Old English conjoined main clauses revisited

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SHES 11

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Clause type effects in Old English
  - Observations
  - Formal Analysis

Methodology
  - Periodization
  - Data collection

Hypothesis testing
  - Regarding IP-headedness
  - Regarding V-to-C movement
  - Regarding pronominal scrambling

Conclusion
Main vs. conjoined clauses

- Main (MC) and conjoined main (CC) clauses behave differently in three syntactic areas:
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  1. **IP-headedness**: CCs are more commonly verb-final than MCs, but not nearly as often as subordinate clauses.
  2. **V-to-C movement**: MCs show higher rates of high verb placement than CCs.
  3. **Pronominal scrambling**: MCs and CCs differ in their behaviour regarding non-subject pronouns.
(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_l,13:284.110.2451)

b. & þæt folc nugyt þæt tacn Iosepes
and that people now-yet that token Joseph
gesetnesse æfterfylgeað
law after-follows
'And the people still follow that aspect of Joseph’s law'
(coorosiu,Or_1:5.24.13.472)
V-to-C movement

(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)
Pronominal scrambling

(3) a. & God hine ða genam of þisum life upp and God him then took of this life up 'And God then lifted him up from this life' (colsigewZÆLet.4_[SigewardZ]:182.64)

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

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

d. ?* Him Scipia sende sciphere æfter
Conjunctions can be C heads

Variation between C-head conjunctions and logical connectors
(4)  a. *CPs can have various types*

\[
CP[-\text{type}] = \{CP[\text{TOPIC}], CP[\text{CONJ}], \ldots \ CP[\text{REL}]\}
\]

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

\[
\begin{align*}
CP[-\text{type}] & \rightarrow XP \\
& \left(\uparrow\text{TOPIC}\right)=\downarrow \\
& \left(\uparrow\text{TOPIC}\right)=\left(\uparrow\text{GF}^* \ \text{GF}\right) \\
C'[\_\text{type}] & \uparrow=\downarrow \\
\text{[\_type]}=\text{TOPIC}
\end{align*}
\]

c. *Otherwise the type is left unspecified*

\[
\begin{align*}
CP[-\text{type}] & \rightarrow C'[\_\text{type}] \\
& \uparrow=\downarrow \\
C'[\_\text{type}] & \rightarrow C[\_\text{type}] \\
& \uparrow=\downarrow \\
C[\_\text{type}] & \rightarrow \text{IP} \\
& \uparrow=\downarrow \\
\end{align*}
\]

d. *C-head conjunctions in the lexicon type a CP as CONJ*

\[
\begin{align*}
\text{and} & \quad C[\text{CONJ}] \ (\uparrow\text{COORD})=\text{conjunctive} \\
\text{ac} & \quad C[\text{CONJ}] \ (\uparrow\text{COORD})=\text{contrastive} \\
\ldots
\end{align*}
\]
No simultaneous topicalization and C-head conjunction

(5) a. $[\text{CP} \quad \text{Mary} \quad [\text{IP} \quad \text{I like }]]$

b. $*[\text{CP} \quad \text{Mary} \quad [\C’ \quad \text{and} \quad [\text{IP} \quad \text{I like }]]]$
Pronoun positions

(6) a. þeah þe we hit eow nu secgan
   though we it you now say
   ’although we say it now to you’
   (coaelive,ÆLS[Ash_Wed]:11.2712)

b. *Ordered sequence of pronouns above SpecIP*

\[
\begin{align*}
\text{IP} & \rightarrow \quad \text{DP[pro]} & \text{IP} \\
(\uparrow \text{SUBJ}) & < f (\uparrow \text{OBJ}) & \uparrow = \downarrow
\end{align*}
\]
SpecIP - subject or topic position?

(7) a. Gif þu [wætan] dest to
      if you fluid do to
      'If you add some fluid'
      (colaece,Lch_II-[1]:73.1.2.1980)

b. & þa oðre [ða dura] bræcon þær adune
    and the others the doors broke there down
    'And the others broke the doors'
    (cochronE,ChronE_[Plummer]:1083.23.2787)

c. forþon þe [Gode] is his folc swyþe leof
    because God is his people very dear
    'because the people is very dear to God'
    (coblick,HomS_14_[BlHom_4]:45.127.578)
Full subjects normally topicalize
With C-head conjunctions full subjects occur low
Early English text chronology
A series of multivariate analyses

- Data collection with the YCOE (Taylor et al. 2003) and PPCME2 (Kroch and Taylor 2000)
A series of multivariate analyses

- Data collection with the YCOE (Taylor et al. 2003) and PPCME2 (Kroch and Taylor 2000)
- Use of CorpusSearch’s Coding function
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- Use of CorpusSearch’s Coding function
- Statistical evaluation in R
- Investigation of many specific hypotheses
A series of multivariate analyses

- 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
- Investigation of many specific hypotheses
- For time reasons, focus on only 5 of those hypotheses
H1: The loss of I-final structures should be faster in CCs than in MCs. As C-head conjunctions decrease, more verbs move to C⁰ and fewer I-final structures manifest themselves. The loss of C-head conjunctions should speed up the loss of I-final headedness.
H1 Procedure

1. Collection of V-to-I contexts; verbs in post-subject position
H1 Procedure

1. Collection of V-to-I contexts; verbs in post-subject position
2. dependent variable:
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)
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   - Other IP headedness: All other cases of V-to-I
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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)
IP headedness illustrated

(8) a. *Necessarily I-final*

> ac Iudeas 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_[MargaretCCCCC_303]:7.8.98)
Development of I-final headedness in three clause types

<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>1.903</td>
<td>38.33</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period</td>
<td>-0.479</td>
<td>231.77</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Type(CC)</td>
<td>2.429</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>0.6360</td>
</tr>
</tbody>
</table>

- **Main clauses**: slope = -0.479
- **Conjoined clauses**: slope = -0.642
- **Subordinate clauses**: slope = -0.494
H2: 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
H2 Procedure

1. Collection of V-to-I contexts; verbs in post-subject position
2. Pronominal subjects only; indication of IP boundary
H2 Procedure

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3. The variable ’clause type’ now has the variants MC, CC-separated, CC-adjacent
H2 Procedure

1. Collection of V-to-I contexts; verbs in post-subject position
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3. The variable 'clause type' now has the variants MC, CC-separated, CC-adjacent
   - CC-separated = any constituent intervenes between conjunction and pronominal subject
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
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4. independent variables: (i) period, (ii) clause type
Separated and adjacent CCs

(9)  

a. \textit{CC-separated: necessarily logical connector}

\[ \& \quad [PP \text{ on } \text{ðam seofoðan dæge}] \text{he geendode his and on the seventh day he ended his weorc.} \]

'And on the seventh day, he finished his creation’
(cocathom1,ÆCHom_I,1:182.95.90)

b. \textit{CC-adjacent: potential C-head conjunction}

\text{and he ða mid geleafan his lif geendode.} \text{and he then with belief his life ended}

'And he then ended his life with faith’
(coaelive,ÆLS_[Maccabees]:104.4880)
CC-adjacent show high frequency of I-final structures

### Contingency table

<table>
<thead>
<tr>
<th>Clause type</th>
<th>I-final</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>728</td>
<td>13119</td>
</tr>
<tr>
<td>CC-separated</td>
<td>318</td>
<td>4003</td>
</tr>
<tr>
<td>CC-adjacent</td>
<td>1393</td>
<td>7563</td>
</tr>
</tbody>
</table>

### Proportion table

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

### Significance levels

<table>
<thead>
<tr>
<th></th>
<th>MC</th>
<th>CC-separated</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC-adjacent</td>
<td>$\chi^2 = 682.21, \text{ df } = 1, p &lt; 0.001^{***}$</td>
<td>$\chi^2 = 287.59, \text{ df } = 1, p &lt; 0.001^{***}$</td>
</tr>
<tr>
<td>CC-separated</td>
<td>$\chi^2 = 0.04, \text{ df } = 1, p = 0.843$</td>
<td>-</td>
</tr>
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</table>
Development of I-final headedness with two CC-types

<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>0.3325</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>
Different rates of loss of V-to-C movement

- **H3**: 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.
1. Collection of all sentences with pronominal subjects
H3 Procedure

1. Collection of all sentences with pronominal subjects
2. dependent variable:
H3 Procedure

1. Collection of all sentences with pronominal subjects
2. dependent variable:
   - *verb - subject* indicates V-to-C
H3 Procedure

1. Collection of all sentences with pronominal subjects
2. dependent variable:
   - $verb - subject$ indicates V-to-C
   - $subject - verb$ indicates V-to-I
H3 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 (ba/bonne, Null, Other)
Development of V-to-C movement - All contexts

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald (z^2)</th>
<th>df</th>
<th>p</th>
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<tbody>
<tr>
<td>(Intercept)</td>
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<td>448.59</td>
<td>1</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>Period</td>
<td>-0.389</td>
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<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>
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</table>
Development of V-to-C movement - Neg V1

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald ($z^2$)</th>
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<th>p</th>
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<td>1</td>
<td>&lt;0.001***</td>
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<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>
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<tr>
<td>Period:Type(CC)</td>
<td>0.320</td>
<td>6.33</td>
<td>1</td>
<td>0.012*</td>
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</table>
Separation effects

- **H4**: 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 $C^0$ but must be an innovative logical connector instead.
Separation prevents C-head conjunctions
H4 Procedure

1. Collection of all sentences with pronominal subjects
H4 Procedure

1. Collection of all sentences with pronominal subjects
2. dependent variable:
H4 Procedure

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

(10)  a. Ac  \([CP\ sið\pan\ ic\ hyt\ þa\ ongyten\ hæfde],\ þa\nBut\ when\ I\ it\ then\ understood\ had,\ then\nforlæt\ ic\ þa\ sceawunga\ mid\ þam\ eagum\abandoned\ I\ the\ looking\ with\ the\ eyes\'But\ when\ I\ had\ understood\ it,\ I\ stopped\ looking’\(\text{cosolilo},\text{Solil}_1:22.7.284)\n
b.  &  \([DP\ se\ ðe\ of\ þam\ hlaf\ geet]_i.\ ne\ swylt\ he_i\and\ he\ who\ of\ the\ loaf\ eats,\ not\ dies\ he\on\ ecnysse.\in\ eternity\’He who eats of the bread will not die in eternity’\(\text{cocathom1},\ÆCHom\_1,\_2:192.82.362)
MCs and CCs with separating constituents

<table>
<thead>
<tr>
<th>Factor</th>
<th>Estimate</th>
<th>Wald (z^2)</th>
<th>df</th>
<th>p</th>
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<td>&lt;0.001***</td>
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<td>0.0985</td>
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<tr>
<td>Period:Type(CC)</td>
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<td>0.3191</td>
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</tbody>
</table>
**H5:** 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.
1. Comparison of *pronoun* - *Subject* vs. *Subject* - *pronoun* orders
H5 Procedure

1. Comparison of pronoun - Subject vs. Subject - pronoun orders
2. three contexts for word order variable:
1. Comparison of *pronoun* - *Subject* vs. *Subject* - *pronoun* orders
2. three contexts for word order variable:
   - With a postverbal diagnostic element
     (conjunction) - *pronoun* - full subject ... verb ... diagnostic
     (conjunction) - full subject - *pronoun* ... verb ... diagnostic
   - All contexts (conjunction) - pronoun - full subject ... verb
     (conjunction) - full subject - pronoun ... verb
H5 Procedure

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   - With a postverbal diagnostic element
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     - (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
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     (conjunction) - full subject - pronoun ... verb
3. clause type: MCs vs. CCs
CCs with *pro - SUBJ* and *SUBJ - pro* order

(11) a. *pro - SUBJ*

& mec þas elreordegan nu her bysmergeað.
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 þræsteð heora
but their mind them torments their
wites to ecان.
punishment to increase

’But their mind torments them as an increase of their
punishment’ (coalcuin,Alc.[Warn_35]:340.246)
The order *pronoun - full subject* is common 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, $p = 0.055$

- **1W-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>

$\chi^2=19.5$, $df = 1$, $p<0.001^{***}$

- **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>

$\chi^2=119.98$, $df = 1$, $p<0.001^{***}$
Conclusion

Extensions:
Conclusion

Extensions:

1. Etymology
Conclusion

▶ Extensions:

1. Etymology
2. Discourse factors
Conclusion

Extensions:
1. Etymology
2. Discourse factors
3. Different conjunction types
Conclusion

- Extensions:
  1. Etymology
  2. Discourse factors
  3. Different conjunction types
  4. 'Text' as a random effect
Conclusion

- **Extensions:**
  1. Etymology
  2. Discourse factors
  3. Different conjunction types
  4. 'Text' as a random effect

- **Constituent structure and Constant Rate Effects**
MCs and CCs: Similar surfers, different waters

Thank you for your attention!