Evidence for “underlying” XV word order in Early Old French

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VX and XV word orders in Old French

(1) Rollant ad mis l’ olifan a sa buche
   'Roland raised the ivory horn to his mouth.'
   (1100-ROLAND-V,133.1772)

(2) Li reis Marsilie out sun cunseill finet
   'King Marsilla had adjourned his council.'
   (1100-ROLAND-V,5.53)
Decline of OV with multi-word objects, quantified vs. non-quantified
Decline of OV with multi-word objects, by length, quantified and non-quantified combined
Grammatical analysis of the decline, I

- Does the decline of XV word orders involve competition between an XV grammar inherited from Latin and the modern French VX grammar?

- Or is there a discontinuity between Latin and French? In other words, does even the earliest French have only the VX grammar, and do the XV word orders reflect a decline in scrambling?
Grammatical analysis of the decline, 2

• Students of the decline of XV, including generative historical syntacticians, have favored the second view.

• However, there is a nagging feeling that Early Old French shows “too much” XV word order for a language with a VX grammar, even one with scrambling.
Decline of OV with one-word objects, quantified vs. non-quantified
Roadmap

• Evidence for statistical independence of grammatical processes
  • Synchronic: “Free” word order in Ancient Greek
  • Diachronic: Phrase structure change in the history of Yiddish

• Quantitative evidence for “too much” XV order in Early Old French
1. Statistical independence in word order patterns in Ancient Greek (Taylor 1994)
“Free” word order in Ancient Greek

SXV: Καμβύσης τὰ δῶρα ἔδέξατο
Kambyse:s ta do:ra edeksato
Kambuses the gifts received

SVX: Καμβύσης ἔδέξατο τὰ δῶρα
Kambuses edeksato ta do:ra

VSX: ἔδέξατο Καμβύσης τὰ δῶρα
edeke:ato Kambuses:ta do:ra

VXS: ἔδέξατο τὰ δῶρα Καμβύσης
edeke:ato ta do:ra Kambuses:ta

XSV: τὰ δῶρα Καμβύσης ἔδέξατο
ta do:ra Kambuses: edeksato

XVS: τὰ δῶρα ἔδέξατο Καμβύσης
ta do:ra edeksato Kambuses:ta
<table>
<thead>
<tr>
<th>pattern</th>
<th>formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>S, X v</td>
<td>(1-s)(1-p)</td>
</tr>
<tr>
<td>X, Y v</td>
<td>(1-p)^2</td>
</tr>
<tr>
<td>S v X</td>
<td>p(1-s)</td>
</tr>
<tr>
<td>X v S</td>
<td>s(1-p)</td>
</tr>
<tr>
<td>X v Y</td>
<td>2p(1-p)</td>
</tr>
<tr>
<td>v S, X</td>
<td>sp</td>
</tr>
<tr>
<td>v X, Y</td>
<td>p^2</td>
</tr>
</tbody>
</table>

Formula for calculating distribution of clause types based on the probability of postposing of subjects and complements
### Table 13: Probability of subject and NP complement postposing in four Homeric data sets

<table>
<thead>
<tr>
<th></th>
<th>subject postposing</th>
<th>NP compl. postposing</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 NP argument</td>
<td>.27</td>
<td>.44</td>
<td>112</td>
</tr>
<tr>
<td>2 NP arguments</td>
<td>.23</td>
<td>.48</td>
<td>109</td>
</tr>
<tr>
<td>3 NP arguments</td>
<td>.29</td>
<td>.41</td>
<td>21</td>
</tr>
<tr>
<td>1 NP/1 PP argument</td>
<td>.28</td>
<td>.48</td>
<td>58</td>
</tr>
</tbody>
</table>

Probability of subject and NP complement postposing in four Homeric data sets.
<table>
<thead>
<tr>
<th>pattern</th>
<th>formula</th>
<th>observed distribution</th>
<th>expected distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>S X v</td>
<td>(1-s)(1-p)</td>
<td>41</td>
<td>41</td>
</tr>
<tr>
<td>X Y v</td>
<td>(1-p)^2</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>S v X</td>
<td>p(1-s)</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>X v S</td>
<td>s(1-p)</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>X v Y</td>
<td>2p(1-p)</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>v S X</td>
<td>sp</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>v X Y</td>
<td>p^2</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Total N = 109  \( s = .23 \)  \( p = .43 \)
N for clauses with subjects = 93
N for clauses without subjects = 16
\( \chi^2 = 4.12, p > .8 \)

Best fit of observed and expected distribution of clauses with 2 arguments in Homer
<table>
<thead>
<tr>
<th>pattern</th>
<th>formula</th>
<th>observed distribution</th>
<th>expected distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>S X Y v</td>
<td>(1-s)(1-p)^2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>S X v Y</td>
<td>2p(1-s)(1-p)</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>X Y v S</td>
<td>s(1-p)^2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>S v X Y</td>
<td>p^2(1-s)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>X v S Y</td>
<td>2p(1-p)(1-s)</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>v S X Y</td>
<td>s(p^2)</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Total N = 21  s = .29  p = .41

$\chi^2 = 3.66$, p > .8

Best fit of observed and expected distribution of clauses with 3 arguments in Homer
2. Statistical independence in word order patterns in Early Yiddish (Santorini 1993)
Variation in the position of T in Yiddish, I

(1) ven der vatr es leyent
    if the father it reads

(2) ven der vatr leyent es
    if the father reads it
Variation in the position of T in Yiddish, 2

(3) ven der vatr   nurt doyts   leyent
    if    the father only German reads

(4) ven der vatr   leyent   nurt doyts
    if    the father reads only German
Noun phrase extraposition in Yiddish

(1) ven der vatr  **nurt doyts**  leyen **kan**
    if   the father only German read  can

(2) ven der vatr  leyen **kan**  **nurt doyts**
    if   the father read  can only German
Prepositional phrase extraposition in Yiddish

(3) dz ikh reyn fun der ashin verde
    that I clean from the ash become

(4) dz ikh reyn verde fun der ashin
    that I clean become from the ash
Frequency of DP and PP postposing in the history of Yiddish (Santororini 1993:275)

<table>
<thead>
<tr>
<th>Date</th>
<th>DP postposing</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Postposed</td>
<td>Not postposed</td>
<td>freq.</td>
<td>Postposed</td>
<td>Not postposed</td>
<td>freq.</td>
</tr>
<tr>
<td>1400-1489</td>
<td>1</td>
<td>12</td>
<td>.08</td>
<td>9</td>
<td>12</td>
<td>.43</td>
</tr>
<tr>
<td>1490-1539</td>
<td>7</td>
<td>19</td>
<td>.27</td>
<td>13</td>
<td>16</td>
<td>.45</td>
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<tr>
<td>1540-1589</td>
<td>7</td>
<td>24</td>
<td>.23</td>
<td>52</td>
<td>21</td>
<td>.71</td>
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<tr>
<td>1590-1639</td>
<td>10</td>
<td>40</td>
<td>.20</td>
<td>39</td>
<td>23</td>
<td>.63</td>
</tr>
<tr>
<td>1640-1689</td>
<td>4</td>
<td>19</td>
<td>.17</td>
<td>17</td>
<td>30</td>
<td>.36</td>
</tr>
<tr>
<td>1690-1739</td>
<td>1</td>
<td>5</td>
<td>.17</td>
<td>6</td>
<td>3</td>
<td>.67</td>
</tr>
<tr>
<td>1740-1789</td>
<td>1</td>
<td>2</td>
<td>.33</td>
<td>8</td>
<td>7</td>
<td>.53</td>
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<tr>
<td>1790-1839</td>
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<td>1</td>
<td>.00</td>
<td>1</td>
<td>1</td>
<td>.50</td>
</tr>
<tr>
<td>1840-1950</td>
<td>no INFL-final data</td>
<td>–</td>
<td>no INFL-final data</td>
<td>–</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Frequency of DP and PP postposing in the history of Yiddish
How many instances of the word order in (b) are underlyingly T-final?

(a) Subj XP V

(b) Subj V XP ← ambiguous

\[ R(ate \ of \ postposing) = \frac{P}{(P + N)} \]

\[ P = N \times R / (1-R) \]

\[ a_{corr} = a + P \]

\[ b_{corr} = b - P \]
An example

• 3 instances of Subj V XP, 9 of Subj XP V

• How many of the 3 instances are T-final?

• \[ P = \frac{N \times R}{1 - R} \]

• \[ N = 9, \, R = 0.28 \]

• \[ P = 9 \times 0.28 / 0.72 = 2.5 \]

• So only 0.5 out of the 3 examples are T-final; the rest are T-medial
Rise of various sentence types in Yiddish, I
(Santorini 1993:270-275)

<table>
<thead>
<tr>
<th>Date</th>
<th>Unamb med</th>
<th>Unamb N</th>
<th>Amb raw</th>
<th>Amb N</th>
<th>Amb corr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1445</td>
<td>1</td>
<td>43</td>
<td>3</td>
<td>12</td>
<td>0.5</td>
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<tr>
<td>1515</td>
<td>7</td>
<td>79</td>
<td>13</td>
<td>26</td>
<td>6.8</td>
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<tr>
<td>1565</td>
<td>17</td>
<td>127</td>
<td>58</td>
<td>97</td>
<td>5.9</td>
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<tr>
<td>1615</td>
<td>12</td>
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<td>41</td>
<td>70</td>
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<td>1665</td>
<td>31</td>
<td>108</td>
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<td>53</td>
<td>24.7</td>
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<tr>
<td>1715</td>
<td>40</td>
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<td>12</td>
<td>30</td>
<td>5</td>
<td>7</td>
<td>3.6</td>
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<td>1815</td>
<td>133</td>
<td>136</td>
<td>58</td>
<td>61</td>
<td>57.0</td>
</tr>
<tr>
<td>1840+</td>
<td>152</td>
<td>152</td>
<td>69</td>
<td>69</td>
<td>69.0</td>
</tr>
</tbody>
</table>
Rise of various sentence types in Yiddish, 2

- Amb raw
- Amb corr
- Unamb
Comparing rates of change of various sentence types in Yiddish (Santorini 1993:272-276)

<table>
<thead>
<tr>
<th></th>
<th>Slope</th>
<th>Chi-square</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unamb</td>
<td>1.11</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Amb, raw</td>
<td>0.36</td>
<td>17.14</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Amb, corr</td>
<td>0.97</td>
<td>0.59</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
3. XV vs. VX in Old French: Preliminaries
Preliminaries, I

- Sentences where a target XP is a clitic or an empty category are excluded since their base position is either fixed or not recoverable.

- Sentences where a target XP moves further left than T are excluded since their base position relative to the non-finite verb is not recoverable.

- With tensed sentences, only ones with non-finite VPs are considered to avoid interference from V-to-T or V-to-C movement.
Excluded clause types, I

(1) Je les ai ___ vu(s) ___
    I them have seen
(2) Qui veux-tu ___ voir ___ ?
    who want you to-see
(3) Je les veux ___ voir ___
    I them want to-see
Excluded clause types, 2

Object > (Subject) > Finite V > Nonfinite V

(1) Sa grant honur a grant dol ad turnede (f. sg.)
'He has turned his great honor to great sorrow.'
(10XX-ALEXIS-V,29.282)

(Subject) > Object > Finite V > Nonfinite V

(2) Li amiralz .X.escheles ad justedes (f. pl.)
'The admiral arranged ten batallions.'
(1100-ROLAND-V,234.3228)
Excluded clause types, 3

(Subject) > Finite V > Object

(1) Nostres Sires savoit tout bien
   'Our Lord knew everything well.'
   (1190-BORON-R,9.110)

(2) si avroiz molt grant aventage
   'So you would have a very great advantage.'
   (1170-YVAIN-R,41.1361)
Excluded clause types, 4

\[(\text{Subject}) > \text{Object} > \text{Finite V}\]

(1)  
Uns viels prestre la porte garde
'An old priest is guarding the door'
(116X-MARIE-DE-FRANCE-R, 16.276)

(2)  
et vos enor et joie rande
'And God give you honor and joy'
(1170-YVAIN-R, 162.5687)
Old French texts contain occasional examples of OVT(ense) word order, strikingly similar to the word order in German subordinate clauses:

(1) Quant l'ostes ce escouté eut
    when the army that heard had
    (1190-BORON-R,38.579)

(2) als das Heer das gehört hatte
    when the army that heard had
However, the resemblance to German is only superficial. In Old French, OVT(ense) word order always arises from leftward movement of a VP to an A-bar position.

Seignur servir bien deit l’um tel
lord serve well ought one such

(1120-BRENDAN-R,55.666)
Excluded clause types, 5

Pre-Tense VPs always precede any clitics associated with the finite verb.

des que vos tant dit m' an avez

since that you so-much told me of-it have

(1170-YVAIIN-R,151.5230)
Excluded clause types, 6

Pre-Tense VPs may be either OV or VO. In the latter case, they superficially violate the Final-Over-Final Constraint.

Ainz  que trovét nule rien  ait
before that found any  thing has

(1120-BRENDAN-R,70.1085)
VO vs. OV word order: *Avoir* + participle

(1) Rollant ad mis l’ olifan a sa buche
    'Roland raised the ivory horn to his mouth.'
    (1100-ROLAND-V,133.1772)

(2) Li reis Marsilie out sun cunseill finet
    'King Marsilla had adjourned his council.'
    (1100-ROLAND-V,5.53)
VO vs. OV word order: Modal + infinitive

(1) Je veul avoir mon loyer
'I want to have my pay.'
(127X-CASSIDORUS-P,164.1546)

(2) Kar ne poeit le jur choisir
'For he cannot choose the day.'
(116X-MARIE-DE-FRANCE-R,111.2262)
VO vs. OV word order: Other nonfinite clauses

(1) é pursievre David cessad
   'and he ceased to pursue David'
   (1150-QUATRELEIVRE-P,47.1793)

(2) Le abét e tuz baiser enprent
    'He begins to kiss the abbot and everyone.'
    (1120-BRENDAN-R,47.464)
4. Early Old French has “too much” XV
**XV vs. VX word order in clauses with full DP direct and indirect objects in Early Old French (up to 1250)**

<table>
<thead>
<tr>
<th></th>
<th>V &gt; DO</th>
<th>DO &gt; V</th>
<th>Row Totals</th>
<th>Estimated DO scrambling</th>
</tr>
</thead>
<tbody>
<tr>
<td>V &gt; IO</td>
<td>40</td>
<td>2</td>
<td>42</td>
<td>0.048</td>
</tr>
<tr>
<td>IO &gt; V</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Column Totals</td>
<td>45</td>
<td>7</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Estimated IO scrambling</td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Expected DO, IO > V order = \(0.11 \times 0.048 \times 52 = 0.28\)

Observed DO, IO > V order = 5

Chi-square = 81.14
### XV vs. VX word order in clauses with a full DP direct object and a clause-level PP in Early Old French (up to 1250)

<table>
<thead>
<tr>
<th></th>
<th>V &gt; DO</th>
<th>DO &gt; V</th>
<th>Row totals</th>
<th>Estimated DO scrambling</th>
</tr>
</thead>
<tbody>
<tr>
<td>V &gt; PP</td>
<td>237</td>
<td>54</td>
<td>291</td>
<td>.19</td>
</tr>
<tr>
<td>PP &gt; V</td>
<td>24</td>
<td>38</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Column totals</td>
<td>261</td>
<td>92</td>
<td>353</td>
<td></td>
</tr>
<tr>
<td>Estimated PP scrambling</td>
<td>.092</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Expected DO,PP > V order = .092*.19*353 = 6.0

Observed DO,PP > V order = 38

Chi-square = 169.8
# XV vs. VX word order in clauses with full DP direct and indirect objects in later Old French (1250-1400)

<table>
<thead>
<tr>
<th></th>
<th>V &gt; DO</th>
<th>DO &gt; V</th>
<th>Row totals</th>
<th>Estimated DO scrambling</th>
</tr>
</thead>
<tbody>
<tr>
<td>V &gt; IO</td>
<td>41</td>
<td>3</td>
<td>44</td>
<td>0.068</td>
</tr>
<tr>
<td>IO &gt; V</td>
<td>6</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Column totals</td>
<td>47</td>
<td>4</td>
<td>51</td>
<td></td>
</tr>
</tbody>
</table>

Estimated IO scrambling = 0.13

Expected DO,IO > V order = 0.13 \* 0.068 \* 51 = 0.44

Observed DO,IO > V order = 1

Chi-square = 0.6966
### XV vs. VX word order in clauses with a full DP direct object and a clause-level PP in later Old French (1250-1400)

<table>
<thead>
<tr>
<th></th>
<th>V &gt; DO</th>
<th>DO &gt; V</th>
<th>Row totals</th>
<th>Estimated DO scrambling</th>
</tr>
</thead>
<tbody>
<tr>
<td>V &gt; PP</td>
<td>200</td>
<td>58</td>
<td>258</td>
<td>.22</td>
</tr>
<tr>
<td>PP &gt; V</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Column totals</td>
<td>203</td>
<td>61</td>
<td>264</td>
<td></td>
</tr>
</tbody>
</table>

Estimated PP scrambling: .015

Expected DO,PP > V order = .015*.22*264 = .88

Observed DO,PP > V order = 3

Chi-square = 5.21
References


Finis
Avoir + participle with object agreement

(1) Li emperere ad prise sa herberge (f. sg.)
    'The emperor has taken his lodging.'
        (1100-ROLAND-V, 182.2486)

(2) Vos li avez tuz ses castels toluz (m. pl.)
    'You have taken all his castles from him.'
        (1100-ROLAND-V, 16.208)
Avoir + participle with object disagreement

(1) Li nostre deu i unt fait felonie (m. sg. - f. sg.)
   'Our gods have committed a felony there.'
   (1100-ROLAND-V,188.2595)

(2) ... avoit tous les autres vaincu (m. sg. - m. pl.)
   '... (the emperor) had vanquished all the others.'
   (137X-PRISE-R,.639)
Avoir + participle with agreeing and disagreeing clitic objects

(1) Forment l’(= la prison) ont fermée et serrée (f. sg.)
    'They closed and sealed it securely.'
    (1190-BORON-R,25.398)

(2) tuz les i ad perdut (m. pl. - m. sg.)
    'He lost them all there.'
    (1100-ROLAND-V,152.2053)
Decline of OV word order by clause type
Object-participle agreement by DP type
Avoir + participial small clause

(1) s'avoient les espees traites desos les capes (f. pl.)
'So they had their swords drawn under their capes.'

(122X-AUCASSIN-14-P,21)

(2) N'ot drap vestu fors la chemise. (m. sg.)
'He had no clothes on except for his shirt.'

Possible cases of *avoir* + participial small clause with postposed DP

(1) **out vestue** sa brunie (f. sg.)
   'He had put on his body armor.'
   (1100-ROLAND-V,29.364)

(2) **s'avoient bien** liez de cordes les piez (m. pl.)
   'So they had their feet tightly bound with cords.'
   (1170-YVAIN-R,125.4314)
Decline of OV word order in clauses with *avoir* + participle
Decline of OV word order: agree-marked versus neutralized *avoir* + participle

![Graph showing the decline of OV word order with agree-marked and neutralized *avoir* + participle over time.](Image)
Decline of OV word order by clause type: all *avoir* + participle versus others
Cases of raising of a nonfinite verb across an adverb

(1) En celui temps Bruthus avoit congneue charnelment Ynogen sa femme (f. sg.)
'During this time Brutus had had intercourse with his wife Ynogen.'
(133X-PERCEFOREST-P,87.443)

(2) il n' avoit pas mis encore son conseil ensamble
'He had not yet assembled his council.'
(1373-FROISSART-P,402.8059)
Frequency of the raising of nonfinite verbs over adverbs by date
Decline of OV word order by clause type:
all *avoir* + participle versus others