved? What evolutionary advantages?

Speculations:

- i. an even more fundamental distinction between lexical and functional material than in the Minimalist Program;
- ii. functional categories constitute the evolutionary leap as the instruments in the generative engine to help encode relations;

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<sup>2</sup> As Jackendoff (2002) notes, 'putting in working memory' is a very loose way of speaking about a complex process. For current purposes the term suffices, however.

- iii. the [Spec [Head Comp]] configuration is the canonical configuration for relations; intertwined movement is the only way to grammatically encode a predicate-argument relation;
- iv. the claim that all movement is overt is equivalent to saying that the computation cannot single out a subset of features of X in terms of availability at a particular point in the computation; note that in mental space there is no sense in which some computations could be more abstract than others; all computations are equally concrete. All movement is overt can only mean that if one feature is involved in a computation, all features are, including the instructions for pronunciation. Thus features cannot stand proxy for categories and/or their copies.

For purposes of illustration consider some sample derivations taken from Kayne (2003b).  
Simple example: *saw us*

- (9) Merger of *saw* and *us*  
*saw us* → Merger of K(ase)  
 K [saw us]  
 us [K [saw us]]

Here the relation between *saw* and *us* is expressed by *saw* being ‘embraced’ by *us*. (Note: here and elsewhere *italics* will be used for 'non-pronounced material'.)

Consider the following more complex case (Kayne (2003b) with bracketing added) of deriving *looking at us*. *at* reflects the relation between the predicate *looking* and the object *us*:

In the traditional representation the mediating role of *at* in *looking [at us]* requires that *looking* can see *at* in *at us* and *us* beyond *at* and that *at* can relate *looking* and *us* (which it cannot do directly in the anti-symmetric program).

- (10) *looking us* → merger of K  
 K [looking us] → movement of DP to spec K  
 us<sub>i</sub> [K [looking t<sub>i</sub>]] → merger of P  
 P [us<sub>i</sub> [K [looking t<sub>i</sub>]]] → movement of VP to spec, P  
 [ looking t<sub>i</sub> ]<sub>j</sub> [at [us [K t<sub>j</sub> ]]]  
 = [looking t<sub>i</sub> ]<sub>j</sub> [at [us<sub>i</sub> [K [looking us<sub>i</sub> ]<sub>j</sub> ]]] or  
 [looking us<sub>i</sub> ]<sub>j</sub> [at [us<sub>i</sub> [K [looking us<sub>i</sub> ]<sub>j</sub> ]]]

Here we can say that in the end *us* embraces *looking*; *looking us* embraces *at*. So, the relevant dependencies are represented configurationally, without canonical MP style feature checking.

Consider next the derivation of post-positions:

- (11) *looking us* → merger of K  
 K [looking us] → movement of DP to spec K  
 us [K [looking us]] → merger of P'  
 P' [us [K [looking us]]] → movement of VP to spec, P'  
 [ looking us ]<sub>j</sub> [P' [us [K [looking us]<sub>j</sub> ]]] → merger of P  
 at [[ looking us]<sub>j</sub> [P' [us [K [looking us]<sub>j</sub> ]]]] → movement of KP to Spec, P  
 [us K t<sub>j</sub>]<sub>k</sub> at [ looking t<sub>i</sub> ]<sub>j</sub> P' t<sub>k</sub> =  
 [[us [K [looking us]<sub>j</sub>]] [at [[ looking us]<sub>j</sub> [P' [us [K [looking us]<sub>j</sub> ]]]]]]

As Kayne shows, deriving a postpositional structure requires using a kind of ‘shadow preposition’. This seems costly in a sense, requiring double lexical access in order to introduce on over preposition. One might wonder why such a derivation would be available at all? Its availability can be understood if the ‘traditional’ generative way of expressing a relation between verb, postposition and argument is simply not possible for the human processor. If the human processor can only encode relations by intertwining, the learner hears the postpositional order and has to reconcile it with the properties of the computational system. Note, that there is no a priori notion of naturalness of encoding to which one could appeal pro or contra a certain hypothesis about mental representations. In this particular case we simply don’t know. What is important, though, is that the predictions about processing the anti-symmetric model makes are non-trivial. If it puts heavy restrictions on the way in which dependencies are encoded this should be testable. In principle, manipulations of material cost time and resources. Hence, postpositional constructions should impose a heavier demand on processing resources than prepositional constructions.

Thus, from a perspective in which the grammar and the parser/processing system are identical modulo limitations on working memory, attention, etc. the anti-symmetric model has implications for processing that differentiate it in interesting ways from other existing models.

Leaving aside the grand issues of language design, I will discuss an issue in micro-variation, and show that by pushing the 1-step down hypothesis an interesting result can be obtained. Although language specific stipulations cannot be entirely avoided, as seems natural, they are rather low-level. I will discuss two closely related contrasts between Dutch and Frisian verb clusters, one involving bare infinitives, the other *te*-infinitivals.

### 3. Some contrasts between Dutch and Frisian

As is well-known, both Dutch and Frisian are superficially OV and V CP. Both form verb clusters in the sense of Evers (1975). The order difference in bare infinitival verb clusters can be characterized as in (12):

- (12) Differences in verb clusters:
- i. Dutch: V1 V2 .... Vn
  - ii. Frisian: Vn Vn-1...V1

The syntactic principles involved in the variability of Germanic Verb clusters have been the subject of extensive debate, much of which finds its basis in the seminal work by Hans den Besten and many colleagues who worked with him (see, for instance, Den Besten 1989, Den Besten and Broekhuis 1992a, Den Besten and Broekhuis 1992b, Den Besten and Edmondson. 1983, Den Besten and Moed van Walraven. 1986, Den Besten and Rutten 1989, Den Besten and Webelhuth 1987, Den Besten and Webelhuth 1990). See Haegeman and Van Riemsdijk (1986) for a rather extensive overview of the range of variation involved.

As first discussed in Kaan (1992), and subsequently taken up by Zwart (1993) and his further work, in the anti symmetric approach, VO is taken as the basic order; OV orders arise through movement. Thus the OV-VO parameter reduces to the presence or absence of certain movements.

Within checking theory (Chomsky 1995) such movement is enforced by attracting forces only (in contrast to the repelling force of Stowell (1981)'s Case resistance principle). Within the anti-symmetric model Koopman and Szabolcsi (2000), assuming that all movement is overt, derive word order variation primarily on the basis of remnant movement. Movement may be enforced by filters on the content VPs may have in certain position, requiring them to be vacated.

As noted above, Kayne (2003a,b,c) offers a perspective of a syntactic computation essentially driven by blind requirements inherent to the configurations arising from merging functional material. That is, the system has the ingredients discussed earlier, and repeated here:

(5) *No vacuous Specifiers*

For any H, H a head, Spec, H must be filled once during a derivation.

(6) *1-step down hypothesis*

- a. The complement of a given head H can never move to the Spec of H
- b. Move to Spec, H, the category closest to H that is not excluded by (6a)

In exploring the system we will add the following substantive hypothesis (Kayne 2003a: (45)):

- (13) For an IP to function as the argument of a higher predicate it must be nominalized.  
 The merger of an argumental IP takes place: i) via a Noun; ii) via nominalization

So, the empirical issues include:

- How mechanically can the 1-step down hypothesis be applied?
- What substantive assumptions are necessary?

The strongest position would be that (5) and (6) are sufficient.

We will start with the following puzzle involving Dutch and Frisian:

- How to derive the order contrast between bare infinitives in (16) and (17)

*3.1. Bare infinitives in Frisian and Dutch*

As noted above, there is an interesting difference in verb order between Dutch and Frisian. Moreover the Frisian infinitive has two forms; in (14), where it is in the complement of a perception verb; thus, in (14) *sjongen* 'sing' requires the marking *-n*. This marking must be absent when it is construed with an auxiliary. This is illustrated in (16). In Dutch there is no such contrast (see Reuland (1981, 1982, 1990).

*Frisian*

- (14) (ik tink dat) Pier him dat liet sjonge\*(n) hearde|\* hearde sjongen  
 I think that Peter him that song sing heard

*Dutch*

- (15) (ik denk dat) Piet hem dat lied hoorde zingen| \*zingen hoorde  
 I think that Peter him that song heard sing

- (16) a. (ik tink dat) er dat liet sjonge(\*n) kin  
 I think that he that song sing can  
 b. (ik denk dat) hij dat lied zingen kan/kan zingen  
 c. \*(ik tink dat) er dat liet kin sjonge

For an impression of what more complex verb clusters look like, consider (17):

- (17) a. ik tink dat Gurbe him de hynders wol fuorjen sjen sil (Frisian)  
 I think that Gurbe him the horses truly feed see will  
 b. \*ik denk dat Gurbe hem de paarden wel voeren zien zal/zal zien (Dutch)  
 c. \*ik tink dat Gurbe him de hynders wol sil sjen fuorjen (Frisian)  
 d. ik denk dat Gurbe hem de paarden wel zal zien voeren (Dutch)

The question is whether such a difference be encoded using mechanisms in accordance with the 1-step down hypothesis. Below I will show that it can, presenting sample derivations for both Frisian and Dutch. In order to avoid unwieldy structures I will be using pronominal objects, limit myself to two verbs and also stay below matrix inflection. The derivations will at times involved functional material (F1, F2, etc.) that I will not extensively motivate. Note, that if the approach is right, it is a deep property of the computational system that dependencies of this type can only be encoded using such a mechanism. My claim is that this is at least an interesting possibility worth pursuing. So, the Frisian structure to be derived is (18):

- (18) (ik kin) Pier dat (liet) sjongen hearre  
 I can Peter this sing hear  
 I can hear Peter sing this (song)

Again, note that for the benefit of the reader some of the silent material is written in italics. The way the contrast is handled implies that the crucial factor differentiating Dutch and Frisian infinitives is that Frisian infinitives are nominal, whereas Dutch infinitives are not. For more extensive discussion of this point see Reuland (1981, 1982) and (1990).

### *Frisian*

[<sub>VP</sub> sjonge [<sub>DP</sub> dat]] → merge K

K [<sub>VP</sub> sjonge [<sub>DP</sub> dat]] → move DP

[<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub> sjonge [<sub>DP</sub> dat]]] → merge F1 (leaving open what F1 is)

F1 [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub> sjonge [<sub>DP</sub> dat]]] → move VP

[<sub>F1P</sub> [<sub>VP</sub> sjonge [<sub>DP</sub> dat]] F1 [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub> sjonge [<sub>DP</sub> dat]]]] → merge F2  
 (inflection determining predication type of *sjonge*)

F2 [<sub>F1P</sub> [<sub>VP</sub> sjonge [<sub>DP</sub> dat]] F1 [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]]] → move KP

[<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> sjonge [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]] → merge Tr(ansitivizer)

Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> sjonge [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]] → merge Pier

[<sub>TrP</sub> Pier Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> sjonge [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]] → merge hearre

hearre [<sub>TrP</sub> Pier Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> sjonge [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]] → move F2P

Assume that in Frisian F2P is a nominal –type inflection reflected by the –N on *sjongen*

The following question comes up at this point: How does the timing work? Is it obligatory to choose between merge or move as soon as (5/6) allows move, or is it possible to forego a turn? For instance first inserting a K, assuming that V can only attract an argument via a K? Note that the first line of this derivation is deceptively simple since the pronoun has no visible internal structure. As soon as the complement has internal structure it could be that the verb has to attract a subpart.

For simplicity's sake I assume here that the verb itself can attract the 1-step down category in its complement. The assumption is that the element to be attracted is argumental. Note that according to Kayne's principle (13) the predication headed by *sjonge* must be nominal in order to serve as an argument of *hearre* (in line with Reuland 1981, 1982, 1990).

$[_{VP} [_{F2P} [_{KP} [_{DP} \text{dat}] K [_{VP}]]] F2 [_{F1P} [_{VP} \text{sjongeN} [_{DP} \text{dat}]]] F1 [_{KP}]] \text{hearre} [_{TrP} \text{Pier Tr} [_{F2P} ]]] \rightarrow \text{merge } F3$

$F3 [_{VP} [_{F2P} [_{KP} [_{DP} \text{dat}] K [_{VP}]]] F2 [_{F1P} [_{VP} \text{sjongeN} [_{DP} \text{dat}]]] F1 [_{KP}]] \text{hearre} [_{TrP} \text{Pier Tr} [_{F2P} ]]] \rightarrow \text{move } TrP$

$[_{F3P} [_{TrP} \text{Pier Tr} [_{F2P} ]]] F3 [_{VP} [_{F2P} [_{KP} [_{DP} \text{dat}] K [_{VP}]]] F2 [_{F1P} [_{VP} \text{sjongeN} [_{DP} \text{dat}]]] F1 [_{KP}]] \text{hearre} [_{TrP}]]$

Here, the derivation terminates with *Pier dat (liet) sjongen hearre* which corresponds to the phrase embedded under *ik kin* in (18).

Consider now deriving (19) in Dutch:

- (19) (ik kan) Piet dat (liet) horen zingen  
 I can Peter this hear sing  
 I can hear Peter sing this (song)

*Dutch*

$[_{VP} \text{zingen} [_{DP} \text{dat}]] \rightarrow \text{merge } K$

$K [_{VP} \text{zingen} [_{DP} \text{dat}]] \rightarrow \text{move } DP$

$[_{KP} [_{DP} \text{dat}] K [_{VP} \text{zingen} [_{DP} \text{dat}]]] \rightarrow \text{merge } F1$

$F1 [_{KP} [_{DP} \text{dat}] K [_{VP} \text{zingen} [_{DP} \text{dat}]]] \rightarrow \text{move } VP$

$[_{F1P} [_{VP} \text{zingen} [_{DP} \text{dat}]]] F1 [_{KP} [_{DP} \text{dat}] K [_{VP} \text{zingen} [_{DP} \text{dat}]]] \rightarrow \text{merge } F2$

$F2 [_{F1P} [_{VP} \text{zingen} [_{DP} \text{dat}]]] F1 [_{KP} [_{DP} \text{dat}] K [_{VP}]] \rightarrow \text{move } KP$

$[_{F2P} [_{KP} [_{DP} \text{dat}] K [_{VP}]]] F2 [_{F1P} [_{VP} \text{zingen} [_{DP} \text{dat}]]] F1 [_{KP}]] \rightarrow \text{merge } Tr$

$Tr [_{F2P} [_{KP} [_{DP} \text{dat}] K [_{VP}]]] F2 [_{F1P} [_{VP} \text{zingen} [_{DP} \text{dat}]]] F1 [_{KP}]] \rightarrow \text{merge } \text{Piet}$

$[_{TrP} \text{Piet Tr} [_{F2P} [_{KP} [_{DP} \text{dat}] K [_{VP}]]] F2 [_{F1P} [_{VP} \text{zingen} [_{DP} \text{dat}]]] F1 [_{KP}]]] \rightarrow \text{merge } \text{horen}$

Assume that in Dutch F2P is not a nominal-type inflection  $\rightarrow$  *horen* will not attract F2P as an argument, but only its specifier KP. Note that this a departure from the assumption that the attraction is entirely and blindly triggered by structure. Here the nature of the constituent that has the turn is relevant, and if unsuitable the next available alternative is selected.

$\text{horen} [_{TrP} \text{Piet Tr} [_{F2P} [_{KP} [_{DP} \text{dat}] K [_{VP}]]] F2 [_{F1P} [_{VP} \text{zingen} [_{DP} \text{dat}]]] F1 [_{KP}]]] \rightarrow \text{move } KP$

[<sub>VP</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] horen [<sub>TrP</sub> Piet Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> zingen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]] → merge  
F3

F3 [<sub>VP</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] horen [<sub>TrP</sub> Piet Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> zingen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]]

Again the nature of the constituent that 'has the turn' is invoked. TrP cannot be attracted since it did not inherit nominal features; therefore the next available alternative is selected, and consequently its nominal specifier moves:

[<sub>F3P</sub> Piet F3 [<sub>VP</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] horen [<sub>TrP</sub> Piet Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> zingen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]]  
etc.

Thus the required order in Dutch is derived. The contrast between Dutch and Frisian is thus derived quite mechanically. It is easily seen that in the case of structures with more verbs, nothing intrinsic in the derivation changes. However, given the nature of the steps, more complex structures will require extensive derivations that may prove quite challenging for one's concentration to execute, but properly considered involve little more than 'tedious' repetition of steps.

### 3.2. *te*-infinitives in Frisian and Dutch

As extensively discussed in De Haan (1987), unlike bare infinitives, *te*-infinitives in Frisian appear to the right of matrix verb (this phenomenon is known as 'Overdiep's law'). In the following examples the

- (20) a. dat er dat boek skynt te lêzen (Frisian)  
that he that book seems to read  
b. \*dat er dat boek te lêzen skynt
- (21) a. dat hij dat boek schijnt te lezen (Dutch)  
that he that book seems to read  
b. \*dat hij dat boek te lezen schijnt
- (22) a. dat er in brief siet te skriuwen (Frisian)  
that he a letter sat to write (that he was sitting writing a letter)  
b. \*dat er in brief te skriuwen siet  
c. dat hij een brief zat te schrijven (Dutch)
- (23) a. dat er dat boek foar hopet te lêzen (Frisian)  
that he that book for hopes to read (read aloud)  
b. \*dat er dat boek foar te lêzen hopet  
c. dat hij dat boek voor hoopt te lezen (Dutch)

Frisian in contrast to Dutch exhibits an exception:

- (24) a. dat hij een boek schijnt te zitten (te) lezen (Dutch)  
that he a book seems to sit to read  
b. \*dat er in boek skynt te sitten te lêzen (Frisian)  
c. \* dat hij een boek te lezen schijnt te zitten (Dutch)  
d. dat er in boek te lêzen skynt te sitten (Frisian)

From an anti-symmetric perspective the order of (25) is basic in that it represents the order of Merge:

- (25) a. (\*)dat er skynt te sitten te lêzen in boek (Frisian)  
 b. (\*)dat hij schijnt te zitten te lezen een boek (Dutch)  
 that he seems to sit to read a book

What has to be accounted for is why (25) cannot remain as is, modulo object movement:

- (26) a. (\*)dat er skynt te sitten in boek te lêzen (Frisian)  
 b. (\*)dat hij schijnt te zitten een boek te lezen (Dutch)  
 that he seems to sit a book to read

I.e. why does *in boek te lêzen* have to be moved to the left and why cannot other possible orders be derived? Note that both *skyne* and *sitte* are subject raising verbs and fail to license a complement containing argumental material.

- (27) a. \*dat er skynt in boek te lêzen (Frisian)  
 b. dat er in boek skynt te lêzen  
 c. \*dat er sit in boek te lêzen  
 d. dat er in boek sit te lêzen

One might posit that the DP in (24d) has to move and the verb *te lêzen* is Pied Piped along. However, even without going into detail, this seems to go counter to the spirit of the 1-step down hypothesis. Just as in the case of bare infinitives one would rather say that the highest suitable constituent is attracted. Thus, one would expect that *in boek te lêzen* being nominal causes it to be attracted in Frisian. If so, the Dutch counterpart, lacking that property, is not attracted; instead the object is. So, we may assume that *sitte* requires its complement clause to be nominal, this can be effected by a particular choice of functional projection. If this requirement is met, *sitte* itself cannot attract this clause, since it cannot attract its own complement. After merging *skyne* the latter can. This informal procedure can in principle be mechanically executed. Nevertheless, the issues are rather complex due to an independent problem with *te*. Providing such an execution would lead us beyond the scope of this contribution. To give an impression of the issues involved a partial derivation is presented up to the merger of *sitte*.

[<sub>VP</sub> lêzen [<sub>DP</sub> dat]] → merge K

K [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] → move DP

[<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub> lêzen [<sub>DP</sub> dat]]] → merge F1 (leaving open what F1 is)

F1 [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub> lêzen [<sub>DP</sub> dat]]] → move VP

[<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub> lêzen [<sub>DP</sub> dat]]]] → merge F2  
 (inflection determining predication type of *lêzen*)

F2 [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]]] → move KP

[<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]] → merge Tr(antisivizer)

Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]] → merge Pro

[<sub>TP</sub> Pro Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]]

option i) → merge *te*

*te* [<sub>TP</sub> Pro Tr [<sub>F2P</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] F2 [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]]

This option instantiates a late merger of *te*, as a parallel to Kayne's proposal that *to* in English is a type of complementizer. The task is to find a purely mechanical procedure that can do the job if *te* is merged this late. However, by (5/6) *te* will at this point attract F2P, thus preventing *te* and the verb to come together. It seems to me that this is final, in the sense that subsequent movements in the spirit of the theory will continue to fail. As a consequence, this option will have to be discarded.

option ii) → merge *te* as F2

This option merges *te* earlier in the derivation, indeed as a realization of verbal inflection

*te* [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]]] → move KP

[<sub>TP</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] *te* [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]] → merge Tr(antivizer)

Tr [<sub>TP</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] *te* [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]] → merge Pro

[<sub>TP</sub> Pro Tr [<sub>TP</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] *te* [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]] → merge *sitte*

*sitte* [<sub>TP</sub> Pro Tr [<sub>TP</sub> [<sub>KP</sub> [<sub>DP</sub> dat] K [<sub>VP</sub>]] *te* [<sub>F1P</sub> [<sub>VP</sub> lêzen [<sub>DP</sub> dat]] F1 [<sub>KP</sub>]]]], etc.

I leave the continuation of the derivation and determining the particular stipulations needed as an exercise to the reader. It is easily seen that the following more complex example poses even more of a challenge:

'Base' order:

(28) %dat er miende *te* kinnen my *ferbiede* dat boek *te* lêzen (*dat boek*)  
that he thought to can me forbid that book to read  
that he thought that he would be able to forbid me to read that book

OK:

- (29) a. dat er miende my *ferbiede* *te* kinnen dat boek *te* lêzen  
that he thought me forbid to can that book to read  
b. dat er my miende *ferbiede* *te* kinnen dat boek *te* lêzen  
c. dat er my dat boek *te* lêzen *ferbiede* miende *te* kinnen ---  
d. dat er my dat boek *ferbiede* miende *te* kinnen *te* lêzen

Descriptively one would say that *kinnen* takes a complement that cannot license *my*, and that itself must be licensed; thus, *my* scrambles out followed by *ferbiede*, or *my ferbiede* moves out as a whole. The problem is why *dat boek te lezen* stays behind, and how it in fact can stay behind. This could follow from a Koopman & Szabolcsi-type account in which first the rightmost CP moves up (but not very high) to be licensed, allowing the remnant to be moving further.

(30) should be impossible to derive; it will be excluded if *ferbiede te kinnen* is never a constituent and sole content of a remnant:

- (30) \*dat er my dat boek ferbiede te kinnen miende te lêzen  
that he me that book forbid to can thought to read

All in all, the anti-symmetric approach provides an interesting perspective on verb orders in Frisian and Dutch. The challenge is to find out how far blind configuration based implementations of the type proposed can lead us, and where substantive language particular stipulations have to be brought in.

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