Chapter 2

V to I movement

1. Introduction

It is striking that languages with a rich agreement paradigm move the inflected verb to a VP-external position in overt syntax. Since there is no clear exception to this generalization among the Indo-European languages, I take it as something in need of an explanation. The purpose of this chapter is to do just that. It is argued that this verb movement, generally known as V to I, takes place in languages where agreement affixes have argumental status. What triggers the movement operation is the need for the agreement affix to be interpreted: It must occupy a position where it can be associated with the external theta role. Assuming that this role is assigned by VP, as argued by Williams (1980 and subsequent work) and assuming that the verb enters the derivation fully inflected, the agreement affix will fail to be interpreted if the verb stays in situ.

Although the above-mentioned generalization is robust, there are a few examples of languages showing V to I although they have poor inflection: There is no two-way implication. Although the existence of these languages does nothing to make the one-way implication and the theory accounting for it less powerful, they raise the additional question of why we only find counterexamples in one direction. Before I turn to this issue in section 3, I will first outline how V to I movement can be related to predication theory (section 2). After that, I will provide a concrete definition of what counts as a rich agreement paradigm (section 3). Section 3.2 will then discuss to what extent the proposal makes the correct empirical predictions for the VO languages, a class where the presence or absence of V to I movement is relatively easy to establish. Although it is hard to find direct evidence for the presence or absence of this verb movement in OV languages, closer scrutiny reveals that the proposed analysis can be
extended to account for Dutch and German in a meaningful way. It will appear that these languages pattern in line with the generalization mentioned above, as shown in section 4.

2. A trigger for V to I movement

In some languages, the finite verb precedes VP-adverbs, negation and floating quantifiers, whereas this is not the case in others (cf. Emonds 1976; Pollock 1989). This contrast is illustrated in (1).

(1) a. Subject V_{finite} ADV/NEG/FQ
    b. Subject ADV/NEG/FQ V_{finite}

The contrast has been taken to reflect (absence of) overt verb movement. Under the assumption that the relevant adverbs mark the left edge of VP, the verb must have moved to a position external to VP in (1a), as indicated in (2):

(2)

As said, whether a language has the operation in (2) or not, leading to the contrast between (1a) and (1b), appears to be far from arbitrary.1 There has been an impressive line of research indicating a correlation between overt verb movement and inflection: Languages that have a rich subject agreement paradigm have the order in (1a), whereas languages without rich agreement tend to leave the verb in situ (Kosmeijer 1986; Pollock 1989; Platzack & Holmberg 1989; Holmberg & Platzack 1991, 1995; Roberts 1993; Rohrbacher 1994, Koeneman 1997, among others).2 The existence of a correlation between rich agreement and verb movement is corroborated by synchronic as well as diachronic observations. Let us discuss each in turn.

First, it can be observed that the contrast in (1) is manifested in closely related dialects that differ in the richness of agreement. Standard Swedish, for instance, has a

---

1 Of course, I abstract away from verb second here: By looking at contexts where verb second does not take place, some languages still move the verb whereas in other languages the verb remains in situ.

2 I do not know to what extent the correlation has been established for languages other than the European. See DeGraff (1997), however, for a similar claim about Creole language.
poor agreement paradigm: There is only one affix in the present tense paradigm (cf. 3a), suggesting that we are dealing with a tense affix rather than an agreement affix. This is in contrast to a dialect of Swedish spoken in Ålvdalen, which has the paradigm in (3b):³

(3)  

<table>
<thead>
<tr>
<th></th>
<th>Standard Swedish</th>
<th>Ålvdalen Swedish</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>inf. bita</td>
<td>inf. kasta</td>
</tr>
<tr>
<td>SG</td>
<td>biter</td>
<td>biter</td>
</tr>
<tr>
<td>PL</td>
<td>biter</td>
<td>biter</td>
</tr>
<tr>
<td>1st</td>
<td>kastar</td>
<td>kastum</td>
</tr>
<tr>
<td>2nd</td>
<td>kastar</td>
<td>kaster</td>
</tr>
<tr>
<td>3rd</td>
<td>kastar</td>
<td>kasta</td>
</tr>
</tbody>
</table>

It can be observed that in standard Swedish finite verbs follow VP-adverbs (cf. 4a), in contrast to Ålvdalen Swedish (cf. 4b). In order to rule out a possible effect of verb second, we must look at embedded clauses where this phenomenon does not take place.⁴ In the examples that are supposed to indicate the presence or absence of V to I movement, I will put the finite verb in italics and boldface the adverb.

(4)  

a. att Johan inte köpte boken  
   Standard Swedish  
   that Johan not bought book-the

b. ...ba fo dye at ur uildum int fy om  
   Ålvdalen Swedish  
   just because that we would not follow him

The other Mainland Scandinavian languages, Modern Danish and Norwegian, are like Swedish in that they lack any distinctions in the present Tense paradigm:

(5)  

<table>
<thead>
<tr>
<th></th>
<th>Danish</th>
<th>Norwegian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>inf. kaste</td>
<td>inf. elsker</td>
</tr>
<tr>
<td>SG</td>
<td>kaster</td>
<td>elsker</td>
</tr>
<tr>
<td>PL</td>
<td>kaster</td>
<td>elsker</td>
</tr>
<tr>
<td>1st</td>
<td>kaster</td>
<td>1st elsker</td>
</tr>
<tr>
<td>2nd</td>
<td>kaster</td>
<td>2nd elsker</td>
</tr>
<tr>
<td>3rd</td>
<td>kaster</td>
<td>3rd elsker</td>
</tr>
</tbody>
</table>

³ The data that follow are mostly from Platzack & Holmberg (1989, 1995), Rohrbacher (1994) and Vikner (1995).

⁴ More correctly, we must look at clauses embedded under predicates like 'regret', 'to be a surprise', 'disagree', etc. Recall that these so-called non-bridge verb disallow verb second in their complement, in contrast to bridge verbs like 'know', 'believe' or 'say', which optionally allow it. In this respect Swedish differs from languages like Yiddish and Icelandic, where embedded verb second is much less restricted. See for more discussion de Haan & Weerman 1986, Iatridou & Kroch 1992, Vikner 1990, 1995 and others.
As expected, both languages leave the verb in situ in non-V2 contexts:

(6) a. at Peter ofte havde læst den
   *that Peter often had read it*

   b. Vi tenkte ikke at han aldri ville ha penger
      *we thought not that he never would have money*

Unfortunately, it is not the mere absence of any distinctions that is responsible for the fact that the finite verb remains in situ in these languages. Looking at the paradigm of Hallingdalen Norwegian, we find two distinct forms, one for the singular and one for the plural.

(7) **Halligdalen Norwegian**

<table>
<thead>
<tr>
<th></th>
<th>inf.</th>
<th>kastæ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>kasta</td>
<td>kastæ</td>
</tr>
<tr>
<td>2nd</td>
<td>kasta</td>
<td>kastæ</td>
</tr>
<tr>
<td>3rd</td>
<td>kasta</td>
<td>kastæ</td>
</tr>
</tbody>
</table>

Nevertheless, the finite verb remains in situ, as can be concluded from the example given in (8):

(8) Noko gamlæ menn som ikki haddæ vore mæ ve kyrkja
    *some old men who not had been along at church*

Hence, despite the presence of some paradigm-internal contrast Hallingdalen Norwegian must still be classified as poor, on a par with Standard Norwegian, Swedish and Danish.

A second observation corroborating the correlation is that languages with a rich agreement paradigm switch the order from (1a) to (1b) when agreement inflection erodes over time. Old Swedish, for instance, had the paradigm in (9a) until the beginning of the 16th century. After that, deflection led to the paradigm in (9b).

(9) a. **Old Swedish**

<table>
<thead>
<tr>
<th></th>
<th>inf.</th>
<th>älska</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>älskar</td>
<td>älskum</td>
</tr>
<tr>
<td>2nd</td>
<td>älskar</td>
<td>älskin</td>
</tr>
<tr>
<td>3rd</td>
<td>älskar</td>
<td>älska</td>
</tr>
</tbody>
</table>

b. **Early Modern Swedish**

<table>
<thead>
<tr>
<th></th>
<th>inf.</th>
<th>kasta</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>kasta(r)</td>
<td>kaste</td>
</tr>
<tr>
<td>2nd</td>
<td>kasta(r)</td>
<td>kaste/a</td>
</tr>
<tr>
<td>3rd</td>
<td>kasta(r)</td>
<td>kaste</td>
</tr>
</tbody>
</table>
That the loss of distinct agreement affixes caused a change in the verb movement parameter is corroborated by Platzack's (1988) claim that the first unambiguous examples of V in situ show up at the beginning of the 16th century. Before that, the finite verb preceded VP-adverbs (cf. 10).

(10) æn han svngær aegh thigianda messu Old Swedish, 1290
if he sings not silent mass

Given that the correlation is well motivated, the question is why it should exist. Pre-theoretically, the opposite would have been just as likely: Why do we not find that richly inflected languages leave the verb in situ? However, there is a way in which we can make sense of the observed correlation. Rich agreement typically expresses more person and number features. Affixes that are part of a paradigm that contains many distinct forms have referential force which affixes of a paradigm with less distinct forms lack. It is this intuition that explicitly underlies Rohrbacher's (1994) theory of V to I movement, as we will see. That the referential status of affixes can play an active syntactic role is obvious from the phenomenon of pro drop: When in a language agreement is very rich, a lexical subject can be left unrealized (Taraldsen 1978, Rizzi 1982). What I propose is that a rich subject agreement paradigm can be characterized as consisting of argumental forms: The affixes that are part of such a paradigm are syntactic arguments. Let us gloss over the details for now and assume that paradigms come in two kinds, as indicated in (11):

(11)  
<table>
<thead>
<tr>
<th>Agreement type?</th>
<th>Argumental agreement</th>
<th>Non-argumental agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>V to I movement?</td>
<td>Yes</td>
<td>no</td>
</tr>
</tbody>
</table>

Argumental affixes must be interpreted, meaning that they must be associated with a theta role. Since the paradigms we are considering here are subject agreement paradigms, the theta role with which the affixes have to be associated is the external one. This hypothesis explains why verb movement is triggered, as I will now argue.

According to predication theory, as developed in Williams (1980, etc.), there is a distinction between internal and external theta roles. Internal theta roles are assigned under m-command by V to DPs within V's maximal projection. The external theta role, on the other hand, is a property of VP rather than V: VP is inherently predicative, so that it needs to assign a theta role. Hence, there must be a VP-external DP present that can receive this role. Informally, we could say that in the structure of a transitive verb the Agent role percolates up to the level of VP and is assigned by VP to a DP within VP's m-command domain.
As outlined in detail in the appendix to chapter 1, I will assume that theta roles are properly expressed by logical formulas consisting of a lambda operator and a variable. The difference between internal and external theta roles can then be characterized as follows. Internal theta roles correspond to a lambda operator and a variable in the verb's entry:

\[(13) \lambda y \lambda z [V (y z)]\]

Assignment of internal theta roles, then, entails application of these functions to DPs within VP. If the external theta role is assigned by VP and not by V, this role must correspond to a variable in the verb's lexical entry only, as in (14):

\[(14) \lambda y \lambda z [V (x y z)]\]

Of course, a lambda operator must be introduced if \(x\) is to represent a thematic function. I will assume that this lambda operator is introduced at the level of VP, the category which is by hypothesis inherently predicative (cf. Partee 1973 and Williams 1977):

\[(15) \lambda x [VP V (x)]\]

The formula can now be applied to a VP-external DP, the element we call subject.

If VP must always assign an external theta role, the entailment is that with unaccusative predicates the internal theta role must be promoted to the level of VP in some sense, an idea that can be found in Kitagawa (1989), Chierchia (1995a), Williams (1994) and Neeleman and Weerman (1999). I will not go into the technicalities here but refer the reader to the appendix for discussion.\(^5\)

Let us now return to the issue of verb movement. The hypothesis of this thesis is that in the general case the verb moves in order to project one of its features. In

---

\(^5\) In predication theory, both DPs generated in VP's predicational domain and DP-objects moved to that position (in passive and unaccusative constructions) saturate VP's thematic function. Subjects, then, are thematically defined and not structurally: They are saturators of VP's theta-role. This entails that an expletive cannot be defined as a genuine subject. Rather, it is a place-holder of the LF subject (see chapter 4).
morphology, the affixes are attached to the verbal stem. Although morphological headedness is determined in this component, syntactic headedness is not. That is, every affix has the potential of heading a syntactic projection. Once the verb is inserted into the structure, V will project first because it must discharge its theta roles. What happens next depends on the status of agreement in a language. In languages with a rich agreement paradigm, the agreement affix Agr must be associated with the external theta-role, assigned by VP. It will be clear that in its base position, attached to the verbal stem, association with this theta-role is impossible: Agr is dominated by the category assigning the external theta role. The alternative theory on verb movement presented in chapter 1 now offers a straightforward solution. The verb moves and merges with VP again. After this merger operation, Agr projects, resulting in the structure in (16):

(16)

In this configuration, Agr is in the correct configuration to saturate VP’s external theta role. It is contained within VP’s predicational domain: The first maximal category dominating VP will be AgrP and this category also dominates Agr. Markedness that the reverse order of projection, first Agr and then V, is naturally excluded, since in that event Agr would be dominated by the category from which it must receive its theta role.

Given this analysis, V to I, or even V to Agr, has become a misnomer. There is no prefabricated position that the verb moves to. Rather, the verb moves in order to project Agr. Therefore, the crucial distinction between the two language types is that languages with rich agreement need to project AgrP in overt syntax, whereas other languages do not. In the remainder of this thesis, I will usually refer to this movement operation as V to I. It should be kept in mind that it refers to the projection of AgrP, though.

If V to I is triggered by the argumental status of inflection in a language, one might expect that it can be postponed until LF, the level at which theta theory is most naturally located. Nevertheless, in the languages discussed so far, argumental inflection leads to overt verb movement. I will assume that this is due to limitations on covert movement operations. It follows from a ban on the introduction of new projections after overt syntax, an idea

---

6 Recall my assumption that VP is inherently predicative, that is it always assigns an external theta role. In unaccusative predicates, then, the internal theta role is externalized. The consequence is that V to I movement is triggered in (in)transitive and unaccusative contexts alike, since in both cases Agr will be interpreted as the subject.
reminiscent of Chomsky’s (1995) claim that merger at LF is severely restricted. As a result, lexical insertion at LF is banned. V to I movement is analyzed here as a structure-creating operation: The verb moves after which it projects Agr. Since it is not an instance of head-adjunction, it cannot but take place in overt syntax. In this way, a limitation on covert operations causes an LF condition to have overt effects.

If Agr counts as the grammatical subject in languages with rich inflection, what, then, is the status of the DP residing in spec-AgrP, the element which is usually analyzed as a subject? I propose that it is precisely what its position suggests: It is a specifier, not only in the X-bar theoretical sense of the word, but also, one might say, with respect to its interpretation. It narrows down the interpretation of the actual grammatical subject, Agr, through specifier-head agreement. Note that this relation, indicated by italics in (17), is one between a maximal projection and a head. Therefore no dependency relation can be established by means of a syntactic chain (given the condition of chain uniformity (Chomsky 1995)). This leaves specifier-head agreement as the only option provided by the grammar.

\[(17) \quad [\text{AgrP} \text{DP} [\text{Agr} \text{V Agr}] [\text{VP} \ldots \text{tv} \ldots ]]\]

The assumption that in (17) the EPP is satisfied by the inflectional affix on the verb entails that, in principle, the DP specifier can be absent from the structure (see also Alexiadou and Anagnostopoulou 1998). This explains the phenomenon of pro drop (see, for instance, Taraldsen 1978 and Rizzi 1982). In a language like Italian, the specifier in (18) may be absent:

\[(18) \quad \begin{tikzpicture}
  \node (a) {AgrP};
  \node (b) at (0,1.5) {V甲方};
  \node (c) at (1.5,1.5) {Agr甲方};
  \node (d) at (3,1.5) {VP};
  \node (e) at (1.5,-0.5) {parl-}\node (f) at (1.75,-0.5) {speak};
  \node (g) at (1.5,1.5) {t};
  \node (h) at (2.25,0) {1\textsuperscript{st} sg.};
  \draw (a) -- (b);
  \draw (a) -- (c);
  \draw (a) -- (d);
\end{tikzpicture}\]

Not all languages with V to I allow omission of this DP, however. Apparently, in some languages agreement encodes enough phi features to be interpretable but not enough for it to stand on its own. Missing features must be supplied by a specifier. In other languages, Agr encodes enough information to require the obligatory presence of a DP. In short, the following classification of agreement inflection obtains:
Chapter 2

(19)

<table>
<thead>
<tr>
<th>Type of Agreement</th>
<th>Argumental Agreement</th>
<th>Non-Argumental Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>AgrP?</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Pro drop?</td>
<td>yes</td>
<td>no</td>
</tr>
</tbody>
</table>

What falls under the cover term “rich agreement” are two different paradigm types. If a language has a pronominal agreement type, to use Rizzi’s (1982) terminology, pro drop becomes possible. Italian, for instance, has six distinct affixes and these can appear as subjects on their own. Agreement in Icelandic should be characterized as anaphoric. Although agreement affixes act as subjects for the grammatical system, a DP-specifier must be realized. For the European languages at least, it seems to be generally correct that rich agreement leads to V to I and that in a subset of these languages pro drop exists. Crucially, languages with Italian-style pro drop but without V to I are ruled out. Obviously, in order to make precise predictions about V to I movement, more content has to be given to the notion rich agreement, here referred to as argumental agreement. This will be the topic of the next section.

The analysis is intended to capture the Indo-European situation and does not straightforwardly account for the situation in Chinese and Japanese. It is well known that subjects can remain absent in these languages, although they lack Agr altogether. In this light, Jaeggli & Safir (1989) propose that null subjects are allowed in languages that have a morphologically uniform paradigm: Either all verbal forms are overtly inflected for Agr or none of them is. In the in-between case, null subjects are prohibited. An additional identification requirement is then needed to capture the difference between expletive and argumental subject drop (German vs. Italian). An interesting way of understanding this generalization is offered by Speas (1994), who relates these facts to a licensing condition on AgrP. In languages that have agreement, AgrP must be generated. In that case, either the head or specifier must be filled. The first option characterizes Italian, the latter a language like English. If the category Agr is absent altogether, then so is AgrP. Therefore, no DP with the purpose of filling a specifier need be present in Chinese or Japanese. A general problem for the generalization is the existence of the Mainland Scandinavian languages. These uniformly lack Agr and are wrongly predicted to behave like Japanese and Chinese. Jaeggli & Safir are therefore forced to adapt their generalization (their footnote 17, p. 40): Null subjects are allowed in languages with a uniform paradigm but not all languages with such a paradigm allow null subjects. I think this seriously reduces the predictive power of the original generalization. Another solution is offered by Speas. She observes that Swedish still has agreement in other components of the grammar, unlike Japanese, and therefore suggests that it is still an ‘agreement type’ language. This suffices for generation of AgrP in Swedish, which consequently does not allow null subjects. The difference between Speas’ proposal and mine is that I do not assume that Swedish generates AgrP. I believe that Speas’ intuition, if correct, can be expressed without postulating an AgrP for Swedish. One could claim that, since this language has abstract agreement, there simply must be some element that the verb can agree with. Since Japanese lacks agreement, such an element can remain absent. In Italian and Icelandic, Agr is itself the subject and the presence of DP is determined by the requirement that Agr be fully specified at LF. I conclude that the existence of Japanese and Chinese does not necessarily clash with the assumptions made in the main text. Moreover, it is not obvious at this point that Jaeggli and Safir’s generalization is truly meaningful. It may turn out that Indo-European pro drop might simply be unrelated to the phenomenon taking place in Chinese and Japanese.

7 The analysis is intended to capture the Indo-European situation and does not straightforwardly account for the situation in Chinese and Japanese. It is well known that subjects can remain absent in these languages, although they lack Agr altogether. In this light, Jaeggli & Safir (1989) propose that null subjects are allowed in languages that have a morphologically uniform paradigm: Either all verbal forms are overtly inflected for Agr or none of them is. In the in-between case, null subjects are prohibited. An additional identification requirement is then needed to capture the difference between expletive and argumental subject drop (German vs. Italian). An interesting way of understanding this generalization is offered by Speas (1994), who relates these facts to a licensing condition on AgrP. In languages that have agreement, AgrP must be generated. In that case, either the head or specifier must be filled. The first option characterizes Italian, the latter a language like English. If the category Agr is absent altogether, then so is AgrP. Therefore, no DP with the purpose of filling a specifier need be present in Chinese or Japanese. A general problem for the generalization is the existence of the Mainland Scandinavian languages. These uniformly lack Agr and are wrongly predicted to behave like Japanese and Chinese. Jaeggli & Safir are therefore forced to adapt their generalization (their footnote 17, p. 40): Null subjects are allowed in languages with a uniform paradigm but not all languages with such a paradigm allow null subjects. I think this seriously reduces the predictive power of the original generalization. Another solution is offered by Speas. She observes that Swedish still has agreement in other components of the grammar, unlike Japanese, and therefore suggests that it is still an ‘agreement type’ language. This suffices for generation of AgrP in Swedish, which consequently does not allow null subjects. The difference between Speas’ proposal and mine is that I do not assume that Swedish generates AgrP. I believe that Speas’ intuition, if correct, can be expressed without postulating an AgrP for Swedish. One could claim that, since this language has abstract agreement, there simply must be some element that the verb can agree with. Since Japanese lacks agreement, such an element can remain absent. In Italian and Icelandic, Agr is itself the subject and the presence of DP is determined by the requirement that Agr be fully specified at LF. I conclude that the existence of Japanese and Chinese does not necessarily clash with the assumptions made in the main text. Moreover, it is not obvious at this point that Jaeggli and Safir’s generalization is truly meaningful. It may turn out that Indo-European pro drop might simply be unrelated to the phenomenon taking place in Chinese and Japanese.
3. Defining 'rich agreement'

As it is formulated here, the V to I parameter, or the 'AgrP parameter', is set on the basis of person and number distinctions. Hence, if the task is to formulate precise definitions, we should look at the agreement paradigms of languages with V to I and establish in what respect these paradigms are qualitatively different from paradigms of languages without V to I. I will only consider present Tense paradigms. Intuitively, it is the default paradigm to which the child has easiest access. Second, although the past Tense paradigm of a language can show less person and number distinctions than the present Tense paradigm, the opposite is not found in the languages under discussion.

Empirically the most successful generalization based on present Tense agreement paradigms is the one proposed by Rohrbacher (1994), given in (20):

\[(20) \quad \text{The paradigm verb raising correlate II} \]
\[
\text{A language has V to I raising if and only if in at least one number of at least one tense of the regular verbs, the person features 1}\text{st} \text{and 2}\text{nd} \text{are both distinctively marked.}
\]

First and second person are distinctively marked in the singular or plural if they are different from (i) one another (ii) the third person of the same number and (iii) the infinitive. Although it sounds rather complex, (20) at least makes an impressive number of correct predictions. In fact, the empirical domain it covers is optimal: Both loosening or tightening the definition will leave a few more paradigms unaccounted for. Observe that it makes the correct predictions for the data we have seen so far. In both Old and Ålvdalen Swedish, first and second person are distinctively marked in the plural. Hence, verb movement is correctly predicted to take place in these languages. This is in contrast to (Early) Modern Swedish and Hallingdalen Norwegian, where these distinctive markings are not realized.

Rohrbacher argues that V to I parametrization can be derived from (20) in the following way. He argues that in languages that meet (20) agreement is referential. The consequence of this is that agreement affixes are listed in the lexicon. This is in contrast to poor agreement, which, according to Rohrbacher, is nothing more than a PF spell-out of abstract features of V. A lexically listed agreement affix can be taken from the lexicon and inserted in INFL. Lasnik’s stray affix filter will then trigger verb movement to INFL.

The attractive property of Rohrbacher’s proposal is that it attempts at an explanation of why rich agreement triggers verb movement: It goes beyond a technical description of the observed correlation. Nevertheless I have a few remarks. First, Neellemann (1996) notes that the theory involves a complication of morphological theory. Some theorists, like Lieber (1981) take morphology to be affix-based: Words are built
up from affixes. Others like Beard (1991) argue for a process-based approach: Affixes are spell-outs of morphological properties. Anderson (1982) argues that both exist and that they underlie the distinction between derivational and inflectional morphology: The former is affix-based, the latter process-based. If Rohrbacher's theory is correct, then both affix-based and process-based morphology exist, but, unlike Anderson, he assumes that both play a role in inflectional morphology. Even if the goal of a unified morphology proves impossible, Rohrbacher's theory further removes us from this ideal, since it assumes a further split. I do not believe that such a distinction has to be made in order to account for V to I parametrization.

Second, it remains rather unclear what 'referential' means. It is not straightforward why distinctive marking in either the singular or the plural would suffice to characterize all elements in the paradigm as referential. In order to this point, compare the paradigm of Ålvudalen Swedish (cf. 3b) with that of Hallingdal Norwegian (cf. 7), repeated here as (21a,b):

(21)  

<table>
<thead>
<tr>
<th></th>
<th>Ålvudalen Swedishb.</th>
<th>Hallingdal Norwegian</th>
</tr>
</thead>
<tbody>
<tr>
<td>inf.</td>
<td>kasta</td>
<td>inf. kastæ</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>kastar</td>
<td>kastum</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>kastar</td>
<td>kaster</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>kastar</td>
<td>kasta</td>
</tr>
</tbody>
</table>

Although Agr in (21a) is qualified as referential, in contrast to (21b), both paradigms share one property. Hallingdal Norwegian and Ålvudalen Swedish both have one affix expressing singularity. Strictly speaking, then, -ar and -a both refer to a singular entity without distinguishing between persons: In isolation, then, they have exactly the same referential quality. Nevertheless, -ar should trigger verb movement when attached to the verb, in contrast to -a. Of course, the implicit assumption here is that the status of Agr as either referential or phonological is determined on the basis of a paradigm as a whole. If so, 'referential' does not seem to be the appropriate term. For this reason, I adopt the more neutral term 'argumental'. Nevertheless, one would like to see precisely why the paradigm as a whole is relevant, i.e. why the distinctions in the plural part of the paradigm in (21a) should suffice to give -ar a different characterization from -a. In the next section I will argue that the process of paradigm construction by the child itself determines the status of Agr as either argumental or not. In this, I will treat agreement paradigms on a par with pronominal paradigms: Both consist of argumental forms. The definition of 'rich' that will fall out from this process is one that comes close to (20) in terms of empirical coverage.
3.1 Inflectional features and underspecification

Pinker (1984) argues that inflectional features must be acquired on the basis of morphological contrasts. On the basis of a set of features that are perhaps universally given, the child will pick out those that correspond to meaningful contrasts in the input. Two distinct forms trigger the postulation of a binary feature that allows a description of their distinction: The same feature is not postulated if no contrast triggers it. Hence, the more distinct forms a child encounters, the more features are needed for the description of a particular paradigm. This assumption has two important consequences. First, dependent on the number of overt contrasts the size of agreement paradigms will differ cross-linguistically: Italian will have a more richly structured paradigm representation than, say, Swedish. Second, there is an immediate restriction on the occurrence of non-overt affixes. It can no longer be assumed that Swedish has a distinct null affix in every slot that is occupied by an overt affix in Italian: Restrictive behaviour of the child building a paradigm representation will forbid that. I will interpret the term null affix as the form that not overtly marks the stem and that is ‘meaningful’ in the sense that it corresponds to a natural class. Take for instance the Dutch paradigm:

(22) \[
\begin{array}{c|c|c}
  & \text{inf. lopen} & \\
  \text{SG} & \text{PL} & \\
 1^{st} & \text{loop} & \text{lopen} \\
 2^{nd} & \text{loopt} & \text{lopen} \\
 3^{rd} & \text{loopt} & \text{lopen} \\
\end{array}
\]

One can assume that Dutch has a null affix because the contexts in which the verbal stem is inserted corresponds to a natural class, namely first person singular contexts.

Given these assumptions, a very natural format for the description of a paradigm is that of a binary-branching feature hierarchy, where every terminal node corresponds with a distinct form and every distinct form corresponds to exactly one terminal node. Since the feature ‘person’ is not binary, it is replaced here by [\text{sp(peaker)}] and [\text{ad(dressee)}]. The representation of a paradigm with six distinct forms, such as Italian (cf. 23a), looks as in (23b):\(^8\)

---

\(^8\) The feature hierarchies assumed here were partly inspired by Johan Kerstens’ (1993) work, which I have adapted so as to fit the present proposal.
First person singular and plural (-o and -iamo respectively) lack a value for [α addressee]. This is in fact the correct result. As far as I know, it is true for all languages under consideration that the first person plural is ambiguous as to whether it includes the addressee as part of the referent. This ambiguity is captured here by a valueless feature [α addressee]. Other language may morphologically encode the inclusive-exclusive distinction morphologically (for instance Arabic), which means that they have an additional branching in the paradigm representation. The first person singular is also [α addressee] and can therefore in principle have two readings. However, since it is [+singular], a reading in which the addressee is included is filtered out (cf. Noyer 1992).

Earlier I suggested that Italian agreement affixes are interpreted as arguments, subjects to be precise. Therefore, the theory predicts that these affixes trigger movement of the verb, the category to which they are attached. This prediction is correct: Recall from the introduction that finite verbs were unable to follow floating quantifiers and adverbs like completamente, in contrast to participles (Belletti 1990). The data are repeated here:

(24) a. (In quelle circostanze) Gianni ha completamente sbagliato
    in those circumstances Gianni has completely mistaken
b. Quel dottore ha risolto completamente i tuoi problemi
    that doctor has solved completely your problems
c. Gli invitati hanno (tutti) salutato (tutti) Maria
    the guests have all greeted all Maria
The contrast between (24) and (25) is expected if finite verbs must obligatorily move to a VP-external position, thereby crossing VP-adjoined elements.

It is not the case, however, that V to I movement is only triggered in languages with a paradigm consisting of six distinct forms, as we have seen. Apparently, if fewer affixes together form a paradigm, they can still be argumental. This in itself is hardly surprising considering that the same is true for pronominal paradigms. To give an example, the paradigm of English pronouns contains one syncretic form, namely you, which refers to second person in both the singular and the plural. Despite the fact that it does not express number, it is argumental: It can carry a theta role. Although paradigms with less than six forms can apparently still be characterized as argumental, there must clearly be a lower bound: Languages can have some agreement but no V to I movement (recall the paradigms of Early Modern Swedish or Hallingdalen Norwegian). So, what is the crucial difference between poor and rich? I suggest that what matters is that the top node of the paradigm representation, which is what characterizes agreement or pronouns in a particular language, must be a bundle of three features. Take a look at the representation for the English pronoun system:

Although you does not express number, it is a member of a paradigm that does include this feature. Since the top node by definition dominates its members, the number

\[\alpha_{sp} > \alpha_{sg} > \alpha_{ad}\]
feature is a part of every form in the paradigm. Let us formalize this by adopting the following definition:

\[(27)\]  
**Argumental paradigm**  
If all forms together make a hierarchical representation of which the top node is characterized as (minimally) including the features \([\alpha_{\text{speaker}}]\), \([\alpha_{\text{addressee}}]\) and \([\alpha_{\text{singular}}]\), all forms of this paradigm are argumental.

The definition in (27) can be met even if the paradigm contains forms that lack a feature value. Forms only fails to be argumental, if they are a member of a paradigm that lacks one of the three features mentioned in (27) altogether. Hence, one could say that the pronoun *you* is *underspecified* for the feature \([\alpha_{\text{singular}}]\) but not *unspecified* for it. Number is part of the definition of ‘pronoun’ in English: It is postulated on the basis of for instance the contrast between *I* and *we* and hence part of the top node. Therefore, the feature is underlyingly a part of *you* too.

In short, if three features are required for the description of a paradigm the forms that make up this paradigm count as argumental and must be interpreted. When these forms are subject agreement affixes attached to the verb, verb movement is triggered. Under the reasonable assumption that any morphological contrast can only lead to the postulation of one feature and not more, at least three relevant contrasts must be present. Since the number of features postulated hinges on the number of morphological contrasts, we naturally obtain a correlation between richness of inflection and verb movement, the desired result.

We now have to show that the definition in (27) indeed not only characterizes the English pronominal paradigm but also the agreement paradigms of languages with V to I movement. It will be straightforward that a language with six distinct agreement affixes, like Italian, is predicted to have V to I movement, since all affixes are fully specified for the three relevant features. Therefore, the data in (24-25) are captured. Likewise, Modern Swedish and Danish are correctly predicted not to have verb movement in non-V2 contexts: Since there is only one form in the present Tense paradigm, there are no paradigm-internal contrasts at all. Hence, none of the three relevant features will be postulated and all affixes fail to meet the definition in (27).

Paradigms with less forms than Italian but more than Swedish and Danish require some more discussion, since some but not all of these intermediate cases have an inflection-related verb movement. As I will show in the next section, the definition of argumental paradigm in (27) is able to draw the line correctly and capture a similar empirical domain as Rohrbacher's generalization.
3.2 Empirical confirmation: The VO languages

Let us first discuss the paradigms we have seen so far. Both Old Swedish and Ålvdalen Swedish have three distinctions in the plural, and all three differ from the one form used in the singular. Hence, both languages have the paradigm structure given in (28).

(28)  
\[
\begin{align*}
\alpha_{sp}, \alpha_{ad}, \alpha_{sg} & \quad \alpha_{sp}, \alpha_{ad}, +sg \\
& \quad +sp, \alpha_{ad}, -sg \\
& \quad -sp, \alpha_{ad}, -sg \\
& \quad -sp, +ad, -sg \\
& \quad -sp, -ad, -sg \\
\end{align*}
\]

As can be established, agreement in these languages is a bundle of three features. This result is obtained as a consequence of three contrasting forms in the plural (leading to the postulation of \(\alpha_{speaker}\) and \(\alpha_{addressee}\)) which all contrast with the singular affix (leading to the postulation of \(\alpha_{singular}\)). Although the singular form -ar lacks two feature values, namely for \(\alpha_{speaker}\) and \(\alpha_{addressee}\), it does not lack these features altogether. The affix is part of a paradigm representation which, as a whole, generates these features. Agreement in these languages therefore meets the definition in (27): The affixes are argumental. Hence, they need to be associated with the external theta role after they are inserted in the structure and movement is correctly predicted to take place.

We make exactly the same prediction for Middle English. The paradigm is the mirror image of Old and Ålvdalen Swedish in that the singular has three distinct affixes and the plural one (cf. 29). This does not affect the number of features postulated, of course. As expected, Middle English has verb movement, as the example from Roberts (1993) shows: The finite verb in (30) precedes negation.\(^\text{10}\)

\(^{10}\) The Middle English example is from the late 15th century. By this time, English had already lost verb second, so that any movement we observe cannot be triggered by this constraint. Observe that the finite verb occurs in third position, which by definition is impossible in a verb second language.
(29)  
\[
\begin{array}{ll}
\text{Middle English} \\
\text{inf. singen} \\
SG & PL \\
1^{st} & singe & singen \\
2^{nd} & singest & singen \\
3^{rd} & singe\delta & singen \\
\end{array}
\]

(30)  
By thy thanks I set not a straw

Let us consider Germanic languages with an even richer agreement paradigm. Icelandic has five distinct forms (cf. 31a), which as a feature representation looks as in (31b).

(31)  
a.  
\[
\begin{array}{ll}
\text{Icelandic} \\
\text{inf. segja} \\
SG & PL \\
1^{st} & segi & segjum \\
2^{nd} & segir & segi\delta \\
3^{rd} & segir & segja \\
\end{array}
\]

b.  
\[
\begin{array}{c}
\alpha_{sg}, \alpha_{ag}, \alpha_{ad} \\
\alpha_{ag}, \alpha_{ad} \\
\alpha_{sg}, \alpha_{ad} \\
\alpha_{ag}, \alpha_{ad} \\
\alpha_{ag}, \alpha_{ad} \\
\alpha_{sg}, \alpha_{ad} \\
-i \\
-jum \\
-ir \\
-i\delta \\
-ja \\
\end{array}
\]

Hence, Icelandic is predicted to generate AgrP and therefore to have V to I movement.

Strictly speaking, Yiddish has four distinct morphological forms (cf. 32a). However, the ending \(-t\) is used for third person singular and second person plural. Since these together do not form a natural class, I conclude that they must be two distinguishable forms underlyingly. Hence, Yiddish has five affixes and the representation looks as in (32b).
Recall from the previous discussion that the affix \(-n\) must lack a feature value for [addressee]. The reason for this is that in general the first person plural can have a positive marking for this feature: Its referent optionally includes the persons that are addressed. It should therefore be possible to leave feature values unspecified after branching: \(-t\) contrasts with \(-n\) in that it has a value for [addressee], namely a positive one, whereas \(-t\) lacks a value. What ensures that \(-t\) and not \(-n\) is inserted in second person plural contexts is the fact that having a feature value is more specific than being unspecified. Under the assumption that the most specific form must always be inserted, the correct result is obtained.

Note by the way that analyzing \(-n\) as a syncretic form, incorporating first and third person plural, becomes possible by virtue of the fact that two features needed to describe the contrast with \(-t\), \([\text{sp}\text{-}\text{add}\text{-}sg]\) and \([\text{sp}\text{-}\text{add}\text{-}sg]\), have to be postulated anyway in order to describe the singular part of the paradigm: In other words, if the singular had been expressed with one affix, paradigm formation would have been blocked since there is no one feature F that would adequately describe the contrast, as depicted in (33):
Since paradigm formation is blocked here, the prediction is that a language with a representation as in (33) lacks V to I movement. Although I do not know whether this prediction is correct (there is no straightforward example of (33) that I know of), such a situation will become relevant in the description of English, as we will see shortly.

Since the five forms in Icelandic and Yiddish require the postulation of three features, both languages are predicted to show verb movement, even when we control for verb second. Recall that in Swedish, we looked at embedded clauses, where verb second fails to apply. This trick will not do for Icelandic and Yiddish, because in these languages verb second takes place in main and embedded clauses alike, even when the clause is embedded under a non-bridge predicate. As discussed by Vikner (1990, 1995), however, verb second is not completely unrestricted. For some reason, embedded clauses disallow verb second when introduced by certain WH-phrases, like *af hverju 'why' in Icelandic and *ven 'when' in Yiddish:\(^1\)

\[(34)\]
\[
\begin{align*}
\text{a.} & \quad *\text{Ég veit ekki af hverju í herberginu hefur kýrin staðið} \quad \text{Icelandic} \\
& \quad I\text{ know not why in the room has the cow stood} \\
\text{b.} & \quad *\text{Ikh veys nit ven in tsimer iz di ku geshtanen} \quad \text{Yiddish} \\
& \quad I\text{ know not when in the room has the cow stood}
\end{align*}
\]

This means that in these contexts adverbs can be used as a diagnostic for verb movement. Indeed we find that the finite verb precedes VP-adverbs, indicating that it moves to a VP-external position even when verb second is controlled for.\(^1\)

\[(35)\]
\[
\begin{align*}
\text{a.} & \quad \text{Ég veit ekki af hverju kýrin hefur oft staðið í herberginu} \\
& \quad I\text{ know not why the cow has often stood in the room}
\end{align*}
\]

\(^1\) Not all speakers of Yiddish find the example in (34) ungrammatical. This entails that for this group the presence or absence of V to I movement is impossible to establish in any direct way. It will be clear later on, however, that Yiddish behaves like Icelandic in other respects likely to be related to inflection-related verb movement, such as the possibility of expletive constructions with transitive predicates. Hence, indirect evidence for this movement operation in Yiddish can be obtained.

\(^1\) After the trigger for V to C has been introduced, this type of evidence for V to I will be seriously challenged. If the examples in (35) show V to C rather than V to I movement, some other factor must be responsible for the lack of subject-verb inversion (cf. chapter 3, section 2.1, for further discussion).
V to I movement

b. Ikh veys nit ven di ku iz oyfn geshtanen in tsimer
   I know not when the cow has often stood in the room

Let us now turn to languages without inflection-related verb movement and determine that the agreement paradigms of these languages indeed fail to meet the definition of argumenthood we propose. In Hallingdalen Norwegian, we saw, finite verbs are only marked for number, so that the representation looks as in (36):

(36) 
\[
\begin{array}{c}
\alpha \text{sg} \\
[+sg] \quad [-sg]
\end{array}
\]

Since no contrasts lead to the postulation of [αspeaker] and [αaddressee], neither affix qualifies as an argument. Hence, no verb movement is expected, which is the correct result (cf. 8, repeated here as 37).

(37) Noko gamlæ mænna som ikki haddæ vore mæ ve kyrkja
   some old men who not had been along at church

The proposal accounts for the loss of inflection-related movement in the history of English. Recall that Middle English had a rich agreement paradigm triggering verb movement. This movement was gradually lost around 1500, in the Early Modern period. By then, the language no longer had a distinct affix for the first person singular. Due to phonological erosion nothing but the verbal stem was inserted in this contexts, as well as in the plural.\(^{13}\) Phonological erosion affected the plural affix as well.\(^{14}\)

(38) Early Modern English
\[
\begin{array}{ll}
\text{inf.} & \text{cast-Ø} \\
\text{SG} & \text{PL} \\
1^{\text{st}} & \text{cast-Ø} \quad \text{cast-Ø} \\
2^{\text{nd}} & \text{castest} \quad \text{cast-Ø} \\
3^{\text{rd}} & \text{castep} \quad \text{cast-Ø}
\end{array}
\]

\(^{13}\)Gray (1985) mentions that the plural has an optional schwa. It is not clear whether such an optional schwa was really phonologically robust. Moreover, as observed by Roberts (1993), St. Thomas More (1478-1535), for instance, does not use it at all. Given these considerations, I assume that Early Modern English only has three robustly distinct forms, two overt and one coinciding with the verbal stem.

\(^{14}\)See Roberts (1993) and Rohrbacher (1994) for a more detailed discussion.
Note now that the hypothetical null affix is inserted in the first person singular and in the plural, contexts that do not constitute a natural class. A similar situation obtains for Modern English, where the verbal stem is inserted in any context but the third person singular.

(39) \[\text{Modern English}\]

<table>
<thead>
<tr>
<th></th>
<th>inf.</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cast-∅</td>
<td>cast-∅</td>
<td>cast-∅</td>
<td>cast-∅</td>
</tr>
<tr>
<td>SG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the perspective sketched here, these affixes cannot be members of a hierarchical representation. The reason is that the child will stumble upon the situation depicted in (40a) for Early Modern English and in (40b) for Modern English:

(40) a. \[
\begin{array}{c|c|c}
\alpha F_1 & \alpha F_2 & \alpha F_2 \\
+F_1 & [-F, \alpha F_2] & \alpha F_2 \\
+F_2 & \alpha F_1 & \alpha F_2 \\
\end{array}
\]

b. \[
\begin{array}{c|c|c}
\alpha F & \alpha F & \alpha F \\
+F & \alpha F & \alpha F \\
-F & \alpha F & \alpha F \\
\end{array}
\]

No comprehensive content can be given for \([\alpha F]\) in Modern English: There is no one feature that successfully describes the contrast between -s and the zero affix. The same is true for \([\alpha F_1]\) and \([\alpha F_2]\) in Early Modern English. Suppose that the contrast between -est and -eþ leads to the postulation of \([\alpha \text{addressee}]\) as the content for \([\alpha F_2]\). In that case, -est would also be incorrectly inserted in second person plural contexts. Hence, the affix -est must also be specified for number: The two forms must contrast with some other form such that \([\alpha F_1]\) is postulated. However, \([\alpha F_1]\) cannot be \([\alpha F_2]\), since in that case [+singular] would wrongly exclude first person singular. Since no one feature counts as the appropriate content for either feature, paradigm formation is again blocked.

Of course, the child will eventually come up with suitable feature matrices for these affixes; they are not unlearnable. Let us assume that, since these affixes cannot

---

15 The fact that the affixes in (40) cannot be completely learned on the basis of paradigm-internal contrasts might in fact have repercussions for the speed of acquisition. It has been reported by for instance Wexler (1994) that the acquisition of the third singular -s by the English child takes quite a while compared to the speed with which the Italian child acquires his/her agreement paradigm. If the contrast proves to be robust, the approach here provides a way of understanding it.
be part of a paradigm representation, they are listed separately. The Modern English lexicon, for instance, contains -s and a verbal, affixless stem. In third person contexts, the verbal stem will automatically be combined with -s, as together they count as the most specified form that therefore must be inserted in these contexts. The verbal stem is inserted in all other contexts and therefore functions as an ‘elsewhere’ form. Whatever the exact analysis of these English forms is, the point is that the verb movement parameter has two values, on or off. The value is determined on the basis of the top node of the agreement paradigm: It is only switched on when the feature matrix underlying all finite verb forms contains three features. Since in (Early) Modern English a hierarchical representation including all finite forms is impossible, there is no underlying feature matrix for agreement either. As paradigm formation is blocked, the automatic consequence is that the verb movement parameter is not switched on.

Recall from the discussion of Yiddish that the overt affix -t is inserted in third person singular and second person plural contexts. Since these do not form a natural class, the child was forced to postulate two distinct affixes -t, each with its own feature matrix. It will be clear that the English child must not be allowed to do the same with null affixes. If in Early Modern English two null affixes are adopted each can represent a natural class: One is inserted in first person singular contexts and the other in plural contexts. Consequently, paradigm formation can proceed and inflection-related movement is predicted, since three features will be postulated, the wrong result. Any theory that tries to make sense of the correlation between morphology and verb movement must assume that paradigm formation crucially relies on overt, phonological, evidence. A natural assumption on paradigm formation will give the correct result: There can be no more than one null element in a paradigm representation. If there can be two without any problem, it becomes hard to see what the upper limit is. This assumption about the restriction on adopting null forms makes a further prediction, which I will show is correct. Suppose we have a paradigm that is like Early Modern English in that the plural form coincides with one form used in the singular, but is unlike this language in that it is an overt affix instead of a null form. In that case, the child has overt evidence for it and cannot ignore it. Hence, it can do the same what learners of Yiddish do for -t: Since the contexts in which the form is inserted is not a natural class, there must be two overt affixes, each with a distinct feature make-up. There is one example of such a paradigm, namely a Middle English dialect spoken in the south:
Chapter 2

The overt affix -eþ is inserted in third person singular contexts and in the plural. Since these contexts do not form a natural class, the child postulates two distinct affixes -eþ. The consequence is that three features are postulated and the paradigm counts as argumental. It is not surprising to find, then, that this dialect had V to I movement, just like 'standard' Middle English (cf. Roberts 1993:256).

3.3 Discussion

What we have accounted for is the fact that languages with rich agreement paradigms overtly move the verb to a VP-external position. We have seen how the concrete definition of rich, or ‘argumental’ agreement makes quite a number of correct predictions, both synchronically and diachronically (cf. Swedish and English). No specific claim has been made about languages with poor Agr. As already noted in the introduction, next to poorly-inflected languages that leave the verb in situ, there exist a few languages that show verb movement despite their poor agreement paradigm. The theory developed here makes no immediate predictions about languages with poor agreement. If the verb stays in situ, this entails that there is no need to move. From the present perspective this can be understood as indicating that Agr does not have to be interpreted. If the verb does move, however, there might be a different reason for this. The only prediction made is that the status of inflection itself cannot be the ultimate cause. There might, however, be other triggers. Alternatively, the cause for V to I movement might lie in the acquisition process. In this section, I will discuss this second option, since it is suggested by data from Faroese.16

Faroese has three distinction in its agreement paradigm. The singular displays two distinct forms, whereas the plural has one affix. The representation looks as in (42):

\begin{align*}
(41) & & \text{Middle English (south)} \\
 & & \text{SG} \quad \text{PL} \\
1^\text{st} & & \text{singe} \quad \text{singeþ} \\
2^\text{nd} & & \text{singest} \quad \text{singeþ} \\
3^\text{rd} & & \text{singeþ} \quad \text{singeþ} \quad \text{(Roberts 1993:256)}
\end{align*}

The overt affix -eþ is inserted in third person singular contexts and in the plural. Since these contexts do not form a natural class, the child postulates two distinct affixes -eþ. The consequence is that three features are postulated and the paradigm counts as argumental. It is not surprising to find, then, that this dialect had V to I movement, just like ‘standard’ Middle English (cf. Roberts 1993:256).

---

16 Ackema (1998) analyzes V to I movement by means of an optimality approach. He argues that the correlation between rich agreement and verb movement entails a particular constraint ranking. The fact that some languages move the verb despite having poor agreement then follows from a different ranking. The attractive property of this proposal is that nothing extra has to be said about the languages under discussion in this section: They follow from the system. The objection I have, however, is that the system allows a ranking in which languages with rich inflection leave the verb in situ. These languages, I have assumed throughout, are not clearly attested.
Note that \[\alpha\text{addressee}\] is not part of the agreement representation at all, since the contrast that would trigger its postulation does not exist. Therefore, none of the forms in the paradigm qualifies as argumental, according to the definition in (27). On the basis of the paradigm representation we expect Faroese to lack an inflection-related verb movement. Since Faroese does not display verb second in embedded clauses, these contexts provide the relevant testing case. Indeed we find that many speakers obligatorily put the finite verb after the adverb, indicating that it does not move.

Thus, we seem to make the right prediction for this language. However, Jonas (1995) reports that an equal number of speakers finds such examples grammatical. On the basis of her findings, she suggests that there are in fact two dialects of this language, Faroese I and II. Although both dialects have verb second, only Faroese I has V to I:

Hence, our theory does not straightforwardly capture these speakers of Faroese I: They move the verb in non-V2 contexts although their grammar has the same agreement paradigm as Faroese II.

That the correlation between rich inflection and overt verb movement cannot be reversed is shown by at least two other languages.\(^{17}\) Middle Scots has a poor agreement paradigm (cf. 45). Kronoby Swedish has a paradigm that is like the one in French is another potential example. Although French looks rich on paper, the singular forms as well as third person plural are all pronounced as a schwa. In spoken French, first person plural is often replaced by \(\text{(on) parler}\), reducing the number of distinct morphological forms even further. As shown in the following chapter, subject clitics in this language seem to behave as agreement markers (cf. Muller 1984; Roberge 1986; Hulk 1986; Auger 1992; Zribi-Hertz 1993; Rohrbacher 1994). If so, the presence of verb movement is predicted by our theory.
standard Swedish in all relevant respects: It does not show any person/number
distinction.

(45) 

\[
\begin{array}{lc}
\text{Middle Scots} & \\
\text{SG} & \text{PL} \\
1^{\text{st}} & \text{cast(is)} & \text{cast(is)} \\
2^{\text{nd}} & \text{castis} & \text{cast(is)} \\
3^{\text{rd}} & \text{castis} & \text{cast(is)}
\end{array}
\]

As shown below, both languages place the finite verb in front of VP-adverbs (cf. 46a-b).

(46) 

a. He vas bra er an tsöfft int bosen Kronoby Swedish
   \textit{it was good that he bought not book-the}

b. quhen he trespassit nocht Middle Scots
   \textit{when he trespassed not}

The existence of these languages might lead one to conclude that any correlation
between rich inflection and verb movement is coincidental and that it is a mistake to
incorporate it in a theory of verb movement. The unfortunate consequence is then that
we lose the connection between morphology and verb movement and hence a principled
explanation for the cross-linguistic and diachronic observations. Two additional reasons
for not wanting to draw that conclusion can be given. First of all, I feel that the three
counterexamples are tolerable in view of the number of languages behaving as expected
(which does not imply that nothing has to be said about them).\footnote{Although I have not exhaustively shown it, for the European VO languages alone, correct predictions are made for Old Swedish, Early Modern Swedish, Modern Swedish, Alvdalen Swedish, Old Danish, Modern Danish, Old Norse, Norwegian, Hallingdalene Norwegian, Icelandic, Yiddish, Old English, Middle English (including the southern dialect), Early Modern English, Modern English, Faroese II, and Italian. I will show in the next section that the OV languages Dutch and German can be argued to behave as expected. In chapter 3 I will argue that French is not really a counterexample.}

Second, with respect to
the Indo-European languages at least, I know of no clear counterexamples in the
opposite direction, i.e. of languages with rich inflection but no verb movement. So,
although any theory based on the correlation should ideally have something to say about
the counterexamples mentioned, I think that any theory \textit{not} based on it should say
something about the lack of languages that leave the verb in situ in the presence of rich
agreement.\footnote{As we will see in the next section, OV languages might in fact have an AgrP and still leave the verb in situ. It is therefore more correct to say that there are no clear examples of languages with a rich agreement paradigm but no 
AgrP.} If so, \textit{some} theory relating rich inflection and verb movement is required
anyway.
An approach to understanding the counterexamples mentioned is actually suggested by the fact that we only find them in one direction. It is not unlikely that the agreement paradigms of the languages mentioned above have eroded, so that inflection-related verb movement was in fact triggered at an earlier point in time. These languages, then, might have retained the movement operation despite the deflection of the agreement paradigm. How could that be possible? Suppose that at some point children note that the agreement paradigm no longer makes verb movement necessary. At the same time, however, they might still be confronted with primary data showing the verb in a place distinct from its base position. Like Rohrbacher (1994), I will assume that the child has two clues in the input relevant for the verb movement parameter; word order and the agreement paradigm. It may simply note the word order before it acquires the agreement paradigm and decide, depending on the number of people still adopting the old grammar, to add a movement rule to their intermediate grammar in order to make it more in line with the adult state. This is not necessarily an extra-grammatical rule. What they might in fact do is take the word order fact as relevant and on the basis of that assume that particular features (the ones relevant for inflection-related movement) are present despite their non-overt realization. They are forced to abstractly postulate features that are motivated by overt contrasts in other languages. Since many learners of a particular language might simultaneously discover that verb movement is no longer necessary, language change will most probably take place, leading to the loss of verb movement. The point, however, is that the loss of this operation can never be guaranteed to take place at precisely the point where the grammar no longer triggers it, since there is one potentially complicating factor, namely the output of the older generation.

This explanation for the presence of V to I in languages with poor agreement has two advantages. First, it explains why we do not find languages with rich inflection but no verb movement. This situation is qualitatively different from the previous one. Although one could imagine that learners conclude that some features must be abstractly present given the input data, it is much harder to imagine what it means to say that learners might at one point conclude that some features are abstractly absent. Since the features are overtly realized, the language learner cannot simply ignore them. Hence, any UG principle referring to these features will automatically be activated and there is only one UG-compatible grammar, namely one with inflection-related verb movement. Therefore, rich agreement will always trigger verb movement.

Second, it gives a handle on the Faroese situation. The two dialects have sometimes been taken as the prime example showing that the correlation with agreement morphology cannot be maintained: Although they have the same paradigm, they differ with respect to verb placement (cf. Bobaljik & Thráinsson 1998). However, Faroese is even more complex. Speakers of this dialect not only allow V_{finite}-Adverb orders despite its poor agreement paradigm, but they actually allow the other order as
well (the one that is obligatory in Faroese II), a fact not yet mentioned but reported by Jonas (1995). Now, inflection-related verb movement is not optional in the other (Germanic) language we have seen. Similar remarks can be made for other verb movement operations, like verb second: In Dutch, Swedish and Icelandic, verb second is obligatory in declarative main clauses whereas it is categorically blocked in French. Therefore, I conclude that something more needs to be said about Faroese in any theory of verb movement. It does not just pose a problem for theories based on the correlation with rich agreement.

What the Faroese I data suggest is that these speakers have two competing grammars in the sense of Kroch (1989), one with and one without verb movement: They reflect a stage in language change (cf. Rohrbacher 1994, Vikner 1995). Although the agreement paradigm no longer triggers movement, positive evidence from the older generation forces the child to adopt a movement rule to make its grammar compatible with the input data. At the same time, however, they employ a second grammar without the verb movement, which is of course also UG-compatible. The same situation occurs in Early Modern English. As is well known, V to I and V in situ have coexisted for quite some time and both orders show up within one and the same manuscript (Ellegård 1953, Kroch 1989). This suggests that a language like Middle Scots might have gone through a similar stage. Since detailed diachronic overviews of verb placement are lacking, the proposal is by necessity suggestive rather than conclusive. Kronoby Swedish, then, must not have reached a stage of grammar competition yet and there is no telling, of course, when this will happen.

To sum up, the theory of V to I presented in this chapter is immune to the existence of V to I languages with poor agreement. Further research might reveal other triggers. For the moment, I suggested that learners might postulate V to I, once confronted with positive data, by assuming that verb agreement can abstractly contain those features which in other languages are postulated on the basis of overt markings. This is a consequence of the fact that the learner is forced to make the grammar (s)he is acquiring UG-compatible.

---

20 Although making a diachronic prediction for Kronoby Swedish and Faroese I is rather meaningless at this point, Arnold Evers suggested to me that it might be interesting to see whether these languages pose additional problems for language acquisition. That is, one might expect that adding abstract features to one's grammar in the absence of morphological support entails that verb placement is acquired later. This may be so since the syntactic evidence in these languages is not so robust. Distributional evidence must come from clauses embedded under a non-bridge verb that contain an adverb in the appropriate position. The V to I parameter might also be switched on given the presence of constructions that rely on it. We will see later that languages with verb second and V to I have transitive expletive constructions and that V to I makes object-to-subject raising optional. The lack of these constructions in the input, however, count as negative evidence and will therefore be of no use to the child. I am not aware of any literature on this point.
4. The OV languages

The syntax of OV languages is such that the presence or absence of inflection-related verb movement is hard to establish empirically. Therefore, they do not directly favour the analysis proposed here, although they do not undermine it either. In this section I will focus on German and Dutch and argue that, as expected by our definition of richness, richly-inflected German has an AgrP, in contrast to poorly-inflected Dutch.

In Dutch and German, the verb appears at the end of the clause once verb second is controlled for. This fact can be observed by looking at embedded clauses where, like in Mainland Scandinavian, verb second fails to apply:

\[(47)\]
\[
\begin{align*}
\text{a.} & \quad \text{Hans gelooft dat Sabine hem bemint} \\
& \quad \text{Dutch} \\
& \quad \text{Hans believes that Sabine him loves} \\
\text{b.} & \quad \text{Hans glaubt dass Sabine ihn liebt} \\
& \quad \text{German} \\
& \quad \text{Hans believes that Sabine him loves}
\end{align*}
\]

It has often been assumed that in OV languages the verb moves rightward to some head-final functional category, as indicated in (48):

\[(48)\]

Since such a verb movement is string-vacuous, we cannot see its effect: It does not lead to a change in word order. Therefore, it could take place in both Dutch and German, it could take place in neither, or it could take place in just one of these languages.

The theory of inflection-related movement presented here predicts that Dutch and German should be different. German is richly inflected for agreement. It has the same paradigm as Yiddish, the only difference being that the first person singular is marked by -e rather than -ø.
Therefore, like Yiddish, German should project AgrP and verb movement is expected even in non-V2 contexts. Dutch, on the other hand has three distinct forms, like Faroese (cf. 50a). The paradigm representation of Dutch, therefore, looks as in (50b):

As can be observed, there are not enough contrasts for the postulation of the feature \([\alpha, addressee]\). Hence, these affixes do not have argumental status and verb movement and consequent projection of Agr is not triggered in Dutch.

Although these predictions seem to be underdetermined by the data, there is nevertheless some indication that points in the direction of the predicted contrast. In Dutch, PPs can easily appear after the verb(al cluster) in embedded clauses. Many speakers of German, however, do not allow this phenomenon (known as PP-over-V). When occurring post-verbally, PPs have to be heavy or heavily stressed (Anke Lüdeling, Dirk Bury, Frank Heine and Werner Abraham, p.c.), which might indicate that they are really in a dislocated position. In Dutch, there is no comparable heaviness effect.

---

21 Not all speakers of Dutch pronounce the \(n\) in the plural affix \(-en\). This does not affect the paradigm representation.
(51) a. \[\text{Dat hij suiker bij de bakker suiker gekocht heeft bij de bakker}] is vreemd
\[that \text{ he sugar at the baker's buys at the baker's is strange}\]
b. \[Dass er beim Bäcker Zucker gekauft hat beim Bäcker], ist ungewöhnlich
\[that \text{ he sugar at-the baker's buys at the baker's is strange}\]

The argument will be as follows. I propose that German generates Agr outside of VP as the head of a head-final projection, a possibility that I will restrict to OV languages. PP-over-V will consequently be blocked since it would bring the PP in a position between the verbal stem and Agr. This leads to a crash at PF (cf. 52a). Dutch does not generate AgrP and therefore PP-over-V is allowed (cf. 52b).

(52) a. 
\[
\begin{array}{c}
\text{DP} \\
\text{AgrP} \\
\text{DP} \\
\text{Agr'} \\
\text{VP} \\
\text{V'} \\
\text{PP} \\
\text{DP} \\
\text{V} \\
\text{Agr}
\end{array}
\]

b. 
\[
\begin{array}{c}
\text{DP} \\
\text{VP} \\
\text{DP} \\
\text{V} \\
\text{PP} \\
\text{V}
\end{array}
\]

Before we can properly relate the contrast in (51) to the absence or presence of AgrP, we have to spell out some assumptions concerning the structure of the clause-final verbal clusters. Below, I will show that a reanalysis process, as proposed by Huybregts (1984) and Haegeman & van Riemsdijk (1986), seems well equipped to handle the data under consideration.
4.1 Verbal clustering

Koster (1974) observes that if two PPs appear post-verbally their most natural order is the mirror image of the pre-verbal one:

(53) a. dat Jan [PP-1 tijdens de lunch] [PP-2 aan zijn vader] dacht
   that Jan during the lunch about his father thought

   b. dat Jan dacht [PP-2 aan zijn vader] [PP-1 tijdens de lunch]

   c. ?? dat Jan [PP-2 aan zijn vader] [PP-1 tijdens de lunch] dacht

   d. ??dat Jan dacht [PP-1 tijdens de lunch] [PP-2 aan zijn vader]

This suggests that PP-1 must be attached higher than PP-2 and that both can be generated on either side of the verb: The structure in (54) naturally accounts for the data in (53).

(54)

Reuland (1990) and Ackema & Neeleman (1998) provide additional arguments for the claim that PP-1 is higher than PP-2, irrespective of their ordering with respect to the verb. First, Ackema & Neeleman show that VP-topicalization gives bad results when PP-1 is stranded. Stranding of PP-2 is systematically better:

(55) a. ?<Aan zijn vader> denken <aan zijn vader> heeft Jan alleen tijdens
dee pauze gedaan
   about his father think about his father has Jan only during the lunch
done

   b. *<Tijdens de lunch denken <tijdens de lunch> heeft Jan alleen aan
   zijn vader gedaan

Second, scope relations between the PPs further corroborate the structure in (54). The example in (56a), where in die dagen 'in those days' takes scope over volgens Marleens plan 'according to Marleen's plan' means that in those days we followed Marleen's ideas about how to spend a holiday. The example in (56a'), where the scope relation is reversed means that, in accordance with Marleen's plan, we went on a holiday at a

22 See Barbiers (1995) for a radically different, Kaynian, analysis of PP-over-V and mirror image effects.
particular time. As expected by the structure in (54), example (56b), the mirror image of (56a), has the same interpretation as (56a) whereas (56b') means the same as (56a'). When the two PPs appear on opposite sides of the verb, as in (56c,c'), both readings are available, as expected.

(56) a. dat we [PP-1 in die dagen] [PP-2 volgens Marleens plan] op vakantie gingen
   that we in those days according to Marleen's plan on holiday went

   a'. dat we [PP-1 volgens Marleens plan] [PP-2 in die dagen] op vakantie gingen
   that we according to Marleen's plan in those days on holiday went

b. dat we op vakantie gingen [PP-2 volgens Marleens plan] [PP-1 in die dagen]

   b'. dat we op vakantie gingen [PP-2 in die dagen] [PP-1 volgens Marleens plan]

   c. dat we [in die dagen] op vakantie gingen [volgens Marleens plan]

   c'. dat we [volgens Marleens plan] op vakantie gingen [in die dagen]

Example (56a') is not ambiguous. As noted by Reuland (1990), this constitutes an argument against rightward V to I in Dutch. Under an analysis where the PPs are attached on opposite sides of VP but PP-2 higher, as in (57), we expect the availability of a second reading for the order [PP-1 - PP-2 - V], namely the one where PP-2 scopes over PP-1:

(57)

To conclude, we have some empirical motivation for the structure in (54). As Ackema (1995) notes, similar mirror image effects obtain once the verb is replaced by a verbal cluster (for instance zou hebben gedacht 'would have thought' in (53)) and concludes
from this that basically the same analysis must apply. This entails, then, that VP is headed by a complex verbal cluster, as indicated in (58).

(58)

```
    VP
   /   \
(tijdens de lunch) (tijdens de lunch)
   /   \                      /   \
(aan zijn vader)    (aan zijn vader)
   /     \                      /     \                      /     \
(V) (zou) (hebben) (gedacht)
```

Ackema concludes therefore that in order to derive the mirror effects clusters these verbal clusters are base-generated as such. In this respect, Dutch must be different from for instance English, where intervening adverbs reveal that no clustering occurs:

(59) John will probably have completely forgotten about us

The assumption that complex tenses are base-generated differently across languages is not necessary, I believe. The structure in (58) can be seen as a reanalyzed structure, distinct from the structure that has initially been base-generated. Huybregts (1984) and Haegeman & van Riemsdijk (1986) have argued that reordering of the verbs in a Dutch cluster is best described by PF inversion rules that applies after a reanalysis process. I will not repeat the details of their analysis here, but merely give an example of such a reordering. The order of verbs in (60a), the plausible base order, is a grammatical output although it is judged somewhat marginal by many speakers. The derived order, the one in (60b), is judged grammatical by any speaker of Dutch.

(60) a. %dat Jan het probleem begrijpen wil
   that Jan the problem understand want
   'that Jan wants to understand the problem'

b. dat Jan het probleem wil begrijpen

Under the reanalysis hypothesis, the clause in (60a) would have the structure given in (61).
On the basis of the reanalyzed structure, inversion affects node \( V_x \), reverting the order of the verbal heads, which are sisters.
Chapter 2

(62)  Reanalysis

dat hij het probleem  wil  begrijpen
\[ V_2 \quad V_1 \]
\[ V_s \]

Note that in the reanalyzed structure in (61) the object is a sister to the verbal cluster and must appear to the left of it. Let us assume, for concreteness' sake, that this is a consequence of case directionality, which in Dutch is to the left. This idea, familiar from Travis (1984), is adopted by Neeleman & Weerman (1999) who argue that constituents are unordered in syntax. At PF, a DP-object must be spelled out on the left, otherwise it fails to be case-marked. PPs are different in that they do not require case. The consequence is that they can be spelled out before or after the verbal cluster but never in between, since that would block cluster formation. This, then, gives rise to the mirror image effects noted by Koster (cf. 53). Since the PF order is determined on the basis of the hierarchical order generated by the syntax, we also obtain the scope facts in (56): The PPs are in the same scope relation pre- and post-verbally.

Note that under a head-adjunction analysis of verbal clusters (cf. Evers 1975), the facts concerning PPs do not follow straightforwardly.

(63)
When the PPs are generated inside the lowest VP and surface after the verbal cluster, they must have moved rightward crossing the verbal cluster. The lowest attachment site is the VP node headed by the highest V. If so, it is unclear what causes the mirror image effect in (52): Why would right-adjunction take into consideration the hierarchical ordering before movement? Moreover, if one PP precedes the verbal cluster whereas the other follows it, we saw that the sentence was ambiguous (cf. 56c’). This is rather unexpected: If one PP has been extraposed to the right, it ends up in a higher position than the PP preceding the verbal cluster. Hence we expect that the postverbal PP scopes over the preverbal one. In order to capture the ambiguity of (56c’), one could take into account the VP-internal trace of the moved PP, which is ambiguously higher or lower than the preverbal PP.

(64) a. dat we \(<t_{1}>_{[p_{p-1}} volgens Marleens plan\) \(<t_{1}>_{[p_{p-2}} in die dagen\) \(<t_{1}>_{[p_{p-1}} op vakantie gingen \)

   *that we in those days according to Marlene’s plan on holiday went*

   a’. dat we \(<t_{1}>_{[p_{p-1}} in die dagen\) \(<t_{1}>_{[p_{p-2}} volgens Marleens plan\) \(<t_{1}>_{[p_{p-2}} op vakantie gingen \)

In that case, however, we expect that when two PPs follow the verbal cluster, the resulting sentence is ambiguous, since preverbally their traces are in an ambiguous scope position with respect to one another, as indicated in (65).

(65) a. dat we \(<t_{1}>_{[p_{p-2}} volgens Marleens plan\) \(<t_{1}>_{[p_{p-1}} in die dagen\) \(<t_{1}>_{[p_{p-2}} op vakantie gingen \)

   b. dat we \(<t_{1}>_{[p_{p-1}} in die dagen\) \(<t_{1}>_{[p_{p-1}} volgens Marleens plan\) \(<t_{1}>_{[p_{p-2}} op vakantie gingen \)

Nevertheless, we saw that the linearly second PP always takes scope over the first one. In short, it is unclear why the surface position of PPs determines the interpretation when they appear at the same side of the cluster, whereas a PP-trace is relevant in the case one PP is extraposed but not when two are extraposed. Perhaps additional assumptions will explain these facts, but the point is that all these assumptions need not be made once the reanalysis approach to verbal clustering is adopted. I conclude that reanalysis is, better than the head-adjunction analysis, able to capture the PP-data and is therefore empirically motivated.
4.2 A head-final AgrP in German

Let us now turn to German and assume that reanalysis takes place in this language too. What I propose is that in embedded clauses inflection is generated in a position distinct from the verbal stem, namely as a sister to VP:\(^{23}\)

![Diagram of German AgrP structure](image)

Why would it be possible in German to generate inflection in a distinct position? And what good does it do? There are two conditions on inflection that are relevant here. First of all, inflection is affixal, meaning that Tense and Agreement must be spelled out on a verbal stem at PF (Lasnik's (1981) stray affix filter). Second, inflection is suffixal in that Tense and Agreement appear after the verbal stem rather than in front of it. Both conditions are straightforwardly met by the structure in (66).\(^{24}\) Since the stem of the finite verb appears at the right edge of VP, it is adjacent to \([\text{Agr} [\text{T} \text{ Agr}]]\) at PF, so that inflection can be spelled out appropriately. Second, these affixes are situated to the right of the verbal stem if one flattens the structure. Hence, they can be spelled out as

---

\(^{23}\) Haider (1997) argues against the presence of functional projections other than CP in German, noting that there is no evidence for verb movement to such a position. Although I basically agree with his evidence, I do not agree with his conclusion that this automatically entails the absence of additional projections since the possibility left open (and pursued here) is that there is a functional projection, overtly realized by Agr, without the verb actually moving to it.

\(^{24}\) The analysis proposed here was inspired by Bobaljik's 1995 account of verb movement (cf. the discussion in chapter 1, section 4). In the present account, however, the possibility of generating affixes in a position distinct from the verb is restricted to OV languages with rich inflection for reasons that will be clear.
Although it follows from the properties of inflection that the structure in (66) is allowed, this in itself does not explain why this option must be realized: Why is moving the verb leftward to project Agr, as in Icelandic and Yiddish, blocked altogether? There is a straightforward answer to this question, namely economy. Note that in (66) Agr is generated in a VP-external position. Therefore, it can be interpreted as VP’s subject, as required. At the same time it can still be properly spelled out on the verbal stem at PF. What does not take place is verb movement. This operation has become completely redundant since it fulfils no purpose. In short, OV languages with rich agreement generate inflection to the right of VP, since it is the most economical way of putting Agr in the required structural position: Merge over move (Chomsky 1995). In VO languages, on the other hand, the same strategy is blocked for obvious reasons. If the inflectional material is generated on the right, like in German, internal arguments would generally intervene, so that the adjacency requirement is violated. If inflectional affixes are generated distinct from the verb but to the left, they cannot be spelled out as suffixes since they linearly precede the verbal stem when one flattens the structure.

In terms of economy, then, nothing is gained by generating Agr in a different position.

25 As is well known, the surface order of two verbal heads in German is different from that in Dutch. Strikingly, in German the finite verb must appears at the end. Hence, the following contrast obtains:

(i)  a. dat Jan dit boek zeker <wilde> lezen <%wilde>
    that Jan this book surely will read will
  b. dass Hans dieses Buch <*wollte> lesen <wollte>

It is extremely tempting to relate this contrast to the structure proposed. In German the finite verb appears at the end of the cluster so that it is string-adjacent to the inflectional node. From the viewpoint of reanalysis, then, German lacks the PF-inversion rule that Dutch has for an obvious reason. Although such an analysis can perhaps be pursued, it is not straightforward for two reasons. First of all, Afrikaans differs from Dutch in only allowing the German order (Robbers 1997:52). Since Afrikaans lacks agreement, it must lack the Dutch inversion rule for a different reason.

(iii) dat Jan Marie <*het> gesien <het>
    that Jan Marie has seen has

More seriously, the contrast between Dutch and German breaks down in more complex examples such as (ii), where the finite verb appears at the front of the cluster:

(ii) dass Hans dieses Buch hätte lesen wollen
    that Hans this book could-have read want

Since I cannot do justice to the complexity of the issue (cf. also Den Besten 1989; Rutten 1991; Wurmbrand 1999), I will not pursue it further.

26 Here, the analysis clearly differs from Bobaljik (1995), who assumes that PF-adjustment rules can revert an Agr-V order into a well-formed morphological object with the affix appearing after the verbal stem. Obviously, assuming such rules would destroy the explanation offered for German.
position distinct from the verbal stem.

We are now in the position to derive the contrast between Dutch and German, repeated here as (67):

\begin{align*}
(67) \text{a. } & [\text{Dat hij suiker } <\text{bij de bakker}> \text{ suiker gekocht heeft } <\text{bij de bakker}>\text{]} \text{ is vreemd} \\
& \text{that he sugar at the baker's buys at the baker's is strange} \\
(67) \text{b. } & [\text{Dass er } <\text{beim Bäcker}> \text{ Zucker gekauft hat } <\text{beim Bäcker}>\text{}], \text{ ist ungewöhnlich} \\
& \text{that he sugar at-the baker's buys at the baker's is strange}
\end{align*}

This fact can be captured by the present analysis, where the verbs form a cluster through reanalysis. PPs cannot be spelled out to the right of the cluster at PF since they would end up between the finite verb and Agr, as indicated in (67) below. Consequently, adjacency between V and Agr is disrupted and the affix cannot be appropriately spelled out on the verbal stem. Hence, PPs must be spelled out at the left of the verbal cluster.\(^{27}\)

\(^{27}\) In an asymmetric approach that does not allow head-final projections, the contrast in (67) would have to follow from an interplay of leftward movements. Even in an analysis with the premises of Kayne (1994) and Koopman & Szabolcsi (1999), this contrast can be made to follow from the different status of Agr. Let me sketch how that would look. The head-initial projection dominating VP must be headed by the Agr-affix in German, given our formulation of the V to I parameter. The head-final character then follows from movement of the VP into spec-AgrP. If the verb wants to satisfy the stray affix filter, however, V must be adjacent to Agr meaning that all VP-internal XPs appearing to the right of V must move out of VP, either prior to movement of VP to spec-AgrP or as a consequence of this movement:

\((i)\) \quad \left[ \ldots \text{XP} \ldots [\text{agp} [\text{VP V t]} \text{Agr [tVP]]}\right]

Hence, the lack of PP-over-V follows. Dutch is different in that the first projection dominating VP does not have to be AgrP. Suppose then that PPs can move there.

\((ii)\) \quad \left[\text{VP PP, F [VP t, V OB]}\right]

In that case, any leftward movement of VP will lead to PP-over-V. In order to get a PP to follow the verb in German, leftward VP-movement must cross the position that PP has moved to in (i). Crucially this is a different and higher position than the one PPs can occupy in Dutch. Under the assumption that this higher projection is associated with focus, it follows that PP-over-V in German is only allowed when PPs are heavily stressed, in contrast to Dutch.

\(^{28}\) Note that in main clauses the verb moves twice in order to project Agr and Tense respectively. Therefore Agr must be generated on the verbal stem in main clauses but is generated in a distinct position in embedded clauses. Nevertheless, PP-extraposition is blocked in main and embedded clauses alike. Apparently, then, PP-placement, like constituent placement in general, is not construction-specific but tied to parameter settings: PP-over-V is blocked in OV languages with rich inflection. Note that the choice of generating Agr separately or not might appear construction-specific as well, but which option is chosen is solely determined by economy, a notion that does not play a role in the placement of PP-constituents.
Although the data in (66) nicely confirm the claim that German has an AgrP in contrast to Dutch, it does not seem to be true that all speakers of German disallow PP-extrapolation. In fact, for those speakers that do, mirror image effects can be observed. Gereon Müller (p.c.) informed me that for him (69) is ambiguous, indicating that adjunct 2 can either be higher or lower than adjunct 1. Since adjunct 1 is lower than er in spec-AgrP, adjunct 2 cannot be higher than right-adjointed to VP.

(69) dass er [adjunct 1 dauernd] genervt hat [adjunct 2 in manchnen Situationen]

*that he always got on our nerves in some situations*

If spelling out the PP after the verbal cluster is a possibility for these speakers, how come V-Agr adjacency is not disrupted in their grammar? The present analysis, unlike the head-adjunction analysis, provides a way of describing the contrast between speakers that do and speakers that do not allow PP-over-V. For speakers that do, I suggest that the functional node Agr is input to the reanalysis process. That gives rise to
the structure in (70), where the verbal stem and the affix have become sister nodes. As a consequence, PPs can now be spelled out after the verb(al cluster) without disrupting V-Agr adjacency. Since reanalysis does not change the hierarchical relations generated by syntax, mirror image effects with PPs like in Dutch are expected.29

(70)

Even if the distribution of PPs in Dutch and German is better described by adopting a reanalysis account of verbal clustering than a verb raising account, what theoretical status does reanalysis have? In a minimalist theory, structures are built in a bottom-up fashion by the operations merge and move after which they are sent to the output levels LF and PF. A legitimate question to ask, therefore, is whether adding reanalysis to the inventory of operations would not unnecessarily complicate the model of grammar.

29 In this dialect of German, Agr must of course still receive a theta role from VP. If one assumes that reanalysis should be “expressed by means of an additional par of brackets” (cf. Haegeman & van Riemsdijk 1986), the initial representation built by the computational system is never destroyed by the reanalysis process before it is sent to LF. If so, Agr can receive VPs external theta role in both dialects.
Although an exhaustive discussion of this issue is beyond the scope of this thesis, I will indicate in which direction conceptual motivation for reanalysis can be sought.

In the government and binding framework, reanalysis has been proposed as an alternative to adjunction (Huybregts 1983; Haegeman & van Riemsdijk 1986; Bok-Bennema & Groos 1988, van Riemsdijk 1988). As van Riemsdijk (1998: 644) remarks, "[...] the idea is NOT to add a new device, reanalysis, to the inventory of operations performable by transformational rule, viz., substitution and adjunction, but rather to replace adjunction by reanalysis". Note that in the discussion about the inventory of operations performed by the computational system, the status of verb movement is fuzzy, as observed by van Riemsdijk (1998). In recent theorizing this operation is mostly seen as an adjunction operation adjoining the verb to an empty head. In GB theory, movement of the verb to an empty head and one to an overt head are distinguished: The former is called substitution and the latter adjunction. It is this adjunction operation that reanalysis is supposed to replace. In the alternative view on verb movement expressed in this thesis, verb movement is neither. If the verb moves in order to project one of its features, the operation is most appropriately called 'project'. Therefore, I conclude that V to I and V to C do not affect the discussion about the status of reanalysis, only verb raising does.

Reanalysis is empirically motivated since it offers a better account for some subtle differences between German and Dutch than head-adjunction does. If reanalysis is introduced in the grammar with the goal of eliminating head-adjunction, the computational system is not needlessly enriched. Ideally, however, we would like to have some idea as to why the grammar would prefer reanalysis over head-adjunction as a way to encode dependency relations, assuming that this is what is at stake here. A priori, both are possible ways of achieving this result. Although I cannot provide an extensive answer to this question, I think that van Riemsdijk (1998) offers an important clue. He notes that in all cases that are amenable to an account in terms of reanalysis, the two (or more) elements involved are string-adjacent. We might speculate, then, that reanalyzing them as one complex head is simply a more economical solution than syntactic movement, hence preferred by the computational system.

To sum up this section, I propose that, despite the lack of clear distributional evidence, German, in contrast to Dutch, has a head-final AgrP projected from an inflectional affix. This affix is generated in a position distinct from the verbal stem, a possibility restricted to OV languages. It would be wrong, however, to conclude that a head-final AgrP is postulated for German just to account for the PP-over-V contrast with Dutch. This hypothesis will eventually account for the following five facts about German:
Chapter 2

(i) The lack of a visible inflection-related verb movement, despite the rich agreement paradigm.
(ii) The resistance of PP-over-V for a number of German speakers.
(iii) The lack of verb second in embedded clauses.
(iv) The existence of transitive expletive constructions in main clauses.
(v) The lack of transitive expletive constructions in embedded clauses.

Points (i) and (ii) have been discussed in this section: (i) follows from economy and (ii) follows from the fact that V and Agr must be PF-adjacent. In the next chapter, the presence of AgrP as a projection from an affix will be relevant for the explanation of (iii). It is argued that verb second languages with rich agreement (i.e. verb second languages that project AgrP) have verb second in main and embedded clauses alike. In this way, Icelandic and Yiddish contrast with Mainland Scandinavian and Dutch. German, however, seems to be the exception: Although it has rich agreement, it does not display verb second in embedded clauses. I will show that under the analysis proposed here, the explanation of this contrast is straightforward. As to (iii) and (iv), it will be shown in chapter 4 that German has transitive expletive constructions, like Yiddish and Icelandic and unlike Mainland Scandinavian and Dutch. It contrasts with Icelandic and Yiddish, however, in that it only allows them in main clauses. Since the possibility of generating these constructions is argued to depend on the application of verb second as well as on the presence of AgrP, German must have this projection. Since verb second fails to apply in embedded clauses for independent reasons, transitive expletive construction do not occur in these contexts, in contrast to Yiddish and Icelandic.

4.3 Asymmetric verb movement

Before closing this chapter, I would like to address one final issue. Note that AgrP in German is a head-final projection, something which is not allowed under Kayne’s LCA. Although nothing forces me to adopt Kayne’s hypothesis, a question that is left open is why inflection-related movement is leftward in VO languages. Likewise, verb second is by definition a leftward movement in both VO and OV languages. Of course, one could stipulate that functional projections are head-initial by default (which can only be overridden in certain cases), but a more fundamental answer can be given. Ackema & Neeleman (1998) note the paradox that, on the one hand, mirror image data suggest that syntax is symmetric, whereas verb movement data on the other hand seem to indicate that syntax has an asymmetric property. As a way out they suggest that

30 Of course, there are mirror image effects beyond PP-extraposition in Dutch, as noted by Ackema & Neeleman. In French, postnominal adjectives appear in the opposite order of the prenominal adjectives in English. In Tagalog, where adjectives can appear on either side of the noun, similar mirror image effects can be witnessed within one
V to I movement

syntax itself is symmetric and that the movement asymmetry is a consequence of universal parsing strategies. Crucial are the following two more or less standard assumptions about the human parser:

(71)  
   a. The parser can only postulate a trace after having encountered an antecedent  
   b. The parser cannot destroy already established information in a given parse

The reasoning goes as follows. In a VO language rightward verb movement (either V to I or verb second) would cross the object. In an OV language like Dutch, PPs can follow the verb's base position. A verb movement operation to the right implies moving the verb across this PP. Generalizing over these two cases, we can say that the structure that the parser has to build is the one in (72), where YP coincides with a DP-object or PP, depending on the language in question:

(72)

\[
\begin{array}{c}
  \text{XP} \\
  \text{YP} \\
  \text{tP} \\
  \text{t} \\
  \text{t'} \\
  \text{V'} \\
  \text{V} \\
\end{array}
\]

Note, however, that the parser must build this structure on the basis of the following linear string:

(73)  

\[
\text{XP YP V}
\]

Given the assumption that no trace can be postulated until the antecedent is parsed, the trace and its projection can only be construed once V is encountered. This implies that at the point that YP is parsed, the parser has no choice but to analyze this constituent as a left branch. In (72), however, which is the structure that the parser is hypothesizing when it encounters the verb, YP is a right branch. Hence, a structure involving a rightward verb movement across a dependent category (DP-object or PP) can only be built by destroying part of the already established information. Under the assumption

and the same language. More generally, according to Greenberg (1966) the order of determiners, numeral, and adjectives in languages where these element follow the noun is the mirror image of the order found in languages where they precede the noun.
that a parser is not allowed to do that (cf. 70b), the analysis in (72) is ruled out: Although the grammar might allow such structures, the parser does not.\footnote{1}

In short, Ackema & Neeleman provide an answer to the question of why verb movement is generally leftward. At the same time, their analysis does not rule out the specific case of the head-final AgrP in German. The point is that no verb movement takes place and no trace has to be postulated after the head of AgrP has been parsed.

5. Conclusion

In this chapter, it was argued that the correlation between rich inflection and overt verb movement reduces to the theta component. Rich inflection is argumental and must be associated with the external theta role. Verb movement is triggered because the external theta role is a property of VP rather than V. Hence, verb movement is required in order to bring Agr into a position within VP’s predicational domain. After movement, Agr is projected and becomes the sister of VP: Assignment of the external theta role can take place straightforwardly. Verb movement is overt since it is a structure-creating operation. Under the independently needed assumption that no projections may be built after the structure has branched off to PF, AgrP must be projected in overt syntax, even though LF is ultimately responsible for the movement. It was shown that there are reasons to believe that the analysis can be successfully extended to the OV languages.\footnote{2}

\footnote{1} Although DP objects in Dutch and German are to the left of the verb’s base position, object clauses are typically to the right. Under the assumption that these clauses are right-adjoined to some category lower than the position to which the verb moves in verb second constructions, similar problems for the parser will ensue if V to C were to the right in OV languages. Hence, verb second invariably involves a verb movement operation that is leftward.

\footnote{2} Recall from chapter 1 that infinitives seem to move in Italian. For Icelandic, it has been convincingly shown that infinitives move in control complements, in contrast to ECM and raising contexts (Hornstein 1989, Johnson & Vikner 1998). Johnson & Vikner claim that this movement takes place in order to protect PRO from being
Despite the large empirical domain captured by the analysis, a few counterexamples exist. It was suggested that the languages showing V to I despite being poorly inflected for agreement, have the operation as a remnant of earlier stages: Although acquirers of these languages may note that the agreement paradigm does not trigger verb movement, they might be forced to adopt such a rule, given the input data on which they base their grammar.