Old English conjoined main clauses revisited

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1 Introduction

- Main (MC) and conjoined main (CC) clauses behave differently in four syntactic areas:

1. **IP-headedness**: CCs are more commonly verb-final than MCs, but not nearly as often as subordinate clauses (ex. 1) (Bech 2001; Pintzuk and Haeberli 2008).

2. **V-to-C movement**: MCs show higher rates of high verb placement than CCs (ex. 2).

3. **Topicalization**: Topicalization is more frequent in MCs than in CCs (ex. 3).

4. **Pronominal scrambling**: MCs and CCs behave differently regarding non-subject pronouns (ex. 4).

(1) a. Se engel gehyrte hi mid his wordum
the angel encouraged them with his words
'The angel encouraged them with his words'
(cocathom1,ÆCHom,1,13:284.110.2451)

b. & þæt folc nuȝt þæt tacn ðosep sesetnesse æfterfylgeað
and that people now-yet that token Joseph law after-follows
'And the people still follow that aspect of Joseph’s law'
(coorosiu,Or,1:5.24.13.472)

(2) a. Ne wylle we þeh her na mare scaðe awritan
not will we though here no more scathe write
'We will not here, however, record any more injury'
(cochronD,ChronD,[Classen-Harm]:1079.11.2519)

b. & heo him hyran ne woldon
and they him hear not would
'But they would not listen to him'
(cobede,Bede,2:2.98.19.917)

(3) a. þone suðran steorran we ne gescoð næfre
the southern star we not see never
'We do not ever see the southern star'
(cotempo,ÆTemp:9.8.299)

b. ne he ealu ne drince næfre of þe win
nor he ale not drinks never or wine
'Nor does he ever drink ale or wine'
(cootest,Judg:13.3.5734)
(4)  a. **God** hine ḏa genam of þisum life upp
   and God him then took of this life up
   'And God then lifted him up from this life'
   (colsigewZ,ÆLet,4_[SigewardZ]:182.64)

b. **Iosue** him ḏa feng on mid gefeohte
   Joseph him then received with fighting
   'Joseph then attacked him'
   (cootest,Josh:10.9.5447)

c. Scipia sende sciphere after
   and Scipia sent ship-army after
   'And Scipia sent a fleet after them'
   (coorosiu,Or,4:10.106.31.2216)

d. ?* **Him Scipia** sende sciphere after

2 Formal Analysis

- Conjunctions can be C-heads

![Diagram of CP structure]

- This captures the lower rates of V-to-C and higher rates of I-final headedness in CC at the same time

- Variation between C-head conjunctions and logical connectors

- CPs can have various types

\[
\text{CP}_{[\text{type}]} = \{\text{CP}[\text{TOPIC}],\ \text{CP}[\text{CONJ}],\ ...\ \text{CP}[\text{REL}]\}
\]

- If a clause-initial topic is used, the type is TOPIC

\[
\text{CP}_{[\text{type}]} \rightarrow \rightarrow \text{XP} \quad \downarrow \quad \text{C'}_{[\text{type}]} \quad \uparrow = \downarrow
\]

\[
(\uparrow \text{TOPIC}) = \downarrow \\
(\uparrow \text{TOPIC}) = (\uparrow \text{GF}^* \ \text{GF}) \\
_{[\text{type}]} = \text{TOPIC}
\]

- Otherwise the type is left unspecified

\[
\text{CP}_{[\text{type}]} \rightarrow \text{C'}_{[\text{type}]} \\
\uparrow = \downarrow
\]

\[
\text{C'}_{[\text{type}]} \rightarrow \text{CP}_{[\text{type}]} \\
\uparrow = \downarrow \\
\text{IP} \\
\uparrow = \downarrow
\]
• C-head conjunctions in the lexicon type a CP as CONJ

\[
\begin{align*}
\text{and } C[\text{CONJ}] (\uparrow \text{COORD}) &= \text{conjunctive} \\
\text{ac } C[\text{CONJ}] (\uparrow \text{COORD}) &= \text{contrastive}
\end{align*}
\]

• Clause typing rules out simultaneous topicalization and C-head conjunction

\[
\text{(5) a. } [CP \text{ Mary } [IP \text{ I like }]]. \quad \text{b. } *[CP \text{ Mary } [C' \text{ and } [IP \text{ I like }]]].
\]

• This captures the lower rates of topicalization in CCs

• Ordered sequence of pronouns above SpecIP

\[
\text{IP} \rightarrow \text{DP}[\text{proj}} (\uparrow \text{SUBJ}) <f (\uparrow \text{OBJ}) \uparrow = \downarrow
\]

\[
\text{(6) } \text{þeah ðe we hit eow nu seegn though we it you now say 'although we say it now to you'}
\]
\[
\text{(coaeliveÆLS[Ash_Wed]:11.2712)}
\]

• SpecIP is mostly a subject position but can also host some non-nominative material (Kemenade 1997)

\[
\text{(7) a. Gif } \text{þu } [\text{waetan} \text{ dest } \text{to if you fluid do to 'If you add some fluid'}}
\]
\[
\text{(colaece,Lch_Hl[1]:73.1.2.1980)}
\]

\[
\text{b. & } \text{þa oðre } [\text{ða dura} \text{ braecon þær adume and the others the doors broke there down 'And the others broke the doors'}}
\]
\[
\text{(cochronE,ChronE[Plummer]:1083.23.2787)}
\]

\[
\text{c. forþon } \text{þe } [\text{Gode} \text{ is his folc swybe leaf because God is his people very dear 'because the people is very dear to God'}}
\]
\[
\text{(coblick,HomS_14_[BlHom_4]:45.127.578)}
\]
• Full subjects normally topicalize

• With C-head conjunctions full subjects can occur low

• This captures the differences regarding pronoun distribution in MCs and CCs
3 Methodology

3.1 Periodization

- Use of a detailed Old English text chronology

3.2 Data collection

- A series of multivariate analyses used to investigate 10 specific hypotheses mainly regarding differing or identical rates of change (Kroch 1989)
- Data collection with the YCOE (Taylor et al. 2003) and PPCME2 (Kroch and Taylor 2000)
- Use of CorpusSearch's Coding function
- Statistical evaluation in $R$
4 Hypothesis testing

4.1 Regarding IP-headedness

- **H1 - Loss of I-final headedness**: The loss of I-final structures should be faster in CCs than in MCs. As C-head conjunctions decrease, more verbs move to \( C_0 \) and fewer I-final structures manifest themselves. The loss of C-head conjunctions should speed up the loss of I-final headedness in CCs.

- **H1 Procedure**

  1. Collection of V-to-I contexts; verbs in post-subject position
  2. Dependent variable:
     - Necessarily I-final clauses: preverbal overt subject plus a preverbal diagnostic element (nonfinite verb, heavy non-subject DP, AdjP, at least three phrases, PP plus any additional phrase, participial clause, separated particle or stranded preposition)
     - Other IP headedness: All other cases of V-to-I
  3. Independent variables: (i) period, (ii) clause type (MC, CC, subordinate clauses/SC)

- **Examples of different IP headedness**

  **a. Necessarily I-final**
  - ac ludeas hine eft  mið stanum ofwurpon
  - but Jews him again with stones off-threw
  - ‘But the Jews killed him afterwards with stones’ (comart1,Mart_1_[Herzfeld-Kotzor]:De26,A.4.71)

  **b. Other IP-headedness**
  - Sancta Margareta him andswerode
  - Saint Margaret him answered
  - ‘St. Margaret answered him’ (comargaC,LS_14_[MargaretCCCC_303]:7.8.98)

- **I-final headedness is lost faster in CCs than in MCs and SCs**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald (( x^2 ))</th>
<th>df</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>1.963</td>
<td>38.33</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period</td>
<td>-0.179</td>
<td>53.77</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(CC)</td>
<td>2.420</td>
<td>38.39</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(SC)</td>
<td>1.998</td>
<td>37.37</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period:Type(CC)</td>
<td>-0.163</td>
<td>16.50</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period:Type(SC)</td>
<td>-0.016</td>
<td>0.22</td>
<td>1</td>
<td>0.6396</td>
</tr>
</tbody>
</table>

  ![Graph](image.png)
• **H2 - Separation effects in I-final structures**: The frequency and development of I-final structures should be sensitive to the position of the conjunction. If the conjunction can be analyzed as a C-head, one would expect more I-final structures and a faster rate of change than in MCs. If the conjunction must be a logical connector, one would expect the same frequency of I-final structures and the same rate of change as in MCs. A conjunction must be a logical connector where it is separated from the IP.

• **H2 Procedure**

1. Collection of V-to-I contexts; verbs in post-subject position
2. Pronominal subjects only; indication of IP boundary
3. The variable 'clause type' now has the variants MC, CC-separated, CC-adjacent
   - CC-separated = any constituent intervenes between conjunction and pronominal subject
   - CC-adjacent = conjunction and pronominal subject are immediately adjacent

4. dependent variable:
   - Necessarily I-final clauses
   - Other IP headedness: All other cases of V-to-I

5. independent variables: (i) period, (ii) clause type

• Examples of separated and adjacent CCs

(9) a. **CC-separated: necessarily logical connector**

   & [PP on ðæm seofoðan dæge] he geendode his weorc.
   and on the seventh day he ended his work
   'And on the seventh day, he finished his creation'
   (cogathom1.ÆCHom,1:182.95.90)

b. **CC-adjacent: potential C-head conjunction**

   and he ðæ mid geleafan his lif geendode.
   and he then with belief his life ended
   'And he then ended his life with faith'
   (coaelive,ÆLS[Maccabees]:104.4880)

• Only CC-adjacent shows a high frequency of I-final structures

<table>
<thead>
<tr>
<th>Clause type</th>
<th>I-final</th>
<th>Other</th>
<th>I-final</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>728</td>
<td>13119</td>
<td>5.26%</td>
<td>94.74%</td>
</tr>
<tr>
<td>CC-separated</td>
<td>318</td>
<td>4003</td>
<td>5.16%</td>
<td>94.84%</td>
</tr>
<tr>
<td>CC-adjacent</td>
<td>1393</td>
<td>7563</td>
<td>15.55%</td>
<td>84.45%</td>
</tr>
</tbody>
</table>

\[
\chi^2 = 682.21, \text{ df } = 1, \ p < 0.001^{***} \\
\chi^2 = 287.59, \text{ df } = 1, \ p < 0.001^{***} \\
\]

\[
\chi^2 = 0.04, \text{ df } = 1, \ p = 0.843 \\
- \]

7
CCs-separated and MCs behave alike; only CCs-adjacent lose I-final headedness faster

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald (z^2)</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>2.051</td>
<td>19.47</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period</td>
<td>-0.496</td>
<td>108.58</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(CC-Separate)</td>
<td>0.954</td>
<td>1.57</td>
<td>1</td>
<td>0.2100</td>
</tr>
<tr>
<td>Type(CC-Adjacent)</td>
<td>3.613</td>
<td>32.86</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period:Type(CC-Separate)</td>
<td>-0.075</td>
<td>0.94</td>
<td>1</td>
<td>0.3363</td>
</tr>
<tr>
<td>Period:Type(CC-Adjacent)</td>
<td>-0.247</td>
<td>14.51</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
</tbody>
</table>

**H3 - Constant Rate Effect in I-initial headedness**: The rise of I-initial headedness as measured by postverbal diagnostic elements should proceed at the same speed in both clause-types. The application of postverbal diagnostics is independent of C-head conjunctions.

**H3 Procedure**

1. Collection of V-to-I contexts; verbs in post-subject position
2. dependent variable:
   - Necessarily I-initial clauses: preverbal overt subject plus a postverbal diagnostic element (pronouns, particles)
   - Other IP headedness: Other V-to-I clauses that contain particles and/or pronouns
3. independent variables: (i) period, (ii) clause type (MC, CC), (iii) diagnostic type (pronouns, particles)

**Examples of necessarily I-initial clauses (Pintzuk 1999)**

(10)  

a. *Postverbal pronoun*

Ond he þa  

**dypte**  

**hi**  

þriwa on  

dære  

dæe  

and he then dipped her thrice in the  

sea

‘And he then immersed her three times in the sea’

(comart3,Mart_5,[Kotzor:].Jy19,A.21.1202)

b. *Postverbal particle*

ac  

se  

hiafard  

ana  

**færoð** in  

þurh  

þæt  

geat.  

but the Lord  

alone travels in  

through that gate’

‘But the Lord alone will come in through that gate’

(cocathom1,.ÆCHom_I.13:282.28.2369)
• The increase in I-initial headedness proceeds at the same speed in MCs and CCs

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald (z^2)</th>
<th>df</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-10.000</td>
<td>505.17</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period</td>
<td>0.927</td>
<td>440.03</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(CC)</td>
<td>-1.048</td>
<td>3.02</td>
<td>1</td>
<td>0.082</td>
</tr>
<tr>
<td>Diagnostic(Particle)</td>
<td>-0.571</td>
<td>78.07</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period:Type(CC)</td>
<td>0.079</td>
<td>1.75</td>
<td>1</td>
<td>0.1836</td>
</tr>
</tbody>
</table>

4.2 Regarding V-to-C movement

• **H4 - Different rates of loss of V-to-C movement**: MCs should lose V-to-C movement faster than CCs. As C-head conjunctions decrease, the C position becomes a potential verb position more frequently, compensating for the loss of V-to-C movement in CCs. This is the inverse pattern of the development of I-final headedness.

• **H4 Procedure**

1. Collection of all sentences with pronominal subjects

2. dependent variable:
   - **verb - subject** indicates V-to-C
   - **subject - verb** indicates V-to-I

3. independent variables: (i) period, (ii) clause type (MC, CC), (iii) polarity (positive, negative), (iv) initial constituent (pa/ponne, Null, Other)
• When all contexts are considered jointly, V-to-C movement is lost faster in MCs than CCs

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald ($z^2$)</th>
<th>df</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>3.105</td>
<td>448.59</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period</td>
<td>-0.389</td>
<td>690.11</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(CC)</td>
<td>-4.281</td>
<td>3402.03</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period:Type(CC)</td>
<td>0.270</td>
<td>142.80</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
</tbody>
</table>

• In Neg V1 clauses, V-to-C movement is lost faster in MCs than CCs

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald ($z^2$)</th>
<th>df</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>9.976</td>
<td>215.91</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period</td>
<td>-0.873</td>
<td>168.74</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(CC)</td>
<td>-6.313</td>
<td>25.06</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period:Type(CC)</td>
<td>0.320</td>
<td>6.33</td>
<td>1</td>
<td>0.0121</td>
</tr>
</tbody>
</table>
• In positive V1 clauses, V-to-C movement is lost faster in MCs than CCs

• Examples of Pos V1

(11) a. Imperative-like subjunctives
   And sy þu geclaensod
   and be.sbjctv you cleansed
   'And may you be cleansed’
   (cocathom1,ECHom1,8:241.9.1391)

b. Narrative inversion
   Wæron hie nigon fota uplonge
   Were they nine feet up-long
   'They were nine feet tall’
   (cosalex,Alex:29.3.346)

• V-to-C after pa/ponne (as a percentage of all clauses) is lost faster in MCs than CCs
• **H5 - V-to-C Separation effects**: MCs should lose V-to-C movement at the same rate as CCs where C-head conjunctions are impossible. This is the case if a constituent separates the conjunction from the IP. In such separation contexts, the conjunction cannot possibly be in C₀ but must be an innovative logical connector instead.

• **H5 Procedure**

  1. Collection of all sentences with pronominal subjects
  2. **dependent variable:**
     - *verb - subject* indicates V-to-C
     - *subject - verb* indicates V-to-I
  3. The variable clause type now has the variants:
     - MCs
     - CCs with separating constituents
  4. Separating constituents are: subordinate clauses, vocatives, interjections, left-dislocations
  5. **independent variables:** (i) period, (ii) clause type (MC, CC)

• **Examples of CCs with separating constituents**

  (12) a. *Ac [CP siðan ic hyt þa ongyten hæfde], þa forlæt ic þa sceawunga mid þam eagum*  
  
  But when I it then understood had, then abandoned I the looking with the eyes  
  'But when I had understood it, I stopped looking'  
  (cosolilo,Solil_1:22.7.284)

  b. *& [DP se þe of þam hlæfe geet]; ne swylt he; on ecnyssæ*  
  
  and he who of the loaf eats, not dies he in eternity  
  'He who eats of the bread will not die in eternity'  
  (cocathom1,ÆCHom_L_2:192.82.362)

• MCs and CCs with separating constituents change at the same rate
• **H6 - Separation effect with operator adverbs**: The same reasoning applies to initial operator adverbs. The option to place these adverbs in initial position is affected by the presence of C-head conjunctions. But once only cases are considered where there is in fact a clause initial *pa / ponne*, conjunctions cannot be in C⁰ but must necessarily be logical connectors.

• **H6 Procedure**
  1. Collection of all sentences with pronominal subjects and initial *pa/ponne*
  2. Dependent variable:
      - *pa/ponne - verb - subject* indicates V-to-C
      - *pa/ponne - subject - verb* indicates V-to-I
  3. Independent variables: (i) period, (ii) clause type (MC, CC)

• Operator adverbs are incompatible with C-head conjunctions

\[
\begin{array}{c}
\text{CONJ} \\
\text{CP} \\
\text{IP}
\end{array}
\]

\[
\begin{array}{c}
\text{AdjP} \\
\text{pa / ponne}
\end{array}
\]

• V-to-C movement after *pa/ponne* is lost at the same rate in MCs and CCs

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald (z²)</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>11.206</td>
<td>772.06</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
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<td>Period</td>
<td>-0.808</td>
<td>535.29</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(CC)</td>
<td>-1.428</td>
<td>4.21</td>
<td>1</td>
<td>0.040*</td>
</tr>
<tr>
<td>Period:Type(CC)</td>
<td>0.024</td>
<td>0.00</td>
<td>1</td>
<td>0.672</td>
</tr>
</tbody>
</table>

• Examples of variation in verb placement after operator adverbs in late Middle English

(13) a. And thenne he roode forthe unto Plasche;
    (CMGREGOR,95.10)

    b. And thenne wente he uppe agayne in to the schaffolde
    (CMGREGOR,167.933)
4.3 Regarding topicalization

- **H7 - Frequency of topicalization**: Topicalization should be less frequent in CCs than in MCs. C-head conjunctions do not allow another constituent to occur in SpecCP.

- **H7 Procedure**
  1. word order variable:
     - (conjunction) ... full object - subject pronoun ... verb
     - (conjunction) ... subject pronoun ... full object + verb
  2. clause type variable: MCs vs. CCs

- Examples of object placement

  (14) a. \([CP \text{Mannum} [IP he sealed uprihtne gang]]\]
      men he gave upright walking
      ‘He allowed mankind to walk upright’
      (cocathom1,ECHom,1_20:335.14.3834)

  b. and \([IP he gyfð eac \text{mannum menega and mislicum gooda gifa}]\]
     and he gives also men many and diverse good gifts
     ‘And he also gives many good gifts to mankind’
     (cosolilo,Solil,1:54.2.693)

- Frequency of object topicalization in OE/ME is different in MCs and CCs

<table>
<thead>
<tr>
<th>Period</th>
<th>OBJ - spro</th>
<th>spro ... OBJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>1001 (c. 17%)</td>
<td>4791</td>
</tr>
<tr>
<td>CC</td>
<td>614 (c. 11%)</td>
<td>5102</td>
</tr>
</tbody>
</table>

\(x^2=101.5, df = 1, p<0.001*** \text{ Cramer’s V = 0.0942}\)

4.4 Regarding pronominal scrambling

- **H8 - Difference in non-subject pronoun - full subject orders**: The word order non-subject pronoun - full subject should exist in CCs but not in MCs. Full subjects usually topicalize to SpecCP, thus preceding high non-subject pronouns. Where a C-head conjunctions blocks topicalization, a full subject may occur low, following high non-subject pronouns.

- **H8 Procedure**
  1. three contexts for word order variable:
     - With a postverbal diagnostic element
       (conjunction) - pronoun - full subject ... verb ... diagnostic
       (conjunction) - full subject -pronoun ... verb ... diagnostic
     - With a one-word element in postverbal position
       (conjunction) - pronoun - full subject ... verb ... 1W-element
       (conjunction) - full subject - pronoun ... verb ... 1W-element
     - All contexts
       (conjunction) - pronoun - full subject ... verb
       (conjunction) - full subject -pronoun ... verb
  2. clause type variable: MCs vs. CCs
• Example of *Non-subject pronoun - full subject ... verb ... diagnostic order*

(15) **ne hine ure nan** ne geseah næfre mid his eagan
nor him us none not saw never with his eyes

'Nor did any of us ever see him with their own eyes'
(cosevensl,LS,34,SevenSleepers:564.443)

\[
\text{CP[CONJ]} \\
\text{C'[CONJ]} \\
\text{C[CONJ]} \quad \text{IP} \\
\quad \text{DP[pro]} \quad \text{IP} \\
\quad \quad \text{hine} \quad \text{DP} \quad \text{I} \\
\quad \quad \quad \text{ure nan} \quad \text{I} \quad \text{VP} \\
\quad \quad \quad \quad \text{NEG} \quad \text{I} \quad \text{nan geseah} \quad \text{næfre} \ldots ...
\]

• The order *pronoun - full subject* is common only in CCs

Diagnostic:

<table>
<thead>
<tr>
<th>Clause type</th>
<th>pro - S</th>
<th>S - pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>0</td>
<td>86</td>
</tr>
<tr>
<td>CC</td>
<td>3</td>
<td>51</td>
</tr>
</tbody>
</table>

Fisher’s Exact Test, \( p = 0.055 \)

1-word-element:

<table>
<thead>
<tr>
<th>Clause type</th>
<th>pro - S</th>
<th>S - pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>3</td>
<td>235</td>
</tr>
<tr>
<td>CC</td>
<td>23</td>
<td>170</td>
</tr>
</tbody>
</table>

\( \chi^2 = 19.5, \text{ df } = 1, \ p < 0.001^{***} \)

All contexts:

<table>
<thead>
<tr>
<th>Clause type</th>
<th>pro - S</th>
<th>S - pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>22</td>
<td>889</td>
</tr>
<tr>
<td>CC</td>
<td>165</td>
<td>747</td>
</tr>
</tbody>
</table>

\( \chi^2 = 119.98, \text{ df } = 1, \ p < 0.001^{***} \)
**H9 - pronoun - Subject orders in earlier and later texts:** The word order non-subject pronoun - full subject in CCs should be more common in earlier than in later texts. As C-head conjunctions become increasingly uncommon, full subjects usually topicalize to SpecCP, thereby preceding non-subject pronouns.

**H9 Procedure**

1. Comparison of word order in CCs
2. word order variable:
   - conjunction - pronoun - full subject ... verb
   - conjunction - full subject - pronoun ... verb
3. period variable: early vs. late Old English

**Examples of CCs with pro - SUBJ and SUBJ - pro order**

(16) a. pro - SUBJ
   & mec pas elcordegan nu her bysmergea.  
and me these foreigners now here mock
   ’And these foreigners are now mocking me here’
   (coalex,Alex:33.1.416)

b. SUBJ - pro
   ac heora ingehyd heo þraestð heora wites to ecan.  
but their mind them torments their punishment to increase
   ’But their mind torments them as an increase of their punishment’
   (coalcuin,Alec,Warn:35):340.246

**pronoun - Subject order declines in Old English CCs**

<table>
<thead>
<tr>
<th>Period</th>
<th>pro - SUBJ</th>
<th>SUBJ - pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>early</td>
<td>106 (c. 35%)</td>
<td>201</td>
</tr>
<tr>
<td>late</td>
<td>59 (c. 10%)</td>
<td>546</td>
</tr>
</tbody>
</table>

$\chi^2=82.7$, df = 1, $p<0.001$***

**H10 - Decline of pronominal scrambling:** High pronominal scrambling should decline at the same rate in all clause types. While the relative order of full subject and non-subject pronoun is affected by C-head conjunctions, high pronoun placement itself is not.

**H10 Procedure**

1. Collection of V-to-I contexts; verb in post-subject position
2. dependent variable:
   - scrambling
     subject + pronoun ... X ... verb
     subject + pronoun ... verb ... one-word-element
   - no scrambling
     subject ... X ... pronoun ... verb
     subject ... verb ... pronoun
3. independent variable: (i) period, (ii) clause type (MC, CC, SC)
- Examples of Scrambling / No scrambling in MC:

(17) a. Scrambling

*se* hi *eft* siððan to hire agenre hengene gelærde
he her again then to her own hanging seduced

‘He seduced her then to her own hanging’
(cocathom2,ÆCHom,II,2:15.122.357)

b. No scrambling

*bæs* witodlice him brohton gold & *stor*
these truly him brought gold and incense

‘Truly, these brought him gold and incense’
(cocathom1,ÆCHom,I,7:239.215.1351)

- Examples of Scrambling / No scrambling in CCs

(18) a. Scrambling

& *hine* se *geatwerd* ne wolde in forlætan
and him the gate-keeper not would in let

‘And the gate-keeper would not let him in’
(coverhom,HomS,24[ScraggVerc]:22.22)

b. No scrambling

*and* *se* *fæond* ne mihte *hine* syððan of ðære cyrcan lædan
and the fiend not could him then of the church lead

‘And the devil could not lead him from the church’
(cocathom2,ÆCHom,II,11:95.113.1960)

- High pronominal scrambling is lost at the same rate in all clause types

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald (χ²)</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>8.004</td>
<td>221.00</td>
<td>1</td>
<td>&lt;0.001 ***</td>
</tr>
<tr>
<td>Period</td>
<td>-0.864</td>
<td>253.70</td>
<td>1</td>
<td>&lt;0.001 ***</td>
</tr>
<tr>
<td>Type(CC)</td>
<td>1.037</td>
<td>1.48</td>
<td>1</td>
<td>0.223</td>
</tr>
<tr>
<td>Type(SC)</td>
<td>2.432</td>
<td>12.33</td>
<td>1</td>
<td>&lt;0.001 ***</td>
</tr>
<tr>
<td>Period:Type(CC)</td>
<td>-0.047</td>
<td>0.30</td>
<td>1</td>
<td>0.5856</td>
</tr>
<tr>
<td>Period:Type(SC)</td>
<td>-0.124</td>
<td>3.16</td>
<td>1</td>
<td>0.0752</td>
</tr>
</tbody>
</table>

![Graph showing the proportion of high-pronominal scrambling over time with different types of clauses and their associated slopes.](image)
5 Conclusion

- Extensions:
  1. More ME periods
  2. Etymology of conjunctions
  3. Discourse factors
  4. Different conjunction types
  5. 'Text' as a random effect

- A 'grammar' is a set of instructions to build constituent structure. Probabilistic constraints operate on constituency, leading to Constant Rate Effects and other "variable rules" phenomena. Probabilistic constraints are therefore secondary to a competence-based theory of grammar.

References


