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Abstract

This Optimality Theory-based account of verb movement differences between Middle English, (modern) English, and (modern) Danish is an example of how Optimality Theory offers a way out of the strait jacket of binary parameters: There are other alternatives concerning e.g. finite verbs than for a language either to have V°-to-I° movement or not to have it.

Based on an analysis of the different positions of the finite main verb in English and Danish (and some additional related languages) in terms of V°-to-I° movement, my talk will start by linking these positional differences to the presence (or absence) of inflection for person in all verbal tenses.

It is then shown that modern English is not just different from Danish but actually unique in that it has two different types of finite verbs with different syntax. It is further argued that these two verb types should be taken to be thematic and nont thematic verbs, rather than main and auxiliary verbs.

The talk will present a comprehensive analysis of the syntax of these two types of English finite verbs (also as compared to finite verbs in Danish and in Middle English) in terms of a set of violable (and potentially conflicting) constraints.

One such constraint is CHECK-DISTINCTIVE-PERSON. There is thus a reason to move a verb which is distinctively marked for person (e.g. a Middle English finite verb) to the functional head Pers°, namely to avoid violation of this checking constraint. There is no such reason to motivate movement of a verb whose person features are not distinctively marked (e.g. a modern English finite verb), because, irrespective of whether it moves to Pers° or not, it violates this constraint. This opens the door for a lower ranked constraint, e.g. STAY, to decide for or against such movement.

Language abbreviations

Af. = Afrikaans  
Da. = Danish  
Du. = Dutch  
En. = English  
Fa. = Faroese  
Fr. = French  
Fs. = Frisian  
Ge. = (Standard) German  
Ic. = Icelandic  
Yi. = Yiddish

Vikner: V-mvt & OT, p. 2
0. Introduction

0.1 Central ideas of Optimality Theory

Probably the major characteristic of optimality theory (cf. e.g. Prince & Smolensky 1993/2004, Grimshaw 1997, Kager 1999, Samek-Lodovici 2007, and the papers in Legendre et al. 2001) is that constraints are taken to be relative (“soft”) rather than absolute (“hard”):

(1) a. **ABSOLUTE**: “If a sentence violates constraint C, it is ungrammatical”

    b. **RELATIVE**: “That a sentence violates constraint C may be bad, but not as bad as if it had violated constraint B, which again is less bad than if it would violate constraint A”

In other words: Although there is a price to be paid every time a constraint is violated, the price is not always the grammaticality of the sentence in question.

Violability is one of four ideas central to optimality theory (from Grimshaw 1997:373):

(2) a. **Constraints may be violated**

    b. **Constraints are ordered in a hierarchy**
       (A grammar is a particular ordering of constraints.)

    c. **Constraints are universal**
       (In all languages, the same constraints apply, except that they are ordered differently from language to language. Language variation is variation in the constraint hierarchy.)

    d. **Only the optimal candidate is grammatical**
       (All non-optimal candidates are ungrammatical. The optimal candidate of two is the one with the smallest violation of the highest constraint on which the two candidates differ.

The hierarchical ordering of constraints means that a violation of constraint A is more “expensive” than a violation of constraint B. If a particular candidate violates constraint A and another candidate violates constraint B, the second is less expensive and thus more optimal. If there are no other candidates, the candidate that violates only constraint B is optimal and therefore grammatical. If there is a candidate that violates neither A nor B but only e.g. constraint Z, this candidate will be even less expensive, hence optimal and grammatical.

That not all constraints are respected on the surface (“surface-true”) makes it possible for constraints to conflict with each other. This again makes it possible to formulate more general (universal) constraints than is otherwise possible in generative grammar.

In Grimshaw’s (1997:399) words: “Maximally general principles will inevitably conflict. The alternative is to formulate more specific principles which are designed never to conflict, and one price is generality. Only by allowing constraints to conflict can we avoid building the effects of every principle into all of the others that it potentially conflicts with.”
0.2 Verb Second (V2)

In all Germanic languages with the exception of Modern English, all main clauses have a special property, namely that they are "verb second" (V2), which means that the finite verb occupies the second position in the clause, irrespective of which constituent occupies the first position:

(3) Verb second = V2:

<table>
<thead>
<tr>
<th>one constituent</th>
<th>the finite verb</th>
<th>the rest of the clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Danish, Icelandic and German (and Dutch) are thus V2, whereas English and French are not:

<table>
<thead>
<tr>
<th>(4)</th>
<th>CP-Spec</th>
<th>C°</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Da. Den her bog</td>
<td>har</td>
<td>Peter læst</td>
<td></td>
</tr>
<tr>
<td>b. Ic. Þessa bók</td>
<td>hefur</td>
<td>Pétur lesið</td>
<td></td>
</tr>
<tr>
<td>c. Ge. Dieses Buch</td>
<td>hat</td>
<td>Peter gelesen</td>
<td></td>
</tr>
<tr>
<td>d. En. *This book</td>
<td>has</td>
<td>Peter read</td>
<td></td>
</tr>
<tr>
<td>e. Fr. *Ce livre</td>
<td>a-t-</td>
<td>il lu</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(5)</th>
<th>CP-Spec</th>
<th>C°</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Da. Nu</td>
<td>har</td>
<td>Peter læst den her bog</td>
<td></td>
</tr>
<tr>
<td>b. Ic. Nú</td>
<td>hefur</td>
<td>Pétur lesið þessa bók</td>
<td></td>
</tr>
<tr>
<td>c. Ge. Jetzt</td>
<td>hat</td>
<td>Peter dieses Buch gelesen</td>
<td></td>
</tr>
<tr>
<td>d. En. *Now</td>
<td>has</td>
<td>Peter read this book</td>
<td></td>
</tr>
<tr>
<td>e. Fr. *Maintenant</td>
<td>a-t-</td>
<td>il lu ce livre</td>
<td></td>
</tr>
</tbody>
</table>

V2 thus is the result of two movements: A maximal projection (e.g. PP, AdvP, DP) moves into CP-Spec (i.e. the 1st position) and the finite verb moves into C° (i.e. the 2nd position):

(6) CP

The idea is thus that the finite verb in V2 clauses occupies the same position that the complementiser (e.g. that, if, because) occupies in an embedded clause, namely C°:

<table>
<thead>
<tr>
<th>(7)</th>
<th>CP-Spec</th>
<th>C°</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. En. a. ...</td>
<td>that</td>
<td>the children have not seen this film</td>
<td></td>
</tr>
<tr>
<td>b. Only this film</td>
<td>have</td>
<td>the children _____ not seen ________</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(8)</th>
<th>CP-Spec</th>
<th>C°</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Da. a. ...</td>
<td>at</td>
<td>børnene har set denne film</td>
<td></td>
</tr>
<tr>
<td>b. Denne film</td>
<td>har</td>
<td>børnene ___ set ________</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(9)</th>
<th>CP-Spec</th>
<th>C°</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Ic. a. ...</td>
<td>að</td>
<td>börnin hafa séð þessa mynd</td>
<td></td>
</tr>
<tr>
<td>b. Pessa mynd</td>
<td>hafa</td>
<td>börnin ___ séð ___</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(10)</th>
<th>CP-Spec</th>
<th>C°</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Ge. a. ...</td>
<td>dass</td>
<td>die Kinder diesen Film gesehen haben</td>
<td></td>
</tr>
<tr>
<td>b. Diesen Film</td>
<td>haben</td>
<td>die Kinder _________ gesehen ______</td>
<td></td>
</tr>
</tbody>
</table>

Vikner: V-mvt & OT, p. 4
0.3 \( V^o \)-to-I\(^o \) movement

French is a language with what I will call \( V^o \)-to-I\(^o \) movement\(^{1} \) (recent textbooks call it \( V^o \)-to-T\(^o \) movement\(^{2} \), e.g. Roberts 2007:44, Radford 2009:44). This means that in French the finite verb moves from its position in \( V^o \) to a functional position further left, namely I\(^o \). This movement can be detected if there is a e.g. medial adverbial present, here *souvent*:

\[ (11) \]
\[
\begin{array}{c}
\text{Fr. a. Jean} \\
\text{mange souvent des tomates} \\
\text{Jean eats often tomatoes}
\end{array}
\]
\[
\begin{array}{c}
b. *Jean \\
souvent \\
mange \\
often \\
des tomates \\
tomatoes
\end{array}
\]

In other words, in French the finite verb is base-generated in one position, to the immediate left of the object, and then moved across the sentence adverbial into another position, to the immediate right of the subject.

In modern English and modern Danish, finite main verbs do not undergo \( V^o \)-to-I\(^o \) movement:

\[ (12) \]
\[
\begin{array}{c}
a. En. (If) John \\
\text{oftens} \\
\text{eats} \\
tomatoes
\end{array}
\]
\[
\begin{array}{c}
b. Da. Hvis Johan \\
\text{ofte} \\
\text{spiser} \\
tomater , ...
\end{array}
\]
\[
\begin{array}{c}
c. En. *(If) John \\
\text{eats} \\
often \\
tomatoes
\end{array}
\]
\[
\begin{array}{c}
d. Da. *Hvis Johan \\
\text{spiser} \\
\text{ofte} \\
tomater , ...
\end{array}
\]

Vikner: V-mvt & OT, p. 5
There are two main differences between V°-to-I° movement and V2:

1. V°-to-I° movement applies in all finite clauses, whereas V2 only applies in main clauses (and a few embedded clauses).

2. In a clause with V°-to-I° movement but without V2, (13a), the first element is the subject and the second element the finite verb. In a clause with V2, (13b), the second element is also the finite verb, but the first element can be any maximal projection:

(13) a. 

Chomsky (1995:222) says about the ability of constituents to move in the syntax: "Minimalist assumptions suggest that this property should be reduced to morphology-driven movement." This was the objective of Vikner (1997/1999), where V°-to-I° movement was linked to verbal inflectional morphology:

(14) An SVO-language has V°-to-I° movement if and only if person morphology is found in all tenses. 

The generalisation in (14) accounts for the above difference in the positions of finite main verbs, assuming a clause structure as in (12) and (11) above.

Vikner: V-mvt & OT, p. 6
Among all the Romance and Germanic SVO-languages, the only languages where inflectional differences for person are not found in every tense are modern English and four modern Scandinavian languages: Danish, Faroese, Norwegian, and Swedish, cf. (19) and (20) below.

These five languages are also the only SVO-languages without V°-to-I° movement, cf. (15) and (16) below.

- Which languages have V°-to-I° movement?

Icelandic, Yiddish, and French all have V°-to-I° movement:

<table>
<thead>
<tr>
<th></th>
<th>C°</th>
<th>IPsp</th>
<th>I°</th>
<th>AdvP</th>
<th>V°</th>
<th>DP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. En.</td>
<td>*That John eats often ______ tomatoes             (surprises most people)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Da.</td>
<td>*At Johan spiser ofte ______ tomater             (øverrasker de fleste)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Fa.</td>
<td>*At Jón etur ofta ______ tomatir                 (kemur óvart á tey flestu)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Ic.</td>
<td>Að Jón borðar oft ______ tómata                  (kemur flestum á óvart)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Yi.</td>
<td>Az Jonas est oft ______ pomidorn                  (iz a khidesh far alemen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Fr.</td>
<td>Que Jean mange souvent ______ des tomates         (surprend tout le monde)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

English, Danish, and Faroese (and also Norwegian and Swedish) all lack V°-to-I° movement:

<table>
<thead>
<tr>
<th></th>
<th>C°</th>
<th>IPsp</th>
<th>I°</th>
<th>AdvP</th>
<th>V°</th>
<th>DP</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. En.</td>
<td>That John often eats tomatoes                  (surprises most people)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Da.</td>
<td>At Johan ofte spiser tomater                  (øverrasker de fleste)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Fa.</td>
<td>At Jón oft etur tomatir                       (kemur óvart á tey flestu)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Ic.</td>
<td>Að Jón oft borðar tómata                       (kemur flestum á óvart)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Yi.</td>
<td>Az Jonas oft est pomidorn                      (iz a khidesh far alemen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Fr.</td>
<td>Que Jean mange souvent des tomates             (surprend tout le monde)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Furthermore, the languages without V°-to-I° movement have all only recently lost V°-to-I° movement. In English and in Danish, this change took place in the 15th and 16th centuries, Middle English and Old Danish were like French:

(17) a. ME. He swore that he talkyd neuer t wyth no man ...  
    b. En. He swore that he never talked to anybody ...

(17a): 1460 William Paston I, Letter to John Paston I, 02.05.1460, Davis 1971:164

(18) a. OD. ... um thrællæn takær ey atær gen
    b. Da. ... hvis trællen ikke slår igen

... if slave-the (hits) not (hits) (back) again

(ca. 1300, Valdemars sjællandske lov, yngre redaktion, chap. 86, Uldaler & Wellejus 1968:54, l. 21-22)

Vikner: V-mvt & OT, p. 7
Which languages have person morphology in all tenses?

English, early modern English, Danish, and Faroese do not. Middle English, French, Yiddish, and Icelandic do.

<table>
<thead>
<tr>
<th>(19)</th>
<th>English (20th C.)</th>
<th>Early modern English (16th C.)</th>
<th>Middle English (14/15th C.)</th>
<th>French (20th C.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infinitive</td>
<td>hear</td>
<td>hear(en)</td>
<td>here(n)</td>
<td>entendre</td>
</tr>
<tr>
<td>Imperative</td>
<td>Singular</td>
<td>hear</td>
<td>hear</td>
<td>her(e)</td>
</tr>
<tr>
<td>Plural</td>
<td>hear</td>
<td>hear</td>
<td>hereth</td>
<td>entend</td>
</tr>
<tr>
<td>Participles</td>
<td>Present</td>
<td>hearing</td>
<td>hearing</td>
<td>hering</td>
</tr>
<tr>
<td>Past</td>
<td>heard</td>
<td>heard</td>
<td>herd</td>
<td>entendu</td>
</tr>
<tr>
<td>Present</td>
<td>1st singular</td>
<td>I hear</td>
<td>I hear</td>
<td>I here</td>
</tr>
<tr>
<td>2nd singular</td>
<td>thou hear</td>
<td>thou hearst</td>
<td>thou herest</td>
<td>tu entend</td>
</tr>
<tr>
<td>3rd singular</td>
<td>he hears</td>
<td>he heareth</td>
<td>he hereth</td>
<td>il entend</td>
</tr>
<tr>
<td>1st plural</td>
<td>we hear</td>
<td>we hear(en)</td>
<td>we here(n)</td>
<td>nous entendons</td>
</tr>
<tr>
<td>2nd plural</td>
<td>you hear</td>
<td>you hear(en)</td>
<td>ye here(n)</td>
<td>vous entendez</td>
</tr>
<tr>
<td>3rd plural</td>
<td>they hear</td>
<td>they hear(en)</td>
<td>þei here(n)</td>
<td>ils entendent</td>
</tr>
<tr>
<td>Different forms</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4 (1s=2s=3s)</td>
</tr>
<tr>
<td>Past</td>
<td>1st singular</td>
<td>hear-d</td>
<td>hear-d</td>
<td>her-d-e</td>
</tr>
<tr>
<td>2nd singular</td>
<td>hear-d</td>
<td>hear-d-[st]</td>
<td>her-d-est</td>
<td>entend-a-ais</td>
</tr>
<tr>
<td>3rd singular</td>
<td>hear-d</td>
<td>hear-d</td>
<td>her-d-e</td>
<td>entend-a-ait</td>
</tr>
<tr>
<td>1st plural</td>
<td>hear-d</td>
<td>hear-d-[en]</td>
<td>her-d-e(n)</td>
<td>entend-i-ons</td>
</tr>
<tr>
<td>2nd plural</td>
<td>hear-d</td>
<td>hear-d-[en]</td>
<td>her-d-e(n)</td>
<td>entend-i-ez</td>
</tr>
<tr>
<td>3rd plural</td>
<td>hear-d</td>
<td>hear-d-[en]</td>
<td>her-d-e(n)</td>
<td>entend-aient</td>
</tr>
<tr>
<td>Different forms</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3 (1/2s=3s=3p)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(20)</th>
<th>Danish</th>
<th>Faroese</th>
<th>Yiddish</th>
<th>Icelandic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infinitive</td>
<td>høre</td>
<td>hoyra</td>
<td>hern</td>
<td>heyra</td>
</tr>
<tr>
<td>Imperative</td>
<td>Singular</td>
<td>hør</td>
<td>hoyer</td>
<td>her</td>
</tr>
<tr>
<td>Plural</td>
<td>hør</td>
<td>hoyr(ið)</td>
<td>hert</td>
<td>heyrið</td>
</tr>
<tr>
<td>Participles</td>
<td>Present</td>
<td>hørende</td>
<td>hoyrandi</td>
<td>herndik</td>
</tr>
<tr>
<td>Past</td>
<td>hørt</td>
<td>hoyrt</td>
<td>gehert</td>
<td>heyrt</td>
</tr>
<tr>
<td>Present</td>
<td>1st singular</td>
<td>jeg hører</td>
<td>eg hoyri</td>
<td>ikh her</td>
</tr>
<tr>
<td>2nd singular</td>
<td>du hører</td>
<td>tú hoyrir</td>
<td>du herst</td>
<td>þu heyrir</td>
</tr>
<tr>
<td>3rd singular</td>
<td>han hører</td>
<td>hann hoyrir</td>
<td>er hert</td>
<td>hann heyrir</td>
</tr>
<tr>
<td>1st plural</td>
<td>vi hører</td>
<td>vit hoyra</td>
<td>mir hern</td>
<td>við heyrum</td>
</tr>
<tr>
<td>2nd plural</td>
<td>I hører</td>
<td>tit hoyra</td>
<td>ir hert</td>
<td>þið heyrið</td>
</tr>
<tr>
<td>3rd plural</td>
<td>de hører</td>
<td>tey hoyra</td>
<td>zey hern</td>
<td>þeir heyra</td>
</tr>
<tr>
<td>Different forms</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Past</td>
<td>1st singular</td>
<td>hør-te</td>
<td>hoyr-d-i</td>
<td>---</td>
</tr>
<tr>
<td>2nd singular</td>
<td>hør-te</td>
<td>hoyr-d-i</td>
<td>---</td>
<td>heyr-ð-ir</td>
</tr>
<tr>
<td>3rd singular</td>
<td>hør-te</td>
<td>hoyr-d-i</td>
<td>---</td>
<td>heyr-ð-i</td>
</tr>
<tr>
<td>1st plural</td>
<td>hør-te</td>
<td>hoyr-d-u</td>
<td>---</td>
<td>heyr-ð-um</td>
</tr>
<tr>
<td>2nd plural</td>
<td>hør-te</td>
<td>hoyr-d-u</td>
<td>---</td>
<td>heyr-ð-uð</td>
</tr>
<tr>
<td>3rd plural</td>
<td>hør-te</td>
<td>hoyr-d-u</td>
<td>---</td>
<td>heyr-ð-u</td>
</tr>
<tr>
<td>Different forms</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

Vikner: V-mvt & OT, p. 8
Many analyses have been suggested which argue that there can be no connection whatsoever between verbal inflection and V°-to-I° movement, e.g. Sprouse (1998), Alexiadou & Fanselow (2000). Such analyses have no expectations at all as to whether languages could exist that have both rich inflection and V°-to-I° movement, or just one or just the other or neither, nor as to which languages belong to which categories.

Alexiadou & Fanselow (2000) suggest the ”historical development” as a reason for why V°-to-I° movement is lost when it is, but as this is not tied to anything related to inflection, the question why this historical development only occurs in the languages with weak inflection remains unanswered.

I agree with Alexiadou & Fanselow (2000:5.3, 2002:239) that in a language with V°-to-I° movement, stylistic fronting makes sentences possible that can be interpreted as not having V°-to-I° movement (Vikner 1995:161). However, the question remains why Danish children took this to imply that their language had no V°-to-I° movement whereas Icelandic children didn’t (and still don’t)? Why could it not have been the opposite, i.e. why wasn’t V°-to-I° movement lost in Icelandic but retained in Danish? The account suggested above has an answer to this question, but to Alexiadou & Fanselow (2000) and also to Sprouse (1998), it has to remain a coincidence.

In a later version of their paper, Alexiadou & Fanselow (2002:240) do suggest a link, namely one between rich inflection and stylistic fronting, thus opening a back door to having a link between rich inflection and V°-to-I° movement.

Another suggestion of a weaker link between verbal inflection and V°-to-I° movement than the one suggested here can be found in Bobaljik (2002).

For more recent criticisms and alternatives, both on theoretical and empirical grounds, see e.g. Angantýsson 2007, Wiklund et al. 2007, and Holmberg 2010 and references there.
0.4 VO/OV

For most Germanic languages, it is relatively easy to determine whether they have verb-object (VO) or object-verb (OV) as the basic order, in that they have clear preferences for either the VO-order in (21a-c) or the OV-order in (21d-f):

<table>
<thead>
<tr>
<th></th>
<th>Verb</th>
<th>Object</th>
<th>(VO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Jeg har</td>
<td>læst</td>
<td>bogen</td>
<td>(Danish)</td>
</tr>
<tr>
<td>b. Ég hef</td>
<td>lesið</td>
<td>bókina</td>
<td>(Icelandic)</td>
</tr>
<tr>
<td>c. I have</td>
<td>read</td>
<td>the book</td>
<td>(English)</td>
</tr>
<tr>
<td></td>
<td>Object</td>
<td>Verb</td>
<td>(OV)</td>
</tr>
<tr>
<td>d. Ik heb</td>
<td>het boek</td>
<td>gelezen</td>
<td>(Dutch)</td>
</tr>
<tr>
<td>e. Ik ha</td>
<td>it boekje</td>
<td>lézen</td>
<td>(Frisian)</td>
</tr>
<tr>
<td>f. Ich habe</td>
<td>das Buch</td>
<td>gelesen</td>
<td>(German)</td>
</tr>
</tbody>
</table>

(This is, of course, a strong simplification, cf. e.g. Vikner 2001a:19-124, 2003, 2005, and references there.)

0.5 Summary of V2, V°-to-I° movement and VO/OV

This table summarises the language variation regarding the properties discussed above, i.e. verb second (V2), V°-to-I° movement and VO- vs. OV-languages:

<table>
<thead>
<tr>
<th></th>
<th>V2 (section 0.2)</th>
<th>V°-to-I° (section 0.3)</th>
<th>VO or OV (section 0.4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. French</td>
<td>-</td>
<td>+</td>
<td>VO</td>
</tr>
<tr>
<td>b. Middle English</td>
<td>-</td>
<td>+</td>
<td>VO</td>
</tr>
<tr>
<td>c. English</td>
<td>-</td>
<td>-</td>
<td>VO</td>
</tr>
<tr>
<td>d. Icelandic</td>
<td>+</td>
<td>+</td>
<td>VO</td>
</tr>
<tr>
<td>e. Faroese</td>
<td>+</td>
<td>-</td>
<td>VO</td>
</tr>
<tr>
<td>f. Danish</td>
<td>+</td>
<td>-</td>
<td>VO</td>
</tr>
<tr>
<td>g. Norwegian</td>
<td>+</td>
<td>-</td>
<td>VO</td>
</tr>
<tr>
<td>h. Swedish</td>
<td>+</td>
<td>-</td>
<td>VO</td>
</tr>
<tr>
<td>i. Yiddish</td>
<td>+</td>
<td>+</td>
<td>OV (VO) 1</td>
</tr>
<tr>
<td>j. German</td>
<td>+</td>
<td>- (+) 2</td>
<td>OV</td>
</tr>
<tr>
<td>k. Swabian</td>
<td>+</td>
<td>- (+) 2</td>
<td>OV</td>
</tr>
<tr>
<td>l. Swiss German</td>
<td>+</td>
<td>- (+) 2</td>
<td>OV</td>
</tr>
<tr>
<td>m. Frisian</td>
<td>+</td>
<td>- (+) 2</td>
<td>OV</td>
</tr>
<tr>
<td>n. West Flemish</td>
<td>+</td>
<td>- (+) 2</td>
<td>OV</td>
</tr>
<tr>
<td>o. Dutch</td>
<td>+</td>
<td>-</td>
<td>OV</td>
</tr>
<tr>
<td>p. Afrikaans</td>
<td>+</td>
<td>-</td>
<td>OV</td>
</tr>
</tbody>
</table>

Notes:

Vikner: V-mvt & OT, p. 10
1. Constraints

1.1 Constraints related to richness of inflection

Assume an internal structure of a finite verb as in (23), which reflects a basic clause structure as in (24) (which is equivalent to e.g. the clause structure suggested by Belletti 1990: 28, (7), with "person" replacing "agreement"):

(23) [[[ verb stem ] tense affix ] person affix ]

(24) CP
    └─ C°
    └─ PersP
        └─ Pers°
        │   └─ TenseP
        │       └─ Tense°
        │           └─ VP
        │               └─ V°

I assume that Pers° and Tense° together correspond to what I refer to as I° (although recent textbooks use T°, e.g. Roberts 2007:44, Radford 2009:44). As for PersP containing TenseP rather than vice versa, I follow e.g. Sigurðsson & Holmberg (2008:258) and references there.

I further assume that medial adverbials are adjoined to VP. This means that whereas it can be told (from its position relative to a medial adverbial) whether a verb is in V° or in Tense°/Pers°, it has no empirical consequences whether a verb is in Tense° or in Pers°. I shall therefore refer to I° rather than to Tense°/Pers° in connection with discussion of data.

What counts (at least for the VO-languages) is not whether or not a feature is marked but whether or not it is distinctively marked. An inflectional feature is distinctively marked if it is possible to obtain a different form by varying the feature in question (e.g. person) with respect to the X° that it attaches to (e.g. Tense°) irrespective of the actual value of the latter. In other words, inflection for person is distinctively marked with respect to inflection for tense if regardless of which tense is chosen, a different verb form may be obtained by changing only the feature specification for person.

This formulation of distinctiveness forms part of three of my constraints in the OT account to be outlined below. Two of these constraints deal with morphological realisation, whereas the third one is of a more syntactic nature:

(25) **Pers-Not-Dist** = Features for person are not distinctively marked

A subcase of a more general constraint "features are not distinctively marked", which again is a subcase of "linguistic expressions should contain as little material as possible".

(26) **Pers-Dist** = Features for person are distinctively marked

A subcase of a more general constraint "features are distinctively marked", which again is a subcase of "linguistic expressions should convey as much information as possible".

(27) **Check-Dist-Pers** = Pers° checks distinctively marked person features

Every clause should contain a head that is distinctively marked for person, and whose chain includes both Pers° and V°. In other words, Pers° should contain a head (or the trace of a head) that is distinctively marked for the verbal feature Person.

*Vikner: V-mvt & OT, p. 11*
In principle, eight different constraint profiles should be possible with three constraints if we only distinguish between whether a constraint is violated or not. Five of these eight are impossible, however, leaving only three possibilities, namely

- (28a): strong (i.e. distinctively marked) features which are checked,
- (28b): strong features which are not checked, and
- (28c): weak features (i.e. features which are not distinctively marked).

<table>
<thead>
<tr>
<th>(28)</th>
<th>Pers Dist</th>
<th>Pers Not Dist</th>
<th>Check Dist</th>
<th>Check Pers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POSSIBLE:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. strong features which are checked</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. strong features which are not checked</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. weak features</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td><strong>IMPOSSIBLE:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. weak features which do not violate checking</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. features both weak and strong</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. features both weak and strong</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>g. features neither weak nor strong</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. features neither weak nor strong</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

(The other possibilities either require that non-distinctive (“weak”) features do not violate checking, (28d), which is impossible, as the checking constraint, (27), can only be observed by a verb with distinctive (“strong”) features, or they require that features are either both distinctive and non-distinctive, (28e,f), or neither distinctive or non-distinctive, (28g,h), both of which are also impossible.)

By positing both Pers-Not-Dist and Pers-Dist, this analysis is compatible with the view that constraints from different modules should not interact directly. In other words, constraints from different modules should not be able to rerank, cf. that all that is needed is that the morphological constraint Pers-Dist is reranked with respect to Pers-Not-Dist, not with respect to any of the syntactic constraints. This amounts to saying that the syntax has to work with what the morphology (or the lexicon) provides. See also e.g. Müller (1997), who suggests not only that there is such compartmentalisation, but also that there is inherent ranking between some components.

Assuming that it is not the individual morphological and syntactic constraints that are ranked with respect to each other, but all of morphology and all of syntax that is ranked, we have the following two options:

(29) a. Morphology >> Syntax ≈ “If there is rich morphology, then move the verb”
    b. Syntax >> Morphology ≈ “If the verb moves, then make the morphology rich”

I take (29b) to be impossible: The language-acquiring child has to lexically acquire the inflectional morphology of her native language morpheme by morpheme, she cannot simply deduce the existence of “rich” morphology. If morphological richness could be caused by such an inference, we would expect the inflectional morphemes to vary much more from speaker to speaker than they actually do. Furthermore, under (29b), loss of V°-to-I° movement should be a potential cause of loss of inflectional morphology. This would predict much more abrupt losses to be possible than what you might call “normal phonetic erosion”. However, none of the Germanic languages which have lost V°-to-I° movement show any such abrupt losses of inflectional morphology.

Hence the only viable alternatives to (29a) would seem to be either no connection at all between V°-to-I° movement and verbal inflectional morphology or only a very limited connection between them (but see also the references at the end of section 0.3 above).

Vikner: V-mvt & OT, p. 12
1.2 Constraints related to directionality

The second type of constraints to be discussed are those related to directionality, i.e. the ones responsible for the difference between OV- and VO-languages.

I will assume that only a lexical X° (i.e. V°, P°, N°, Adj°/Adv°) can be right OR left of its XP-sister. Functional X°s on the other hand are universally left of their XP-sisters (as suggested e.g. in Kiparsky 1996:169). Assuming that specifiers are always left of their X'-sister, the only possible source of variation in the underlying structures is thus the order of lexical heads and their complements:

(30) CP
   | C°  PersP
   | | Pers° TenseP
   | | | Tense° VP
   | | | | V° XP
   as in (42a-h)
i.e. VO

(31) CP
   | C°  PersP
   | | Pers° TenseP
   | | | Tense° VP
   | | | | XP V°
   as in (42i-p)
i.e. OV


When examined closely, the variation in directionality actually found turns out to be much more constrained than might have been expected. Given four lexical categories, V°, P°, N°, and Adj°/Adv°, sixteen combinations are possible in theory, since each of these four categories may take its complement either to the left or to the right, independently of the other three categories. However, the combinations actually attested are much fewer (see also Haider 1993:39-43):

(32) Variation found in base order of lexical X° and their complements:

<table>
<thead>
<tr>
<th></th>
<th>N°</th>
<th>P°</th>
<th>V°</th>
<th>Adj°</th>
</tr>
</thead>
<tbody>
<tr>
<td>left</td>
<td>left</td>
<td>left</td>
<td>left</td>
<td>left</td>
</tr>
<tr>
<td>left</td>
<td>left</td>
<td>RIGHT</td>
<td>RIGHT</td>
<td></td>
</tr>
<tr>
<td>RIGHT</td>
<td>RIGHT</td>
<td>RIGHT</td>
<td>RIGHT</td>
<td></td>
</tr>
</tbody>
</table>

e.g. English, ...
e.g. German, ...
e.g. Turkish, ...

The “English type” of languages also includes all the Scandinavian and all the Romance languages.

Vikner: V-mvt & OT, p. 13
As argued in Vikner (2001a:19-124, 2003, 2005), the “German type” of languages also includes all other continental Germanic languages, e.g. Yiddish, Dutch, Afrikaans, West Flemish, Frisian, Swabian, and the three Swiss German variants from Sankt Gallen, Zürich, and Bern.

Finally, the “Turkish type” of languages presumably includes a number of different languages, e.g. Basque, Bengali, Hindi, Japanese, Kannada, Korean, Latin, and Quechua.

I propose to derive the (limited) variation in (32) above by assuming three relevant constraints, X°-Left, Pred-Right, and X°-Right, which are based on Grimshaw’s (2001, 2006) Head-Left and Head-Right. If it is assumed that the constraints in (33)-(35) apply to phonetically realised heads and their traces, the typology in (32) is predicted:

(33) X°-Left violated by any head which is right of its XP-sister
(34) Pred-Right violated by any V° or Adj° which is left of its XP-sister
(35) X°-Right violated by any head which is left of its XP-sister

Although there are six possible rankings of these constraints, there are actually only three different possible outcomes, corresponding to the three patterns in (32) above:

(36) a. X°-Left > > Pred-Right > > X°-Right → left: N°/P°/V°/Adj°
    b. X°-Left > > X°-Right > > Pred-Right → left: N°/P°/V°/Adj°
    c. Pred-Right > > X°-Left > > X°-Right → left: N°/P° AND right: V°/Adj°
    d. Pred-Right > > X°-Right > > X°-Left → right: N°/P°/V°/Adj°
    e. X°-Right > > X°-Left > > Pred-Right → right: N°/P°/V°/Adj°
    f. X°-Right > > Pred-Right > > X°-Left → right: N°/P°/V°/Adj°

It might seem counterintuitive also to have traces count for alignment constraints like the ones in (33)-(35), but cf. that e.g. Chomsky (1993:35 = 1995:202) considers a trace to be an unpronounced copy of the moved constituent.

By Pred-Right, I understand a constraint Predicate-X°-Right, which only applies to chains whose highest link is phonetically realised and which include a V° or a Adj°. It thus does not apply e.g. to a(n auxiliary) verb that is not inserted under V° (nor does it apply to nouns or prepositions).

In (56) in section 4. below, I will introduce a further constraint, Obligatory Heads, which is violated by every completely empty X° (as opposed to an X° containing a trace). This constraint also plays a role in determining where X°s may be.
The situation with respect to the positioning of heads can now be summarised as follows:

(37) A functional head may
   a. be radically empty, in which case it violates **Obligatory Heads**, cf. (56) below.
   b. contain only a feature, e.g. Pers° and Tense°, but no phonetic material, in which case it violates none of **Obligatory Heads**, **Pred-Right**, **X°-Right**, **X°-Left**.
   c. contain phonetic material (or a trace thereof), in which case it violates **X°-Right** and possibly also **Pred-Right**. (The generator, GEN, only generates candidates where all non-lexical heads are on the left).

(38) A lexical head must
   a. not be radically empty (GEN, due to the definition of a lexical head).
   b. not contain only a feature (GEN, due to the definition of a lexical head).
   c. contain phonetic material (or a trace thereof), in which case it violates either **X°-Left** or **X°-Right** and potentially also **Pred-Right**.

Because non-lexical heads (i.e. all possible landing site heads) are always to the left of their XP-sister (GEN forces all non-lexical heads to be on the left), every step of every movement of a verb or an adjective causes an additional violation of **Pred-Right** and **X°-Right**, but no further violations of **X°-Left**. **Pred-Right** and **X°-Right** are thus also constraints on movement (cf. the function of the constraint **Stay** in other OT-analyses).

For the same reason, every step of every movement of a verb inserted directly under a functional head causes an additional violation of **X°-Right**, but not one of **Pred-Right**: Only chains which include a **V°** or an **Adj°** count for **Pred-Right**. This will be important when considering auxiliary verbs in English in section 5 below).

2. Embedded clauses: V°-to-I° movement and VO vs. OV

The first actual examples to be considered here are embedded clauses (of a kind where main clause word order is not possible), e.g. embedded questions:

(39) a. En. ... if she really **saw** the film VO, -V-I
    b. Da. ... om hun virkelig **så** filmen VO, -V-I
    c. Fa. ... um hon virkuliga **så** filmin VO, -V-I

(40) a. Ic. ... hvort hún **så** áreiðanlega myndina VO, +V-I
    b. Fr. ... si elle **voyaït** en effet le film VO, +V-I
    c. Yi. ... oyb zi **zet** take dem film OV, +V-I
    ... if she **saw** really the film

(41) a. Af. ... of sy die rolprent werklik **sien** OV, -V-I
    b. Du. ... of ze de film werkelijk **zag** OV, -V-I
    c. Fs. ... oft se de film echt wol **seach** OV, -V-I
    d. Ge. ... ob sie den Film tatsächlich **sah** OV, -V-I
    ... if she the film really **saw**
Consider now the derivation of (39)-(41):

e.g. ... if she really saw the film (39a)
e.g. ... om hun virkelig så filmen (39b)
e.g. ... um hon virkuliga så filmin (39c)

(42) non-V2, finite main verb

<table>
<thead>
<tr>
<th>English/Danish/ Faroese: e</th>
<th>Pers Not Dist</th>
<th>Pers Dist</th>
<th>Chck Dist Pers</th>
<th>X° Left</th>
<th>Pred Right</th>
<th>X° Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. e e V DP +dist</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. e V t DP +dist</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. V t t DP +dist</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. V t t t DP +dist</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. e V DP -dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. e V t DP -dist</td>
<td>*</td>
<td>*</td>
<td>**!</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. V t t DP -dist</td>
<td>*</td>
<td>*</td>
<td>**!</td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. V t t t DP -dist</td>
<td>*</td>
<td>*</td>
<td><strong>!</strong></td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. e V DP t +dist</td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. e V t DP t +dist</td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. V t DP t +dist</td>
<td>*!</td>
<td>*</td>
<td><strong>!</strong></td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. V t t DP t +dist</td>
<td>*!</td>
<td>*</td>
<td><strong>!</strong></td>
<td>**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. e e DP V -dist</td>
<td>*</td>
<td>*</td>
<td>!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n. e V DP t -dist</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o. V t DP t -dist</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p. V t t DP t -dist</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- The finite verb occurs in V° in (42a,e,i,m), in Tense° in (42b,f,j,n), in Person° in (42c,g,k,o), and in C° in (42d,h,l,p).
- The finite verb is distinctively marked for person in (42a-d, i-l), but not in (42e-h, m-p).
- The base position of the main verb precedes its complement in (42a-h), and follow its complement in (42i-p).
- * marks a constraint violation, and *! mark a fatal constraint violation (i.e. the constraint violation that caused this particular candidate to be less than optimal).
- The candidate with a ➪ in (42), i.e. (42e), is the optimal one (for technical reasons, ➪ replaces the pointing finger).
- The candidates with a ◄ in (42), i.e. (42a,c,i,k,m), are potential winners, i.e. constraint rankings are possible under which each of these would be optimal.
- The candidates which do not have any ◄ or ➪ in (42), i.e. (42b,d,f,g,h,j,l,n,o,p), are "eternal losers", they could never win regardless of how the constraints were ranked. For each of these losers, there is at least one potential winner which will always be more optimal, regardless of the ranking of the constraints. For e.g. (42b), this potential winner is (42a). Technically speaking, (42a) "harmonically bounds" (42b), e.g. it is because of (42a) that (42b) can never be the optimal candidate, (42a) will always be more harmonic, i.e. more optimal, than (42b).

Vikner: V-mvt & OT, p. 16
In the tableaux below for the same case in the different languages, (42’)-(47), it is thus only necessary to consider those six candidates which are not harmonically bounded.

This does not mean that the rest of the candidates are completely uninteresting, cf. e.g. that the fact that all candidates with the finite verb in Tense°, (42b,f,j,n), are harmonically bounded (by (42a,e,i,m) respectively) accounts for why the finite verb does not occur in Tense° in any of the languages under consideration: Nothing is gained by moving the verb from V° only to Tense°, it is always more optimal not to move the verb at all.

The comparative tableaux, (42’)-(47) below, are all abbreviated versions of (42), with different rankings. In (42’)-(47), the “eternal losers” have been filtered out, and the candidates have been kept constant, i.e. candidate (42e) = (42’e) = (43e) = … = (47e). For an overview of the ranking variations in (42’)-(47), see (52) below.

(42’) non-V2, finite main verb

e.g. … if she really saw the film (39a)
e.g. … om hun virkelig så filmen (39b)
e.g. … um hon virkuliga så filmmin (39c)

<table>
<thead>
<tr>
<th>English/Danish/</th>
<th>Faroese: e</th>
<th>Pers Not Dist</th>
<th>Pers Dist</th>
<th>Chck Dist Pers</th>
<th>X° Left</th>
<th>Pred Right</th>
<th>X° Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. e e V DP +dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. V t t DP +dist</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. e e V DP -dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>i. e e DP V +dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. V t DP t +dist</td>
<td>*</td>
<td>*</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. e e DP V -dist</td>
<td>*</td>
<td>*</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

English, Danish and Faroese are VO-languages without V°-to-I° movement. The absence of V°-to-I° movement is derived from the absence of distinctive person marking by having Pers-Not-Dist ranked above Pers-Dist, cf. (28c) above. Without distinctive person marking, there is no way of complying with Check-Dist-Person and so there is nothing to be gained by verb movement.

Consider now what happens when only one minor change is made, compared to (42)/(42’): Reversing the ranking of Pers-Not-Dist and Pers-Dist.

(43) non-V2, finite main verb

e.g. … hvort hún sæi áreiðanlega myndina (40a)
e.g. … si elle voyait en effet le film (40b)

<table>
<thead>
<tr>
<th>Icelandic/French: c</th>
<th>Pers Not Dist</th>
<th>Pers Dist</th>
<th>Chck Dist Pers</th>
<th>X° Left</th>
<th>Pred Right</th>
<th>X° Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. e e V DP +dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. V t t DP +dist</td>
<td>*</td>
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<td>***</td>
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<td></td>
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<tr>
<td>e. e e V DP -dist</td>
<td>*</td>
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<td>*</td>
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<tr>
<td>i. e e DP V +dist</td>
<td>*</td>
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<td></td>
</tr>
<tr>
<td>k. V t DP t +dist</td>
<td>*</td>
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<td>**</td>
<td>**</td>
<td></td>
<td></td>
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<tr>
<td>m. e e DP V -dist</td>
<td>*</td>
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<td></td>
</tr>
</tbody>
</table>

French and Icelandic are VO-languages with V°-to-I° movement. The presence of V°-to-I° movement is derived by having Pers-Dist ranked above Pers-Not-Dist, cf. (28a) above. As it is now possible to comply with Check-Dist-Person, there is something to be gained by verb movement.

Vikner: V-mvt & OT, p. 17
Consider now what happens when a different minor change is made, compared to
\((42)/(42')\): Reversing the ranking of \(X^°-\text{Left}\) and \(\text{Pred-Right}\).

\[(44)\] non-V2, finite main verb

\[
\begin{array}{cccccc}
\text{Afrikaans/Dutch:} & m & \text{Pers} & \text{Pers} & \text{Chck} & \text{Pred} & \text{X}^° \\
\text{C}°\text{P}°\text{T}°[\text{VP}] & \text{Not} & \text{Dist} & \text{Dist} & \text{Pers} & \text{Left} & \text{Right} \\
\hline
\ast. & e & e & V & DP & +\text{dist} & \ast! & \ast & \ast \\
\ast. & e & e & V & DP & -\text{dist} & \ast & \ast & \ast \\
\ast. & e & e & V & DP & -\text{dist} & \ast & \ast & \ast \\
\ast. & e & e & V & DP & V & \ast! & \ast & \ast \\
\ast. & e & e & DP & V & +\text{dist} & \ast! & \ast & \ast \\
\ast. & e & e & DP & t & +\text{dist} & \ast! & \ast & \ast \\
\ast. & e & e & DP & V & -\text{dist} & \ast & \ast & \ast
\end{array}
\]

Afrikaans and Dutch are OV-languages without \(V^°\)-to-I° movement. As in English, Danish
and Faroese above, the absence of \(V^°\)-to-I° movement is derived by having \(\text{Pers-Not-Dist}\)
ranked above \(\text{Pers-Dist}\). Without distinctive person marking, there is no way of complying with
\(\text{Check-Dist-Person}\) and so there is nothing to be gained by verb movement.

The OV-property (for only verbs and adjectives) is derived by having \(\text{Pred-Right}\)
outrank \(X^°-\text{Left}\) which again outranks \(X^°-\text{Right}\), cf. (36c) in section 1.2 above.

Consider now what happens when both of the two minor changes from above apply at
once: Compared to (42) and (42'), the following tableau has reversed both the ranking of \(\text{Pers-Not-Dist}\)
and \(\text{Pers-Dist}\) and the ranking of \(X^°-\text{Left}\) and \(\text{Pred-Right}\):

\[(45)\] non-V2, finite main verb

\[
\begin{array}{cccccc}
\text{Yiddish:} & k & \text{Pers} & \text{Pers} & \text{Chck} & \text{Pred} & \text{X}^° \\
\text{C}°\text{P}°\text{T}°[\text{VP}] & \text{Dist} & \text{Dist} & \text{Pers} & \text{Left} & \text{Right} \\
\hline
\ast. & e & e & V & DP & +\text{dist} & \ast & \ast! & \ast & \ast \\
\ast. & e & e & V & DP & +\text{dist} & \ast & \ast! & \ast & \ast \\
\ast. & e & e & V & DP & -\text{dist} & \ast & \ast & \ast \\
\ast. & e & e & DP & V & \ast & \ast! & \ast & \ast \\
\ast. & e & e & DP & t & +\text{dist} & \ast & \ast! & \ast & \ast \\
\ast. & e & e & DP & V & -\text{dist} & \ast & \ast & \ast
\end{array}
\]

Yiddish is an OV-language with \(V^°\)-to-I° movement. The presence of \(V^°\)-to-I° movement is
derived by having \(\text{Pers-Dist}\) ranked above \(\text{Pers-Not-Dist}\), cf. (28a) above. As it is now possible
to comply with \(\text{Check-Dist-Person}\), there is something to be gained by verb movement.

The OV-property (for only verbs and adjectives) is derived by having \(\text{Pred-Right}\)
outrank \(X^°-\text{Left}\) which again outranks \(X^°-\text{Right}\), cf. (36c) above.

So far we have derived four language types by applying either none of the two
independent rerankings seen so far, or applying one of them, or the other one of them, or both
of them. This would be sufficient if we only had four language types to account for, and if we
had some independent support for these two possible rerankings being the only possible ones.

\textit{Vikner: V-mvt & OT, p. 18}
However, there are other kinds of possible rerankings, and one is having **Pred-Right** outrank not only **X°-Left** and **X°-Right** but also **Check-Dist-Person**. This is what we see in the following tableau of German and Frisian:

(46) non-V2, finite main verb

<table>
<thead>
<tr>
<th>German/Frisian: i</th>
<th>Pers</th>
<th>Pers</th>
<th>Pred</th>
<th>Chck</th>
<th>X°</th>
<th>X°</th>
</tr>
</thead>
<tbody>
<tr>
<td>C° P° T° [VP]</td>
<td>Dist</td>
<td>Not Dist</td>
<td>Right</td>
<td>Pers</td>
<td>Left</td>
<td>Right</td>
</tr>
<tr>
<td>a. e e V DP +dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. V t t DP +dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>e. e e V DP -dist</td>
<td>*</td>
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<td></td>
</tr>
</tbody>
</table>

German and Frisian are OV-languages without V°-to-I° movement, but as opposed to Dutch and Afrikaans, they do have distinctive inflection for person, which is why **Pers-Dist** is ranked above **Pers-Not-Dist**. Nevertheless there is no V°-to-I° movement, because **Pred-Right** outranks not only **X°-Left** and **X°-Right** but also **Check-Dist-Person**, which means that it is more important to stop even predicative heads from moving into functional heads (which would incur **Pred-Right** violations, because universally, functional heads are on the left) than it is to check distinct inflection for person, cf. (28b) in section 1.1 above.

The last possible optimal candidate, (42a) = (42’a) = (43a) = … = (47a), is optimal if a different reranking is made, such that **X°-Left** outranks **Pred-Right**, which again outranks **Check-Dist-Person**. (If **Check-Dist-Person** were to outrank **Pred-Right**, the result would be (47c), just as in (43) above).

(47) non-V2, finite main verb

<table>
<thead>
<tr>
<th>UNATTTESTED: a</th>
<th>Pers</th>
<th>Pers</th>
<th>X°</th>
<th>Pred</th>
<th>Chck</th>
<th>X°</th>
</tr>
</thead>
<tbody>
<tr>
<td>C° P° T° [VP]</td>
<td>Dist</td>
<td>Not Dist</td>
<td>Left</td>
<td>Right</td>
<td>Pers</td>
<td>Left</td>
</tr>
<tr>
<td>a. e e V DP +dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>c. V t t DP +dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
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<tr>
<td>e. e e V DP -dist</td>
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<td>*</td>
<td></td>
</tr>
<tr>
<td>i. e e DP V +dist</td>
<td>*</td>
<td>*</td>
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<td>*</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>k. V t t DP t +dist</td>
<td>*</td>
<td>*</td>
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<td>*</td>
<td>*</td>
<td>**</td>
</tr>
<tr>
<td>m. e e DP V -dist</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

This language type, which is not attested within the Germanic and Romance languages, would be a VO-language without V°-to-I° movement, and as opposed to English, Danish and Faroese, it would have distinctive inflection for person.

*Vikner: V-mvt & OT, p. 19*
In the discussion above, three direct consequences of pairwise rankings have become clear.

The first corollary is that whether a language has distinctive inflection for person or not depends on the ranking of the two morphological constraints:

(48) a. Pers-Not-Dist >> Pers-Dist \rightarrow Non-distinctive inflectional morphology
    b. Pers-Dist >> Pers-Not-Dist \rightarrow Distinctive inflectional morphology

Secondly, whether or not distinctive inflection for person leads to $V^\circ$-to-$I^\circ$ movement or not depends on how high Check-Dist-Person is ranked:

(49) a. Pred-Right >> Check \rightarrow no $V^\circ$-to-$I^\circ$ movement (regardless of verbal inflection)
    b. Check >> Pred-Right \rightarrow $V^\circ$-to-$I^\circ$ movement (iff rich verbal inflection)

Finally, whether a language has the basic order VO or OV depends on how $X^\circ$-Left is ranked with respect to the two head-right constraints, Pred-Right and $X^\circ$-Right:

(50) a. Pred-Right >> $X^\circ$-Left & $X^\circ$-Right \rightarrow OV
    b. $X^\circ$-Left >> Pred-Right & $X^\circ$-Right \rightarrow VO

The reason why the interaction of these three binary choices does not result in 8 languages ($2^3$) is that Check-Dist-Person can only have an effect in half of the cases, namely only if verbal inflectional morphology is “rich”, i.e. distinctive for person. In the following section, a potential further reduction from six to five or four possible languages is discussed.

3. Typologies

3.1 Four or six different types?

Six candidates are potential winners in (42)-(47). However, only five of these are actually attested, one would seem not to exist:

(51) a: NOT ATTESTED (Icelandic/French morphology with English/Danish syntax)
    c: French, Icelandic
    e: English, Danish, Faroese (& Norwegian, Swedish)
    i: German, Frisian (& Swabian, Swiss German, West Flemish)
    k: Yiddish
    m: Dutch, Afrikaans

_Vikner: V-mvt & OT, p. 20_
Six different rankings that would derive the respective candidates in (42)-(47) and (51) are the following (as mentioned, some of the candidates would also be optimal under other rankings):

\[ (52) \]

<table>
<thead>
<tr>
<th>a. e e V DP +dist</th>
<th>b. e e V DP +dist</th>
<th>c. V t t DP +dist</th>
<th>d. e e V DP -dist</th>
<th>e. e e V DP -dist</th>
<th>f. e e DP V -dist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pers</td>
<td>Pers</td>
<td>X°</td>
<td>Pred</td>
<td>Chck</td>
<td>X°</td>
</tr>
<tr>
<td>Dist</td>
<td>Not</td>
<td>Dist</td>
<td>Left</td>
<td>Dist</td>
<td>Pers</td>
</tr>
</tbody>
</table>

not attested, (47)

French/ Icelandic, (43)

English/ Danish/Far. (42)/(42')

Dutch/ Afrikaans, (44)

Yiddish, (45)

German/ Frisian, (46)

This shows that in an OT framework like the present, six different language types are predicted, each of the following three, (28a-c), in a VO- and an OV-version:

\[ (53) \]

a. distinctive features & V°-to-I° movement
   \[ (VO: (52c), OV: (51c)/(52c)) \]

b. distinctive features & no V°-to-I° mvt.
   \[ (VO: (52a), OV: (51a)/(52a)) \]

c. non-distinctive features & no V°-to-I° mvt.
   \[ (VO: (52e), OV: (51m)/(52m)) \]

In a framework where checking cannot be violated (e.g. within Principles and Parameters or within Minimalism), only four different language types are predicted, each of the following two in a VO- and an OV-version:

\[ (54) \]

a. strong features & V°-to-I° movement
b. weak features & no V°-to-I° movement

However, given that languages without V°-to-I° movement exist, e.g. German, which undoubtedly have “richer” inflection than the inflection of some languages with V°-to-I° movement, e.g. French or Yiddish, it is not possible to directly relate “strong” to any independent measure of morphological "strength".

\[ \text{Vikner: V-mvt & OT, p. 21} \]
In other words, under the present analysis, six different language types are expected, whereas if checking were non-violable, only four different language types would be expected. The five different types that are actually found are thus only compatible with checking being violable, unless we give up the attempt to relate the movement to any measure of morphological "strength". As stated above, such a view would mean that some the descriptive generalisations in section 0.3 would be a complete coincidence.

3.2 A "missing" language?

Notice that six different language types would be attested if the definition of "rich"/"strong" were to be changed, say to simple presence of person in any tense. In this case, English and Faroese would violate checking by having rich features and still no V°-to-I° movement, and thus be examples of the language type defined by (47a)/(51a)/(52a).

The reason why I do not want to pursue this line of thinking is that then it would be a coincidence that English and Faroese have less verbal inflection than e.g. French and Icelandic. Also the change from Middle English to early modern English, or the one from Old Norse to Faroese or Middle Danish (i.e. the loss of V°-to-I° movement, see Vikner 1995:161, 1997:201-207, 1999:107-120 and references there) could no longer be seen as caused by erosion in the inflectional system (an analysis due to e.g. Roberts 1985 and Platzack 1988). English, Faroese or Middle Danish would all count as having "rich" inflection, even though they all lack V°-to-I° movement.

Hence I prefer to look for alternative ways of dealing with the potential problem of the "missing" language, i.e. a language that would fit the predictions in (47a)/(51a)/(52a). One option might be to find a way of ruling out the constraint ranking that gives rise to the missing language, i.e. (52a), which might be possible by an appeal to the mechanism of constraint conjunction (between Check-Dist-Person & Pred-Right), as discussed in Vikner (2001a:154-156).

Finally, even if it should turn out that there is no language spoken which corresponds to (47a)/(51a)/(52a), this would not necessarily be a disaster. Overgeneration (the prediction that a type of language exists that we do not know any examples of) is much preferable to undergeneration (the prediction that a type of language does not exist that we do know examples of). The end of 3.1 above argued that whereas the present OT analysis might overgenerate, an analysis in terms of non-violable generalisations would either undergenerate or lose the direct relation between strength of features and morphological richness.

Vikner: V-mvt & OT, p. 22
4. V2 clauses

A complete analysis must also take into account what happens in those main clauses which differ from embedded clauses, i.e. it must account for cases where the verb moves to C°:

(English will be left out of this discussion, for reasons of exposition, given the complications linked to do-insertion. The further constraints necessary to account for the English data will be introduced in section 5 below.)

(55) a. Da. Hvad for en film så hun egentlig ?
 b. Fa. Hvat fyri film så hon egentliga ?
 c. Ic. Hvaða mynd så hún eiginlega ?
 d. Fr. Quel film voyait- elle vraiment ?
 e. Yi. Voser film zet zi eygntlekh ?
 f. Af. Watter rolprent sien sy eintlik ?
 g. Du. Welke film zag ze eigenlijk ?
 h. Fs. Hokfoar film seach se eins ?
 i. Ge. Welchen Film sah sie eigentlich ?
 Which film sees/saw she really ?

I am here adopting a version of Grimshaw’s (1997) account of Verb Second (V2). The languages under discussion vary with respect to whether only wh-elements or also other kinds of operators (i.e. elements that undergo topicalisation/fronting) have to move into CP-spec. I shall disregard this difference here, as all the languages have some amount of V2 (see Vikner 2001a:226-254 for a suggestion on how to derive such differences).

Once an element has to move to CP-spec, the existence of a new C° is forced, due to X-bar-structure (which is part of GEN). This new C° is completely empty, i.e. it is not the realisation of a feature (as opposed to e.g. Pers° or Tense°). If it is not filled by phonetic material, it violates Obl-Head:

(56) Obligatory heads,
 violated by every completely empty X°

I take Obl-Head to be ranked above the other syntactic constraint discussed so far in all the languages under discussion. This almost amounts to taking Obl-Head to be unviolable, as suggested e.g. in Bakovic (1998:38). I will nevertheless continue to take Obl-Head to be violable, cf. that it is violated in embedded wh-questions (Grimshaw 1997: 393-396). The new constraint rankings are given in (57).

In the complete tableau in (58), I will consider only candidates where the V2 conditions are fulfilled and the wh-XP has moved to CP-spec. When the V2 conditions are fulfilled, only movement of the finite verb to C° avoids a violation of Obl-Head.

Vikner: V-mvt & OT, p. 23
In the following tableaux omit not only the six candidates which are harmonically bounded, (58b,f,g,j,n,o), but also those six potential winners, (58a,c,e,i,k,m), that violate Obligatory-heads. In this way, the total decreases from 16 candidates in (58) to 4 candidates in (58')-(62).

Vikner: *V-mvt & OT*, p. 24
The only difference between Danish and Faroese in (58') above and Icelandic and French in (59) below is whether Pers-Not-Dist outranks Pers-Dist or vice versa. In this case, this difference only has a consequence for the form of the verb, and not for the syntax of the clause, as (58’d)/(59d) and (58’h)/(59h) have the same word order. The crucial difference between Danish/Faroese and Icelandic/French in embedded clauses (see section 2 above) was that Check-Dist-Pers forced verb movement (to I°) only in languages with distinctive inflection. Here this difference is irrelevant, as verb movement (to C°) is forced by Obl-Head which is ranked higher than Check-Dist-Pers.

Compare now the situation in OV-languages. Also here, verb movement is forced by the high ranking of Obl-Head. The different ranking between X°-Left and Pred-Right still derives the difference between VO (where X°-Left outranks Pred-Right) and OV (where Pred-Right outranks X°-Left), but if the main verb is also the finite verb, the VO/OV difference is masked, i.e. it is a question of whether the lowest trace of the verb is to the left or the right of the object. If the finite verb was an auxiliary, this difference would be crucial.

Vikner: V-mvt & OT, p. 25
The only difference between Yiddish and Frisian/German is the ranking of Check-Dist-Person and Pred-Right, but again the high ranking of Obl-Head keeps this from making a difference in the actual word order here.

(61) V2, finite main verb

```
Frisian/German: l
C°P°T°[VP] Pers Dist Pers Not Obl Head Pred Right Check Dist Pers X° Left X° Right
- d. V t t t DP +dist * ****! * ****
- h. V t t t DP -dist *! **** * ****
>>l. V t t DP t +dist * *** * ***
>>p. V t t DP t -dist *! *** * ***
```

The only difference between Yiddish/Frisian/German and Afrikaans/Dutch is whether Pers-Not-Dist outranks Pers-Dist or vice versa. Here, this difference only has a consequence for the form of the verb, and not for the syntax of the clause, as the optimal candidates have the same word order. As above, this is because verb movement is forced by the ranking of Obl-Head which is ranked higher than Check-Dist-Pers.

(62) V2, finite main verb

```
Afrikaans/Dutch: p
C°P°T°[VP] Pers Not Dist Pers Dist Obl Head Check Dist Pers Pred Right X° Left X° Right
- d. V t t t DP +dist *! **** * ****
- h. V t t t DP -dist * **** * ****
<<l. V t t DP t +dist *! *** * ***
<<p. V t t DP t -dist *! *** * ***
```

In other words, in this section the only discernible effect of the different rankings is whether inflection is distinctive or not. All other differences, including VO/OV are hidden by the high ranking of Obl-Head. This is completely consistent with the fact that superficially speaking all the languages have the same word order in (55). This section has thus shown how the differences between embedded clauses across the Germanic languages and their neutralisation in V2 constructions can be derived within the present framework.

Vikner: V-mvt & OT, p. 26
5. The special status in English of "light" verb *do* and other auxiliary verbs

Following the discussion of the syntax of finite main verbs in the previous sections, it is now possible to see in which contexts in which languages the syntax of finite auxiliary verbs differ from that of finite main verbs. It will be shown below that such differences are found only in English, and that they are related to *do*-insertion.

5.1 "Verbs are inserted in V°" is a violable constraint

The following difference between English and all the other languages was set aside in section 4 above: In all the other languages, the finite verb in a V2 context may be a main verb, (64), repeated from (55) in section 4 above. In the same context, English inserts the "light" verb *do*, (63), rather than move a finite main verb. (*Do* in (63) is "light" in the sense of appearing to make no contribution to the interpretation of the sentence, cf. e.g. Grimshaw & Mester 1988:205).

(63) En. Which film did she actually see?

(64) a. Da. Hvad for en film så hun egentlig?
   b. Fa. Hvåt fyri film sâ hon egentliga?
   c. Ic. Hvaða mynd sâ hún eiginlega?
   d. Fr. Quel film voyait- elle vraiment?
   e. Yi. Voser film zet zi eyntlekh?
   f. Af. Watter rolprent sien sy eintlik?
   g. Du. Welke film zag ze eigenlijk?
   h. Fs. Hokfoar film seach se eins?
   i. Ge. Welchen Film sah sie eigentlich?

(65) The structure of (63) is (65a), and the one of (64a-d) is (65b). The structure of (64e-i) is like (65b) except that the trace of the object precedes the rightmost trace of the verb rather than follows it.

In order to be able to include the English data, i.e. (63) and (65a), into the account as presented in section 4 above, the set of candidates has to be enlarged, in such a way that the possibility is taken into consideration of inserting a light *do* directly under a functional head (e.g. Tense°), as an alternative to first inserting the main verb under V° and then moving it to a functional head. These new candidates, i.e. candidates with *do* inserted outside VP, do extremely well on Pred-Right, because only elements inserted under V° (or under Adj°) count as predicate heads in the sense of Pred-Right. Pred-right thus only penalises the movement of lexical verbs (comparable to the earlier constraint No-Lexical-Movement in Grimshaw 1997:386, also used in Vikner 2001b).

Vikner: V-mvt & OT, p. 27
The reason why only English and not all languages inserts light do above the main verbs is the existence and the ranking of the following constraint:

\[(66) \quad \text{V-in-V°}
\]

violated by every verb which is not inserted under V°

\[\text{V-in-V°}\] is ranked below Pred-Right in English, but above it in the other languages. The ranking of V-in-V° is thus what distinguishes English from Danish, Faroese, Norwegian and Swedish:

As stated above, \textit{do} inserted outside V° cannot violate Pred-Right, because only elements inserted under V° (or under Adj°) count as predicate heads in the sense of Pred-Right. Given that otherwise (e.g. in all the other languages) even e.g. auxiliary verbs and the verb be are taken to be predicate heads, allowing \textit{do} to not be a predicate head is of course bending the rules somewhat, but this bending of the rules has a price, namely a violation of V-in-V°, as it amounts to the disregarding of some of the features of the verb \textit{do}.

\textit{Vikner: V-mvt & OT, p. 28}
5.2 Main verb syntax versus auxiliary verb syntax

Light *do* is not the only difference between the English auxiliaries and the auxiliaries of all the other Germanic and Romance languages. English has syntactic differences between finite auxiliary verbs and finite main verbs, whereas in all the other Romance and Germanic languages, finite auxiliary verbs and finite main verbs behave alike.

Consider auxiliary *have* and main verb *have*.

In Middle English (as in French, Icelandic and Yiddish), finite *have* occurs in I°, i.e. before the sentence adverbial *never*, regardless of whether it is an auxiliary, (68a), or a main verb, (68b):

(68) ME. a. Yf y hadde neuer sayd to be but bis folowand techinge ...
   If I had never said to you but this following teaching ...
   (= If I had never told you anything but the following …)
   (around 1400-1450, Anonymous (trsl.), *The Governance of Lordschipes*, Steele 1898:53)

   b. I had neuer more nede off mony than now
   I had never more need of money than now
   (1475, John Paston II, *Letter to John Paston III*, 06.11.1473, Davis 1971:469)

In Danish (and the other languages without V°-to-I° movement), finite *have* occurs in V°, i.e. after the sentence adverbial *aldrig* `never’, regardless of whether *have* is an auxiliary, (69a), or a main verb, (69c):

(69) Da. a. ... hvis jeg aldrig havde sagt det til dig (Aux have)
   ... if I never had said it to you
   b. *... hvis jeg havde aldrig sagt det til dig
   c. ... fordi jeg aldrig havde brug for penge (Main have)
   ... because I never had need for money
   d. *... fordi jeg havde aldrig brug for penge

In modern English, finite auxiliary *have* occurs in I°, i.e. before the sentence adverbial *never*, (70b), whereas finite main verb *have* occurs in V°, i.e. after *never*, (70c):

(70) En. a. *Why do you actually have asked me?
   b. Why have you actually asked me?
   c. Why did you actually have a fight?
   d. *Why had you actually a fight?

Two other differences between finite auxiliaries and finite main verbs in modern English correlate with this one. One difference is that auxiliary *have* may precede the subject in questions (and in other V2-contexts), whereas main verb *have* needs *do*-support also here:

(71) En. a. *Why do you actually have asked me? (Aux have)
   b. Why have you actually asked me?
   c. Why did you actually have a fight? (Main have)
   d. *Why had you actually a fight?
The other difference is that auxiliary *have* may precede *not*, whereas main verb *have* needs *do*-support in a negated clause:

\[
\begin{array}{cccc}
\text{C}^\circ & \text{I}^\circ & \text{V}^\circ \\
\hline
\text{a. } & \ldots & \text{that we did not} & \text{have} & \text{seen the film} \\
\text{b. } & \ldots & \text{that we} & \text{had not} & \text{seen the film} \\
\text{c. } & \ldots & \text{that we did not} & \text{have} & \text{a fight last night} \\
\text{d. } & \ast \ldots & \text{that we} & \text{had not} & \text{a fight last night}
\end{array}
\] (Aux *have*)

When other English verbs are examined, the full picture is as follows:

(73) *"Auxiliary" syntax*  
(verb occurs in I°, and may also occur in C° in e.g. questions)  
Auxiliaries: *be, have, do*, and modals  
Main verbs: *be*

(74) *"Main verb" syntax*  
(verb occurs in V° only, never in I° or in C°)  
Auxiliaries: -  
Main verbs: *have, do*, and all other main verbs

(Auxiliary *be* is found with progressive and passive, whereas main verb *be* is found e.g. in *John is never ill*. Auxiliary *do* (=light *do*) is found e.g. with negated main verbs or in questions, whereas main verb *do* is found e.g. in *John never does his homework*.)

The relevant difference is not one of auxiliaries versus main verbs, as seen by the behaviour of main verb *be*, which behaves unlike other main verbs but like the auxiliaries (always precedes sentence adverbials, precedes *not*, precedes the subject e.g. in questions, and does not allow *do*-insertion).

(I also strongly doubt that the relevant difference is one between high frequency verbs versus verbs of lower frequency, as suggested by e.g. Bybee (2003a, 2003b:620-621). Although some of the verbs with "auxiliary" syntax (e.g. main and aux *be* or aux *have*) are likely to have a very high frequency, I find it difficult to believe that also relatively rarely used modal verbs, e.g. *ought*, should have a higher frequency than even the most commonly used verbs with "main verb" syntax (e.g. main *have or say, know, believe*).)

Instead, I would like to follow Roberts (1985:30), Scholten (1988:160), and Pollock (1989: 385), who suggest that in English, only verbs that do not assign thematic roles may occur in I°. This gives the right prediction concerning main verb *be*, which presumably does not assign a thematic role (in e.g. *John is ill*, if there is a thematic role here at all, it is presumably assigned by *ill*, cf. also hand-out III). Main verb *be* here differs from main verb *have and do*, but resembles auxiliary *have, be and do*.
I propose to capture this by having GEN make sure that only those candidates are generated where thematic verbs start out in $V^\circ$ (where "thematic verbs" means verbs that assign one or more thematic roles).

In the other languages under discussion, insertion of any verb outside VP, be it main verb, auxiliary, or light $do$, is never optimal anyway, because of the high ranking of $V-in-V^\circ$.

Assuming that it is part of GEN that thematic roles have to be assigned inside lexical projections and that every argument must be assigned a thematic role, the interaction between GEN, Pred-Right, and $V-in-V^\circ$ makes three predictions:

(75) a. Either NO verbs (most languages) or ONLY non-thematic verbs (only English) are inserted outside VP - making it possible for finite thematic and finite non-thematic verbs to have different syntax.  

(Thematic verbs are never inserted outside VP.)

b. Either NO verbs (most languages) or ONLY thematic verbs (only English) have $do$-support when verb movement to $C^\circ$ takes place.  

(Non-thematic verbs never have $do$-support when verb movement to $C^\circ$ takes place.)

c. Either NO verbs (most languages) or ONLY thematic verbs (only English) have $do$-support with negation.  

(Non-thematic verbs never have $do$-support with negation.)

The second of the two options in (75a,b) is achieved by having Pred-Right ranked above $V-in-V^\circ$, and this is what happens in English, whereas the first of the two options in (75a,b) is achieved by having $V-in-V^\circ$ ranked above Pred-Right, and this is what happens in all the other languages discussed above.

What counts for (75c) is not the ranking between $V-in-V^\circ$ and Pred-Right, but between $V-in-V^\circ$ and a new constraint, the Head-Movement-Constraint (for details, see Vikner 2001a:199-219 and references there).

Summarising sections 5.1 and 5.2, I have suggested two new constraints:

The low ranking of $V-in-V^\circ$ in English means that rather than moving something inserted under $V^\circ$, it is cheaper to insert a (non-thematic) verb outside VP. The high ranking of $V-in-V^\circ$ in all other languages means that this strategy to avoid verb movement does not work, the price of inserting a verb outside VP is higher than that of verb movement, see 5.4-5.5.

The Head-Movement-Constraint is ranked the same in all the languages, and it is what is violated in negative clauses, unless a verb is inserted outside VP.

In 5.3-5.5, only three languages will be considered: English, Middle English (standing in for lg.s with $V^\circ$-to-$I^\circ$ mvt.), and Danish (standing in for lg.s without $V^\circ$-to-$I^\circ$). Also the difference Person$^\circ$ and Tense$^\circ$ will be glossed over, but the full details for the full structure and for all the languages are available in Vikner (2001a:165-225).

Vikner: V-mvt & OT, p. 31
5.3 The position of finite thematic verbs (again)

(The points made in this section were already made in section 2 above. I nevertheless include this section to set the stage for the following sections).

The basic difference between Middle English on one hand and modern English and modern Danish on the other concerns V°-to-I° movement and verbal inflection. Middle English has V°-to-I° movement with all verbs, whereas modern English and modern Danish do not:

\[
\begin{array}{ccc}
C^o & I^o & V^o \\
\text{a. ME. He swore that he talked never to no man ...} \\
\text{b. En. He swore that he never talked to anybody ...} \\
\text{c. Da. Han svor at han aldrig talte med nogen ...} \\
\end{array}
\]

\((76a): 1460 \text{ William Paston I, Letter to John Paston I, 02.05.1460, Davis 1971:164}\)

The relevant conflict here is between the constraints Check-person-inflection and Pred-Right. The difference between the languages arises even though Check-person-inflection is ranked above Pred-Right in all three languages.

In Middle English, the two options are V°-to-I° movement of a verb that has person in all tenses, (77a), or no V°-to-I° movement at all, (77b). Check-person-inflection prefers the former:

\[
\begin{array}{ccc}
\text{MIDDLE ENGLISH} & \text{Check person inflection} & \text{Pred-Right} \\
\hline
\text{a. talked never to} & \text{**} & \\
\text{b. never talked} & \text{*!} & \text{*} \\
\end{array}
\]

\((=\text{(76a)})\)

The two violations of Pred-Right in (77a) are caused first by talked being inserted under V°, which is left of its complement, the PP \textit{wyth no man}, and then by talked occurring in I°, which is left of its complement, the VP. The (fatal) violation of Check-person-inflection in (77b) is caused by I° not containing a “fully inflected” finite verb.

In modern English and modern Danish, on the other hand, the two options are V°-to-I° movement of a verb that does not have person in all tenses, (78a), vs. no V°-to-I° movement at all, (78b). Both violate Check-person-inflection and the decision is therefore up to Pred-Right. Pred-Right is violated only once when the verb remains in V°, (78b), but twice when the verb is inserted under V° and then moved into I°, (78a), and so the optimal candidate is (78b):

\[
\begin{array}{ccc}
\text{MODERN ENGLISH} & \text{Check person inflection} & \text{Pred-Right} \\
\hline
\text{a. talked never to} & \text{*} & \text{**!} \\
\text{b. never talked} & \text{*} & \text{*} \\
\end{array}
\]

\((=\text{(76b,c)})\)

Because thematic verbs must be inserted under V°, the only way for them to occur in I° is to undergo V°-to-I° movement. For non-thematic verbs, an alternative way is also available: Insertion directly under I°, without going via V°.

\textit{Vikner: V-mvt & OT, p. 32}
5.4 The position of finite non-thematic verbs

The next difference to be derived is one between Middle English and modern English on one hand and modern Danish on the other, concerning the placement of finite non-thematic verbs. In Middle English and modern English they are in I°, in Danish in V°:

(79)  
<table>
<thead>
<tr>
<th></th>
<th>C°</th>
<th>I°</th>
<th>V°</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. En. ... if I</td>
<td><strong>had</strong></td>
<td>never</td>
<td>said that to you</td>
</tr>
<tr>
<td>b. Da. ... hvis jeg</td>
<td><strong>aldrig</strong></td>
<td>havde</td>
<td>sagt det til dig</td>
</tr>
<tr>
<td>c. ME.</td>
<td><strong>yf y</strong></td>
<td>hadde</td>
<td>neuer</td>
</tr>
</tbody>
</table>

The relevant conflict here is between the constraints Pred-Right and Verb-in-V°. Recall that Pred-Right only applies to verbs inserted under V°. It is therefore necessary to consider:

- a. - a candidate with had inserted directly under I° ((80a), where only said violates Pred-Right but had violates Verb-in-V°),
- b. - a candidate with had inserted under V° and then moved into I° ((80b), which has two more violations of Pred-Right than (80a) but no violations of Verb-in-V°),
- c. - a candidate in which the verb is inserted under V° and stays there ((80c), which only has one more violation of Pred-Right than (80a)).

In modern English, Pred-Right takes precedence over Verb-in-V°:

(80)  
<table>
<thead>
<tr>
<th>MODERN ENGLISH</th>
<th>I°</th>
<th>V°</th>
<th>V°</th>
<th>Check p.inf.</th>
<th>Pred-Right</th>
<th>Verb-in-V°</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. had never</td>
<td>never</td>
<td>said</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. had never</td>
<td>never</td>
<td>t</td>
<td>said</td>
<td>*</td>
<td>**<em>!</em></td>
<td></td>
</tr>
<tr>
<td>c. never had</td>
<td>never</td>
<td>said</td>
<td></td>
<td>*</td>
<td>***!</td>
<td></td>
</tr>
</tbody>
</table>

In Danish, it is the opposite, Verb-in-V° takes precedence over Pred-Right:

(81)  
<table>
<thead>
<tr>
<th>MODERN DANISH</th>
<th>I°</th>
<th>V°</th>
<th>V°</th>
<th>Check p.inf.</th>
<th>Verb-in-V°</th>
<th>Pred-Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. havde aldrig</td>
<td>aldrig</td>
<td>sagt</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>b. havde aldrig</td>
<td>aldrig</td>
<td>t</td>
<td>sagt</td>
<td>*</td>
<td>***!</td>
<td></td>
</tr>
<tr>
<td>c. aldrig havde</td>
<td>havde</td>
<td>sagt</td>
<td></td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
</tbody>
</table>

In Middle English, the constraint ranking is the same as Danish, the difference being the same as in (77) above, i.e. that Check person inflection is only violated by the candidate where the verb is not in I°:

(82)  
<table>
<thead>
<tr>
<th>MIDDLE ENGLISH</th>
<th>I°</th>
<th>V°</th>
<th>V°</th>
<th>Check p.inf.</th>
<th>Verb-in-V°</th>
<th>Pred-Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. had neuer</td>
<td>neuer</td>
<td>sayd</td>
<td></td>
<td></td>
<td>*!</td>
<td>*</td>
</tr>
<tr>
<td>b. had neuer</td>
<td>neuer</td>
<td>t</td>
<td>sayd</td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>c. neuer had</td>
<td>neuer</td>
<td>sayd</td>
<td></td>
<td>*!</td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>

Vikner: V-mvt & OT, p. 33
5.5 The position of finite verbs in questions

The very same difference in constraint ranking also accounts for another syntactic difference between English, Danish and Middle English, concerning verb movement in questions. In English questions with finite thematic verbs, *do* is inserted in I° and moved to C°, whereas in Danish and Middle English questions, the thematic verb itself moves via I° into C°:

\[
\begin{array}{ccc}
C^o & I^o & V^o \\
\hline
a. En. What \textit{does} it t really \textit{mean} ? \\
b. En. *What \textit{means} it t really ? \\
c. Da. *Hvad \textit{gør} det t egentlig \textit{betyde} ? \quad (= (83a)) \\
d. Da. Hvad \textit{betyder} det t egentlig t ? \quad (= (83b)) \\
e. ME. What \textit{meneb} it t t \quad \textit{pat my days sall be so schortte?} \\
\end{array}
\]

\[(83)\]

What means it that my days shall be so short ?

(1494, Anonymous, Life of Alexander, Westlake 1913:109)

The cost of *do*-insertion is a violation of \textit{Verb-in-V°}, but on the benefit side there is only one violation of \textit{Pred-Right}, caused by the main verb in V°, (84a). Movement of the thematic verb via I° into C° does not violate \textit{Verb-in-V°}, but it violates \textit{Pred-Right} three times, in V°, in I°, and in C°, (84b). The ranking of these two constraints is therefore crucial:

\[
\begin{array}{cccc}
\text{MODERN ENGLISH} & C^o & I^o & V^o \\
\hline
a. \textit{does} it t really \textit{mean} & * & * & * \\
b. \textit{means} it t really t & * & * & * \\
\end{array}
\]

\[(84)\]

Here there is no difference between Danish and Middle English. In Middle English, neither candidate violates \textit{Check person inflection} because both candidates have a verb in I°:

\[
\begin{array}{cccc}
\text{MIDDLE ENGLISH} & C^o & I^o & V^o \\
\hline
a. \textit{doth} it t \textit{mene} & * & * & * \\
b. \textit{meneb} it t t & * & * & * \\
\end{array}
\]

\[(86)\]
In questions with non-thematic verbs, none of the three languages have do-insertion:

(87)  a. En. *Why do you t actually have asked me?
     b. En. Why have you t actually asked me?
     c. Da. *Hvorfor gør I t egentlig have spurgt mig?  (87a)
     d. Da. Hvorfor har I t egentlig t spurgt mig?  (87b)
     e. ME. Whare-tyll have ye t t askyd me þerof ?
      (Why did you ask me about it?)
      (around 1400-1450, Anonymous (trsl.), The Governance of Lordschipes, Steele 1898:113)

Even in modern English, there is nothing to be gained by do-insertion here. It does not
minimise the violations of Pred-Right, because non-thematic have may itself be inserted under
I°, so that only the main verb seen violates Pred-Right, (88b), whereas do-insertion in I°
would force non-thematic have to be inserted under a V° and then there would be two violations
of Pred-Right, (88a). Insertion of non-thematic have under a V° and subsequent movement to
I° and C° would violate Pred-Right even more, (88c):

(88) MODERN ENGLISH
     | C°  | I°  | V°  | V°  | Check p.inf. | Pred-Right | Verb-in-V°
     |     |     |     |     |             |           |           
     a. do you t actually have asked  *  ***!  *
     b. have you t actually asked  *  *  *
     c. have you t actually t asked  *  ***!!

In Danish, the candidate with insertion of all verbs under a V°, (89c), wins, because of the high
ranking of Verb-in-V°:

(89) MODERN DANISH
     | C°  | I°  | V°  | V°  | Check p.inf. | Verb-in-V° | Pred-Right
     |     |     |     |     |             |           |           
     a. gør du t egentlig have spurgt  *  *!  **
     b. har du t egentlig spurgt  *  *!  *
     c. har du t egentlig t spurgt  *  ****

Here again there is no difference between Danish and Middle English. In Middle English, none
of the candidates violate Check person inflection because all candidates have a verb trace in I°:

(90) MIDDLE ENGLISH
     | C°  | I°  | V°  | V°  | Check p.inf. | Verb-in-V° | Pred-Right
     |     |     |     |     |             |           |           
     a. do ye t have asked  *!  **
     b. have ye t asked  *!  *
     c. have ye t t asked  ****

Vikner: V-mvt & OT, p. 35
6. Conclusions

6.1 Conclusions, sections 1-4

It was argued that it is possible to formulate checking as a constraint, making possible an account of the link between verbal inflectional morphology and V°-to-I° movement (as argued for by the non-OT-studies Rohrbacher 1999 and Vikner 1997).

By formulating checking as a violable constraint, an inclusion of all the OV-languages into the above accounts is made possible. This would not be possible if violability of constraints was impossible, because although German has more verbal inflection than French and Yiddish, there is no V°-to-I° movement in German, whereas there is V°-to-I° movement in French and Yiddish.

It was also shown that it was possible to derive the VO/OV-difference with violable constraints, and that the constraints crucial for the VO/OV-difference also had other effects, namely the minimising both of structure and of movement.

The typological predictions were discussed, and different ways were discussed of dealing with the fact that one out of the six predicted language types (w.r.t. the word order in embedded clauses) was not attested within Germanic and Romance.

Finally, it was shown how the difference between embedded clauses and V2 clauses could be derived by means of the constraint Obl-Head.

6.2 Conclusions, section 5

Why is light do necessary in V2 in English? Because verb movement has a price, and because in English, this price is higher than the price of inserting a light do.

Why is light do always finite? Because light do is never inserted under V°, only under I°. Insertion of do under V° would require one more VP and therefore one more violation of Pred-Right, and the advantages of do-insertion would be lost.

If do can be inserted outside VP, why not insert a finite main verb outside VP, seeing as this would also cut down the number of violations of Pred-Right? Because only non-thematic verbs can be inserted outside VP. Thematic verbs inserted directly outside VP would not be able to assign their thematic roles.

This leaves open the possibility of inserting other verbs under I°, as long as they are non-thematic, and this is precisely what happens in English.

Why is there no do-insertion with non-thematic verbs? The insertion of non-thematic verbs outside VP further means that there is nothing to be saved by insertion of light do in such cases: Pred-Right is already only violated once, by the main verb in V°.
6.3 Further perspectives

- **V2 vs. residual V2**
  The variation between French and English (V2 only in questions, i.e. "residual V2") on one hand and the other Germanic languages on the other (V2 in all main clauses) can be shown to be derivable by means of two constraints Wh-spec (requiring wh-operators to be in a specifier position) and Operator-spec (requiring all operators including topics to be in a specifier position), see Vikner 2001a:226-254. This account also predicts the impossibility of the mirror image of English and French, i.e. languages with V2 in topicalisations but not in questions.

- **Optionality of complementisers**
  that is optional only in VO-languages without V°-to-I° movement, but obligatory in VO-languages with V°-to-I° movement (an effect of the constraint Projection-Principle, Grimshaw 1997, Vikner 2001b, and many others) and in all OV-languages (because all embedded sentences have to be extraposed, just like subject sentences in the VO-languages, which also have obligatory that).

- **Possibility of transitive expletive constructions**
  In the VO-languages, transitive expletive constructions are possible only in languages with V°-to-I° movement, an observation going back at least to Vikner (1990:3.7, 3.24, 1995:153, 188-190) and Sigurðsson (1991:354). This is because the logical subject (which was shown to be in TP-spec by Jonas & Bobaljik 1993:88-89) is licensed from I°, and such licensing requires that I° has content, which is only the case if the verb has moved there. In OV-languages, on the other hand, following Haider & Rosengren (1998:48-51, 2003), the logical subject of a transitive expletive construction may be licensed by the verb in situ.

References

Bybee, Joan: 2003a, "The development of the category of auxiliary in English”, paper presented at the XVth International Conference on Historical Linguistics, Univ. of Copenhagen, August 2003.

Vikner: V-mvt & OT, p. 37


Haider, Hubert: 1993, Deutsche Syntax Generativ, Gunter Narr Verlag, Tübingen.


Vikner: V-mvt & OT, p. 38


Uldaler, Nelly & Gerd Wellejus (eds.): 1968, Gammeldansk Læsebog, Gyldendal, Copenhagen.


