Old English conjoined main clauses revisited

Richard Zimmermann
Université de Genève
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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_I,_13:284.110.2451)

b. & þæt folc nugyt þæt tacn Iosepes gesetnesse **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 geseoð <u>næfre</u>
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 <u>næfre</u> oþþe 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 ða 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_[SigeweardZ]:182.64)

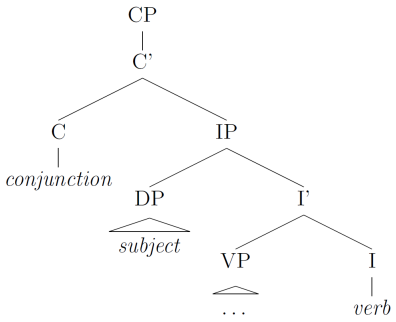
b. **Iosue** him ða feng on mid gefeohte
Joseph him then received with fighting
'Joseph then attacked him'
(cootest,Josh:10.9.5447)

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

2 Formal Analysis

- Conjunctions can be C-heads



- 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

$$\text{CP[\_type]} = \{\text{CP[TOPIC]}, \text{CP[CONJ]}, \ldots \text{CP[REL]}\}$$

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

$$\begin{array}{lccc} \text{CP[\_type]} \rightarrow & \text{XP} & & \text{C'[\_type]} \\ & (\uparrow\text{TOPIC})=\downarrow & & \uparrow=\downarrow \\ & (\uparrow\text{TOPIC})=(\uparrow\text{GF}^*\ \text{GF}) & & \text{[\_type]=TOPIC} \end{array}$$

- Otherwise the type is left unspecified

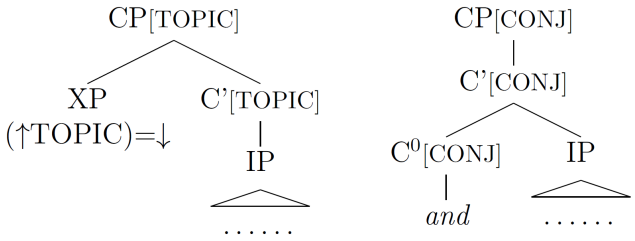
$$\begin{array}{lcc} \text{CP[\_type]} \rightarrow & \text{C'[\_type]} & \\ & \uparrow=\downarrow & \\ \text{C' [\_type]} \rightarrow & \text{C[\_type]} & \text{IP} \\ & \uparrow=\downarrow & \uparrow=\downarrow \end{array}$$

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

$$\begin{array}{ll} \textit{and} & \text{C[CONJ]}\ (\uparrow\text{COORD})= \text{conjunctive} \\ \textit{ac} & \text{C[CONJ]}\ (\uparrow\text{COORD})= \text{contrastive} \\ \ldots & \end{array}$$

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

(5) a. $[_{CP}$ Mary $[_{IP}$ I like]].
b. *$[_{CP}$ Mary $[_{C'}$ and $[_{IP}$ I like]]].



- This captures the lower rates of topicalization in CCs
- Ordered sequence of pronouns above SpecIP

$$\begin{array}{lccc} \text{IP} \rightarrow & \text{DP[pro]} & & \text{IP} \\ & (\uparrow \text{SUBJ}) & <f\ (\uparrow \text{OBJ}) & \uparrow = \downarrow \end{array}$$

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

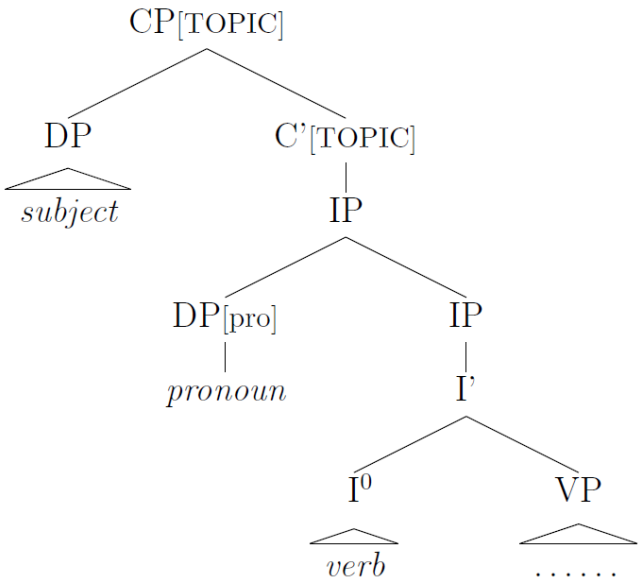
- SpecIP is mostly a subject position but can also host some non-nominative material (Kemenade 1997)

(7) a. Gif þu [wætan] dest <u>to</u>
if you fluid do to
'If you add some fluid'
(colaece,Lch_II_[1]:73.1.2.1980)

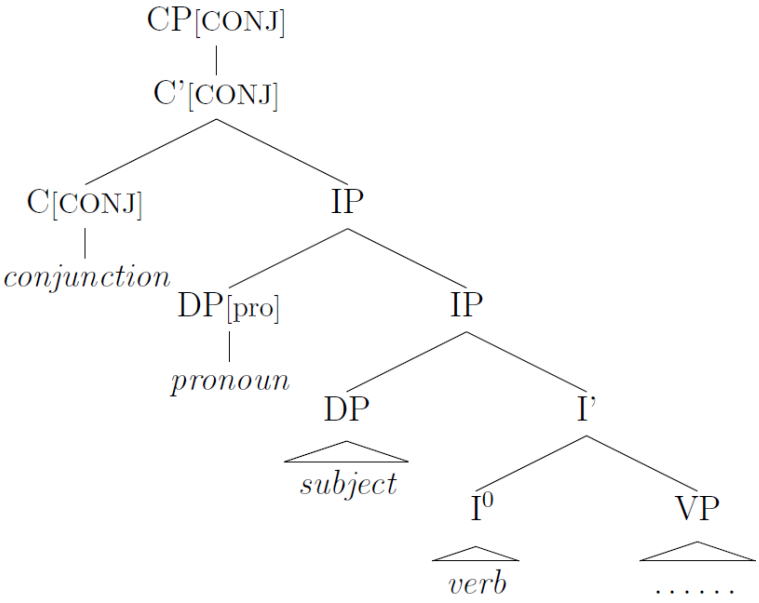
b. & þa oðre [ða dura] bræcon þær <u>adune</u>
and the others the doors broke there down
'And the others broke the doors'
(cochronE,ChronE_[Plummer]:1083.23.2787)

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 can occur low

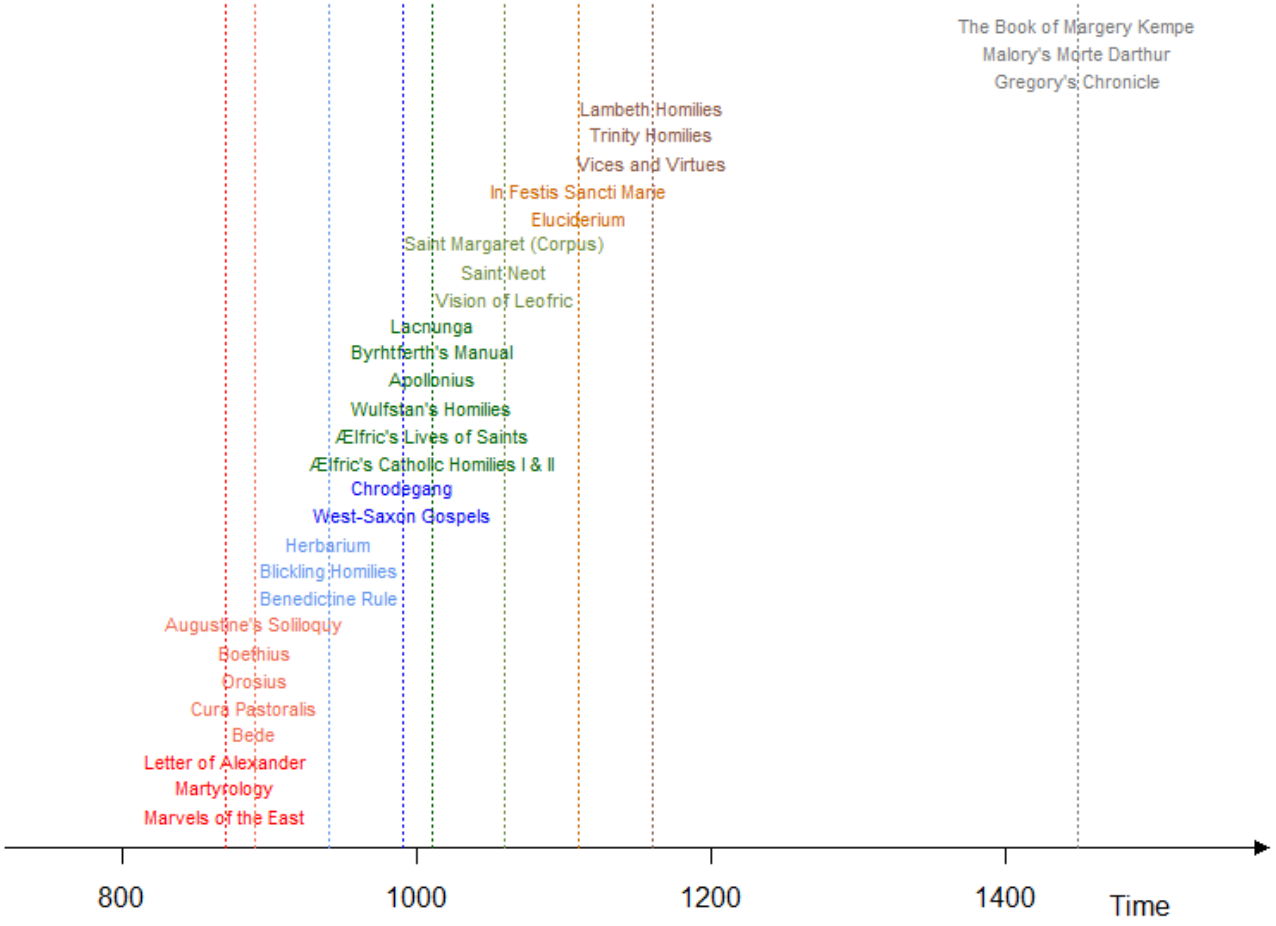


- This captues the differences regarding pronoun distribution in MCs and CCs

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

(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)

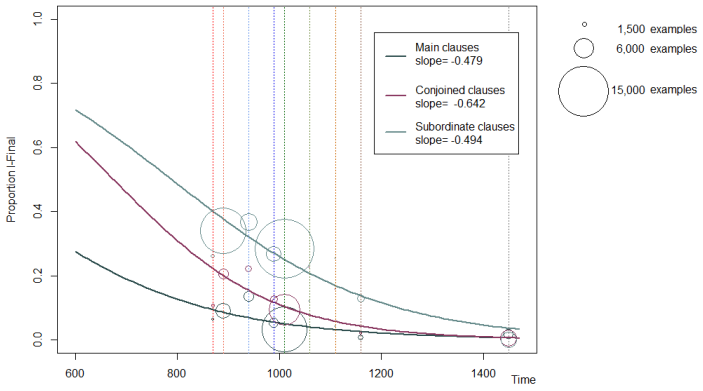
b. *Other IP-headedness*

Sancta Margareta him **andswerode**
Saint Margaret him answered

'St. Margaret answered him'
(comargaC,LS_14_[MargaretCCCC_303]:7.8.98)

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

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	1.903	38.33	1	<0.001***
Period	-0.479	231.77	1	<0.001***
Type(CC)	2.429	38.39	1	<0.001***
Type(SC)	1.998	37.37	1	<0.001***
Period:Type(CC)	-0.163	16.50	1	<0.001***
Period:Type(SC)	-0.016	0.22	1	0.6360



- **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 ðam seofoðan dæge] **he** geendode his weorc.
and on the seventh day he ended his work

'And on the seventh day, he finished his creation'
(cocathom1,ÆCHom_I,_1:182.95.90)

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

and **he** ða 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)

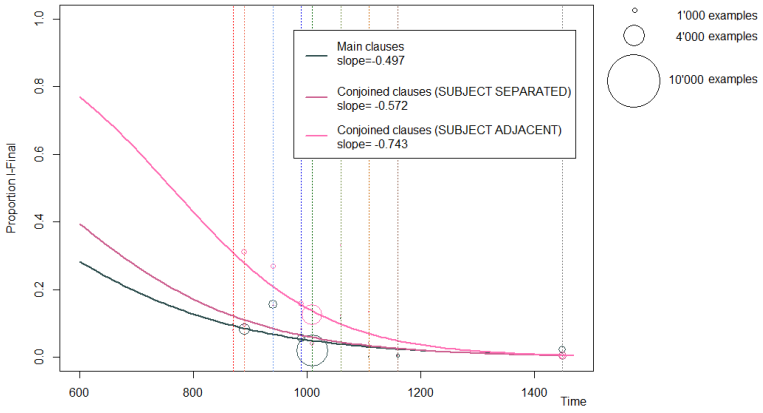
- Only CC-adjacent shows a high frequency of I-final structures

Clause type	I-final	Other	I-final	Other
MC	728	13119	5.26%	94.74%
CC-separated	318	4003	5.16%	94.84%
CC-adjacent	1393	7563	15.55%	84.45%

	MC	CC-separated
CC-adjacent	χ^2=682.21, df = 1, p<0.001***	χ^2=287.59, df = 1, p<0.001***
CC-separated	χ^2=0.04 , df = 1, p=0.843	-

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

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	2.051	19.47	1	<0.001***
Period	-0.496	108.58	1	<0.001***
Type(CC-Separate)	0.954	1.57	1	0.2100
Type(CC-Adjacent)	3.613	32.86	1	<0.001***
Period:Type(CC-Separate)	-0.075	0.94	1	0.3325
Period:Type(CC-Adjacent)	-0.247	14.51	1	<0.001***



- **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 ðære sæ
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)

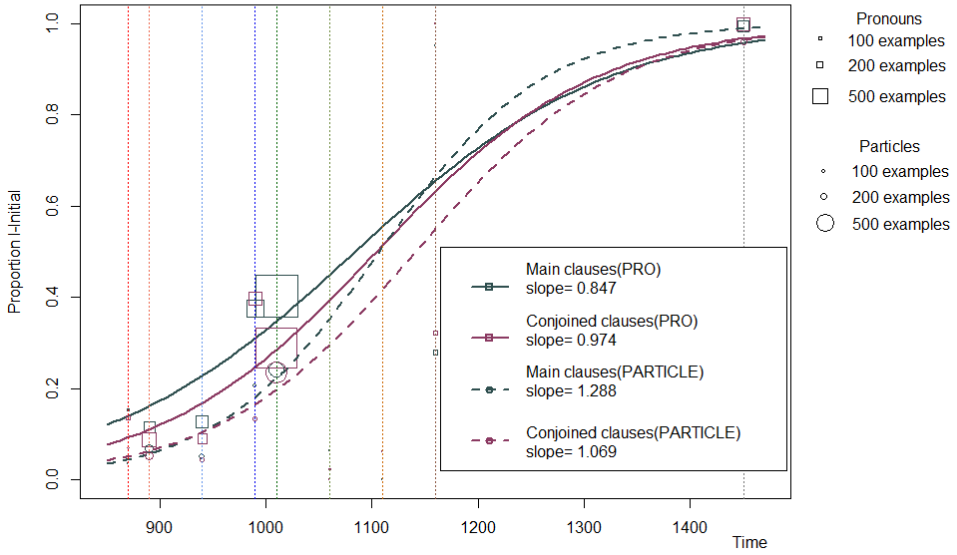
b. *Postverbal particle*

ac se hlaford ana **færð** 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

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	-10.000	505.17	1	<0.001***
Period	0.927	440.03	1	<0.001***
Type(CC)	-1.048	3.02	1	0.082
Diagnostic(Particle)	-0.571	78.07	1	<0.001***
Period:Type(CC)	0.079	1.75	1	0.1856



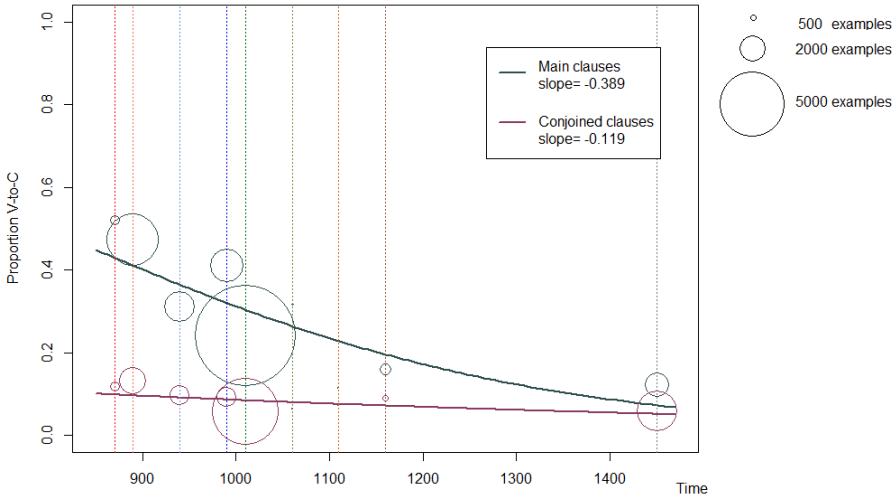
4.2 Regarding V-to-C movement

- **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 (*þa/þonne*, Null, Other)

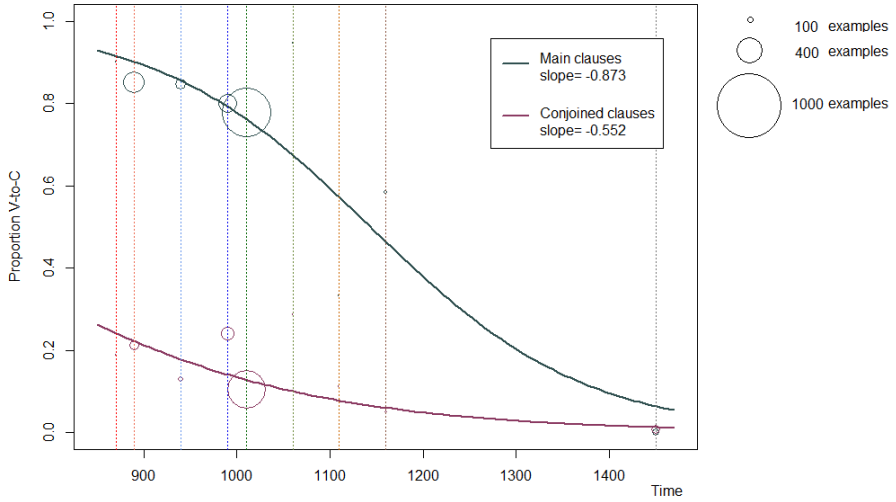
- When all contexts are considered jointly, V-to-C movement is lost faster in MCs than CCs

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	3.105	448.59	1	<0.001***
Period	-0.389	690.11	1	<0.001***
Type(CC)	-4.281	3402.03	1	<0.001***
Period:Type(CC)	0.270	142.80	1	<0.001***



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

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	9.976	215.91	1	<0.001***
Period	-0.873	168.74	1	<0.001***
Type(CC)	-6.313	25.06	1	<0.001***
Period:Type(CC)	0.320	6.33	1	0.012*



- 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 geclænsod
and be.sbjctv you cleansed

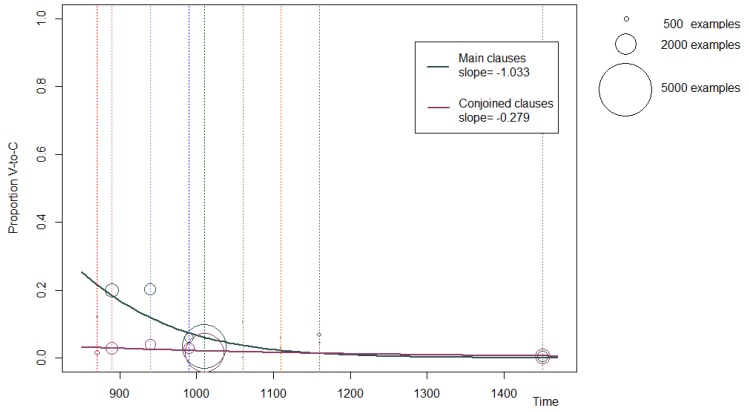
'And may you be cleansed'
(cocathom1,ÆCHom_I,_8:241.9.1391)

b. *Narrative inversion*

Wæron hie nigon fota uplonge
Were they nine feet up-long

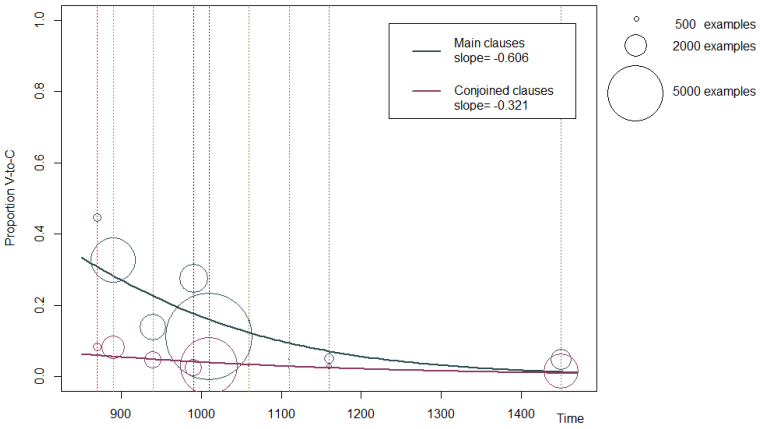
'They were nine feet tall'
(coalex,Alex:29.3.346)

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	7.706	154.26	1	<0.001***
Period	-1.033	253.45	1	<0.001***
Type(CC)	-8.727	100.40	1	<0.001***
Period:Type(CC)	0.754	71.40	1	<0.001***



- V-to-C after *þa/þonne* (as a percentage of all clauses) is lost faster in MCs than CCs

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	4.465	361.19	1	<0.001***
Period	-0.606	621.75	1	<0.001***
Type(CC)	-4.422	116.06	1	<0.001***
Period:Type(CC)	0.285	47.25	1	<0.001***



- **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 C^0 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)

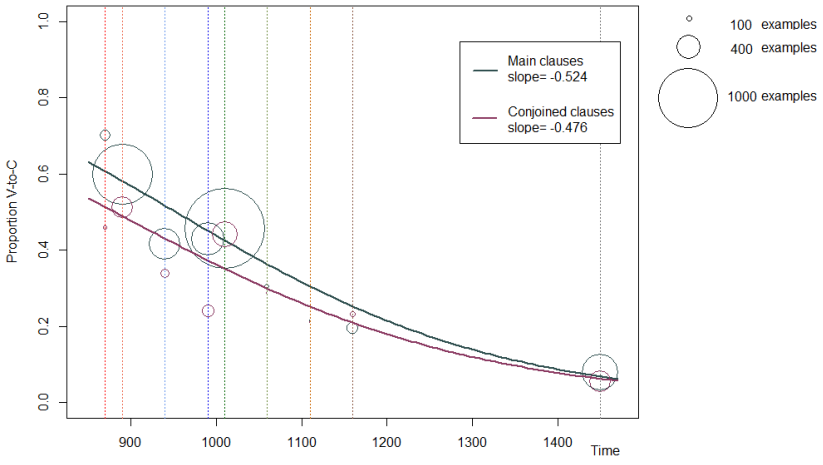
- Examples of CCs with separating constituents

(12) a. Ac [$_{CP}$ siðþan 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 ðe of ðam hlafe geet]$_i$. ne swylt he$_i$ on ecnysse.
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_I,_2:192.82.362)

- MCs and CCs with separating constituents change at the same rate

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	4.992	329.46	1	<0.001***
Period	-0.524	357.85	1	<0.001***
Type(CC)	-0.799	2.73	1	0.0985
Period:Type(CC)	0.048	0.00	1	0.3191

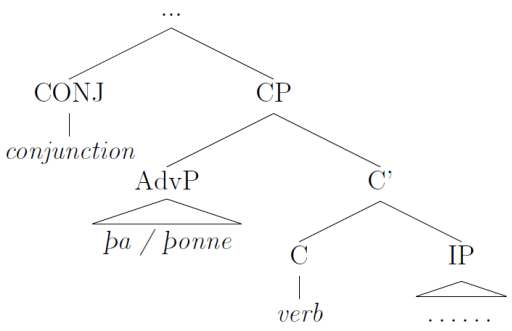


- **H6 - Separation effect with operator adverbs**: The same reasoning applies to initial operator adverbs. The option to place these adverbs in initial position is affected by the presence of C-head conjunctions. But once only cases are considered where there is in fact a clause initial *þa / þonne*, conjunctions cannot be in C^0 but must necessarily be logical connectors.

- H6 Procedure

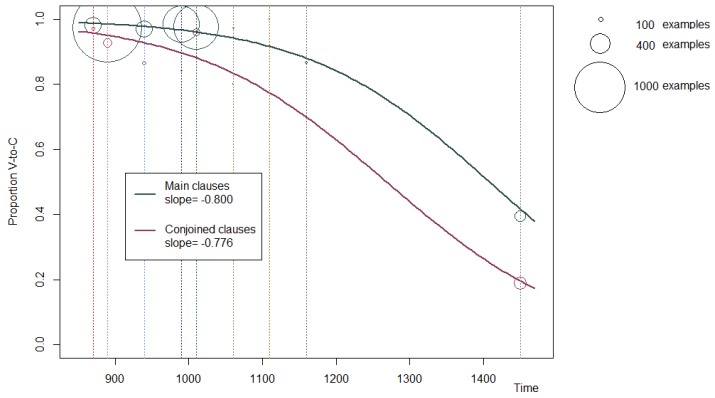
1. Collection of all sentences with pronominal subjects and initial *þa/þonne*
2. dependent variable:
   - *þa/þonne - verb - subject* indicates V-to-C
   - *þa/þonne - subject - verb* indicates V-to-I
3. independent variables: (i) period, (ii) clause type (MC, CC)

- Operator adverbs are incompatible with C-head conjunctions



- V-to-C movement after *þa/þonne* is lost at the same rate in MCs and CCs

Factor	Estimate	Wald (z^2)	df	*p*
(Intercept)	11.266	772.06	1	<0.001***
Period	-0.800	533.29	1	<0.001***
Type(CC)	-1.428	4.21	1	0.040*
Period:Type(CC)	0.024	0.00	1	0.672



- 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. [$_{CP}$ **Mannum** [$_{IP}$ he sealde uprihtne gang]]
men he gave upright walking
'He allowed mankind to walk upright'
(cocathom1,ÆCHom_I,_20:335.14.3834)

b. and [$_{IP}$ he gyfð eac **mannum** mænega 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

Period	OBJ - spro	spro ... OBJ
MC	1001 (c. 17%)	4791
CC	614 (c. 11%)	5102

χ^2=101.5, df = 1, p<0.001*** Cramer's V = 0.0942

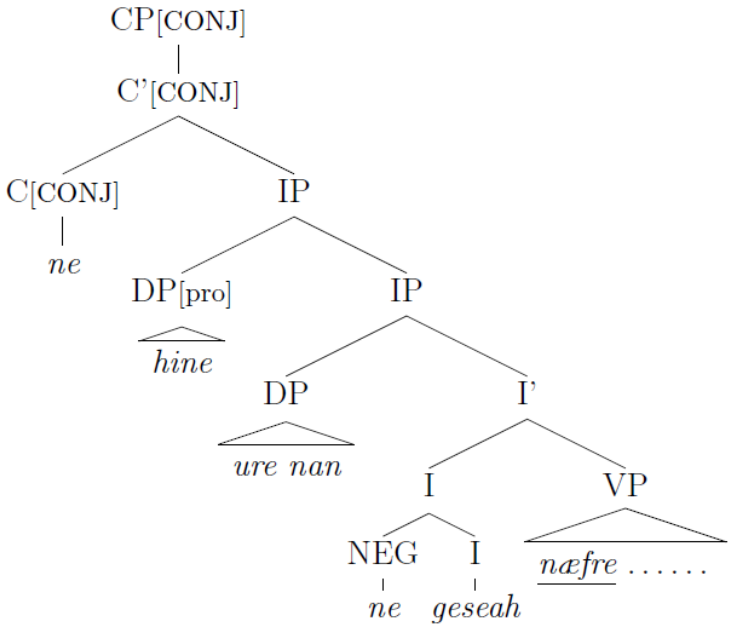
4.4 Regarding pronominal scrambling

- **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 <u>næfre</u> 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)



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

Diagnostic:

Clause type	pro - S	S - pro
MC	0	86
CC	3	51

Fisher's Exact Test, p= 0.055

1-word-element:

Clause type	pro - S	S - pro
MC	3	235
CC	23	170

χ^2=19.5, df = 1, p<0.001***

All contexts:

Clause type	pro - S	S - pro
MC	22	889
CC	165	747

χ^2=119.98, 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 **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 wites to ecan.
but their mind them torments their punishment to increase

'But their mind torments them as an increase of their punishment' (coalcuin,Alc_[Warn_35]:340.246)

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

Period	pro - SUBJ	SUBJ - pro
early	106 (c. 35%)	201
late	59 (c. 10%)	546

χ^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*

þas 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_1]:22.22)

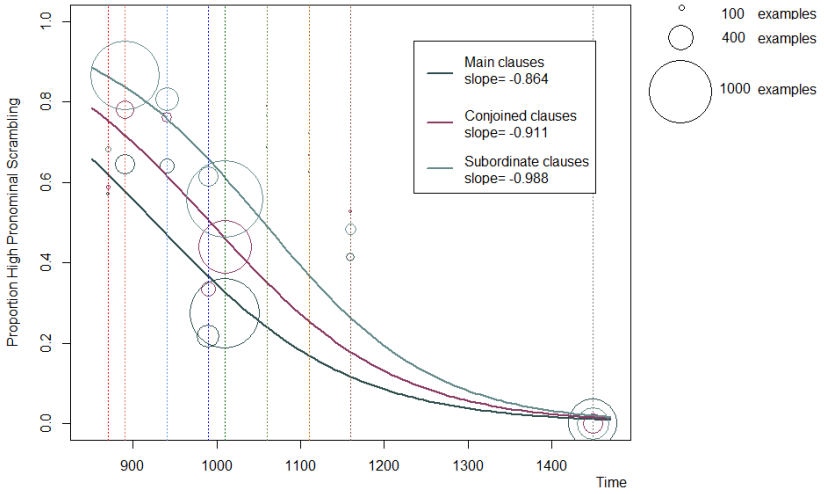
b. *No scrambling*

and **se** **feond** 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

Factor	Estimate	Wald (z^2)	df	p
(Intercept)	8.004	221.00	1	<0.001***
Period	-0.864	253.70	1	<0.001***
Type(CC)	1.037	1.48	1	0.2239
Type(SC)	2.432	12.33	1	<0.001***
Period:Type(CC)	-0.047	0.30	1	0.5856
Period:Type(SC)	-0.124	3.16	1	0.0752



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.

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