

Interactions Between Multiple Syntactic Changes: The Loss of Old English Conjunct Clauses

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Introduction

Model of OE clause structure

Empirical Predictions

Conclusion

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 - 2 build and defend a model of Old English conjunct clauses (CCs)

CCs and verb placement

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the angel encouraged them
mid his wordum
with his words
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b. & [subject þæt folc] nugyt þæt tacn
and that people now-yet that token
Iosepes gesetnesse [finite verb æfterfylgead]
Joseph's law after-follows
'And the people still follow that aspect of Joseph's law'
(coorosiu, Or 1:5.24.13.472)

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[_{topic} þone sudran steorran] we ne geseod næfre
the southern star we not see never

'We dont ever see the southern star' (cotempo, _Temp:9.8.299)

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b. CC with topicalization (rare)

and [_{topic} þone sang] we sungon unseldon mid heom
and the song we sang frequently with them

'And we frequently sang the song with them'
(coelive, ÆELS_[Swithun]:262.4384)

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Formal Model

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- (3) a. hwæt [C [I **sægest**]] [IP þu us nu be swylcere dæde?]
what say you us now about such deed
'What are you telling us now about such a deed?'
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b. Ic [I **andette**] [VP eac [VP hine ætforan minum fæder.]]
 I acknowledge also him before my father

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c. Drihten [I **hat**] me gan to ðe upon ðam wætere [...]
 Lord order me go to thee upon the water [...]

gif þu [I **hætst**]. ðonne mæg ic;

if you order, then may I

'Lord, order me to come to you on the water. [...] If you {*order | do}, then I'll be able to.' (cocathom2, ÆCHom_II, 28:227.189.5048-5050) 5 / 55

Hierarchy of Projections

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(4) [_{CP} ælc yfel [_{C'} [_{IP} he [_{I'} mæg [_{VP} don]]]]]
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'He can do each evil' (WHom, 4.62, parse as explained in Kroch and Taylor 1997, ex. (4a))

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- alternatives: (i) additional projection between CP and IP (Kemenade 1999 and subsequent work, Haeberli 2000, Speyer 2010, ...) (ii) Split CP (e.g. Walkden 2014), (iii) Kaynean (e.g. Biberauer and Roberts 2005)

Verb-second (Pintzuk 1993)

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(5) a. Topic - Pronominal subject - V

[_{CP} þis bebod [_{IP} [_{DP} ic] nam [_{VP} æt minum Fæder]]]
this command I took at my father

'I received this command from my father' (cowsgosp,Jn_[WSCp]:10.18.6634)

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'The Lord took those (scriptural) testimonies in this manner'
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c. Topic - V - Non-pronominal subject

[_{CP} ðæne aþ [_{IP} nam [_{VP} [_{DP} Wulfsige se scirigman]]]]
 the oath took Wulfsige the sheriff

'Sheriff Wulfsige received the oath' (codocu3,Ch_1458_[Rob_41]:36.50)

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(6) a. *I-final headedness*

... þa [IP ðu [I' [VP **mæstne welan**] hæfdest]]

... when you most wealth had

'... when you had the greatest wealth'

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b. *I-initial headedness (or extraposition of the object)*

... for ðan ðe [IP we [I' habbað [VP **heofenlice welan**]]]

... for that that we have heavenly wealth

'... because we have heavenly wealth'

(cocathom2,ÆCHom_II,_38:281.63.6343)

Loss of verb-final structure

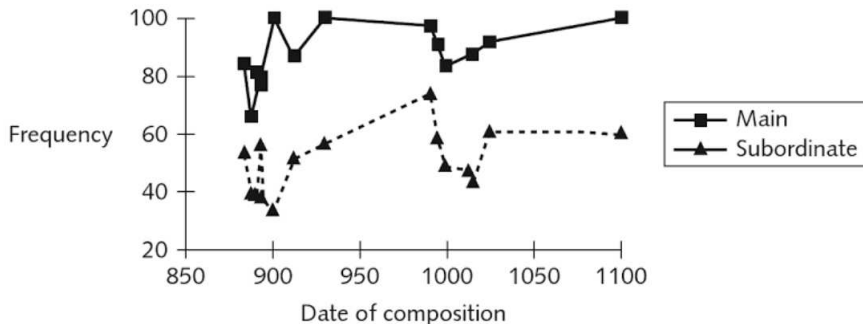


Figure 1: Frequency of I-Initial structure in Old English clauses with auxiliary verbs, 884-1100. (From: Pintzuk (1999: 220), as reprinted in Janda and Joseph 2003: 523.)

- well-studied change (e.g. Smith 1893, dialectal factor Trips 2001)

High verb placement 1

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- (7) a. [_{CP} [_C [_I *Com*]] [_{IP} he to heom gescrydd ?]]
 came he to them clothed
 ‘Did he come to them with clothes on?’
 (coeluc2,Eluc_2_[Warn_46]:9.10)

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- b. [_{CP} hwanon [_C [_I *come*]] [_{IP} þu Giezi ?]]
 whence come you Gehazi
 ‘Where do you come from, Gehazi?’
 (cocathom1,ÆCHom_I,_27:408.241.5443)

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 ‘Then we arrived in a city’ (coalex,Alex:15.1.126)

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- b. [_{CP} **þonne** *findst* [_{IP} þu ðæron ænne gyldenne wecg]]
then find you thereon one golden coin
'Then you will find a golden coin in it'
(cocathom1,ÆCHom_I,_34:470.163.6811)

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'He did not see Christ alive' (coelive, ÆELS_[Mark]:147.3294)

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- b. [_{CP} [_{IP} He **ne** *geseah* hine siððan]]
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b. [_{CP} [_{IP} ge **nyton** hwænne seo tid ys]]
 you not-know when the time is

'You don't know when the time will come'

(cowsgosp,Mk_[WSCp]:13.33.3255)

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 ‘Do not sin anymore!’ (cocathom1,ÆCHom_I,_24:378.204.4790)

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- b. and [_{IP} þu heonan forð **ne synga**]
 and you hence forth not sin.imperative
 ‘Do not sin anymore!’ (coaelhom,ÆHom_14:226.2127)

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 - 3 inversion with subject pronouns remains stable and at ceiling for interrogatives, “residual V2” (Rizzi 1996)

Topicalization

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- (13) a. *Æðelhere_i Annan broðor Eastengla cyninges [...]*
Æthelhere Anna's brother of-East-Angles king
[_{CP} [_{DP} **þone_i**] [_{IP} mon slog eac mid ealle his compweorode]]
that-one one slew also with all his battle-troop
- 'Æthelhere, the brother of Anna, the king of East-Anglia [...] That one, people killed along with all his troops' (cobede, Bede_3:18.236.15.2411-2413)

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- b. [_{CP} [_{PP} **on weallendum ele**] [_{IP} he het hine baðian]]
 in boiling oil he ordered him bathe
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- c. [_{CP} [_{DP} **þan synfullen [...]**] [_{IP} he behet Godes godnysse [...]]],
 to-the sinful he promised God's goodness
 [_{CP} [_{DP} **þa gode**] [_{IP} he manode, þæt heo on heora godnysse þurhwunedan]]
 the good he instructed that they in their goodness through-lived
 'To the sinful [...] he promised God's goodness [...]. The good, he instructed to keep their goodness.' (coneot, LS_28_[Neot]:57.48-49)

Development of Topicalization

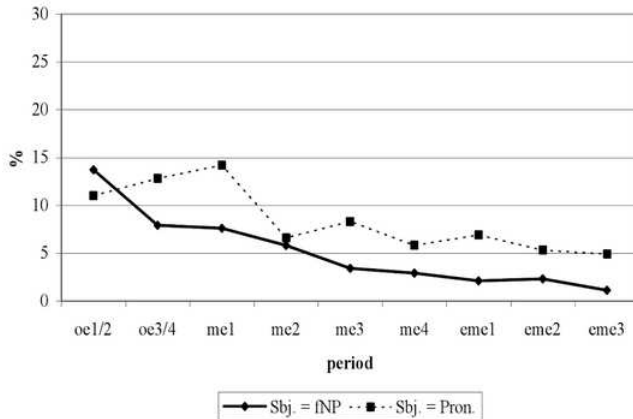


Figure 2: Rate of direct object topicalization in clauses with full (fNP) and pronominal subjects (Pron.) From: Speyer (2010: 52)

Subject Topicalization

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- arguments supporting subjects in Spec,CP

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(14) [CP [DP Ræpsas] [C' **ne syn** [IP gesungene mid Alleluian]]]
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'A response (in church service) should not be sung with a hallelujah'
(cobenrul, BenR:15.39.20.518)

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(15) [CP [DP min God] [IP **me** asende to __ sona his engel]]
my God me sent to soon his angel
'My God sent his angel to me at once'
(coaelhom, ÆHom_22:326.3470)

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- (16) [CP [DP þæs regul] [IP ic wille, [CP þæt gesinlice __ sie geræd on geferrædenne]]]
 this rule I want that diligently be read in company
 'This rule, I want to be read out diligently in company'
 (cobenrul,BenR:66.127.9.1223)

Summary

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- topicalization declines during Old / early Middle English (from c. 15 to c. 5%)

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Double-class membership

(17) innovative - logical connector

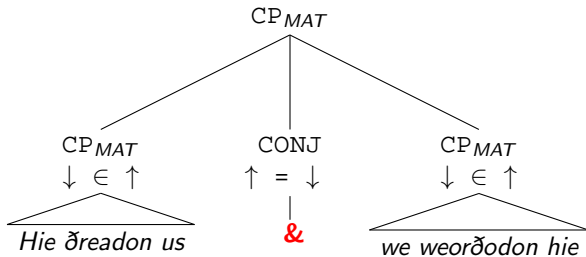
$$\begin{array}{ccccc}
 CP_{MAT} \rightarrow & CP_{MAT}^+ & CONJ & & CP_{MAT} \\
 & \downarrow \in \uparrow & \uparrow = \downarrow & & \downarrow \in \uparrow
 \end{array}$$

(18) conservative - C-head conjunction

$$\begin{array}{ccc}
 C'_{MAT} \rightarrow & C_{MAT} & IP \\
 & \uparrow = \downarrow & \uparrow = \downarrow \\
 & (\downarrow \text{ COORD-FORM}) & \\
 & (\uparrow \text{ CLAUSE-TYPE}) = \text{decl} &
 \end{array}$$

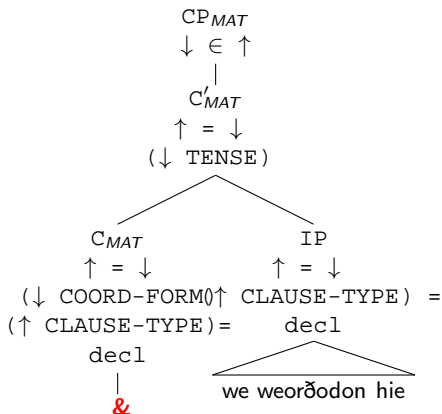
Illustration

- (19) Hie ðreadon us & we weorðodon hie
 they rebuked us and we honored them
 'They rebuked us and we honored them'
 (cocura, CP:36.255.7.1666-1667)



Illustration

- (20) & we weorðodon hie
 and we honored them
 'And we honored them' (cocura,CP:36.255.7.1667)



Change - Variation between two conjunction types

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- gradual loss of C-head conjunctions

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(21) [CP swa swa min fæder oncnæwð me.] [CP [C' & [IP ic oncnawe hine.]]]
so as my father knows me and I know him

'As my father knows me, so I know him'

(#% 'As my father knows me and [as] I know him, so ...')

(cocathom1,ÆCHom.1,17:315.77.3154)

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(cocathom1,ÆCHom_I,_17:315.77.3154)

(22) *Old High German*

so bizzet siun innan, unzin er stirbit,
so bites she-him inside, until he dies,

[CP [ADVP unde] [C' uerit [IP siu gesunt uz.]]]
and (then) goes she sound out

'She bites him inside [of him], until he dies, and then she comes out sound.'

(Old High German Physiologus, Hydra)

Syntactic Changes in Early English

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- 3 well-established syntactic changes in early English:

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 - ① disappearance of C-head conjunctions
- interaction between those changes make important predictions

Empirical Investigation

CCs and verb placement

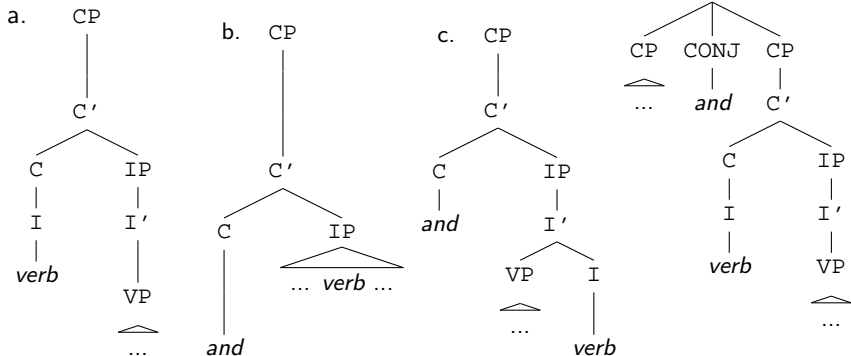
CCs and verb placement

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CCs and verb placement

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(23)



CCs and topicalization

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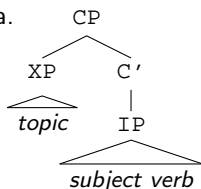
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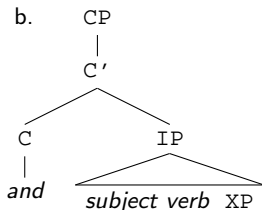
- C-head conjunctions blockSpec, CP as a site for topics

(24)

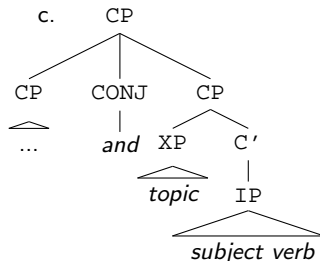
a.



b.



c.



Corpora

Databases used

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- prose texts from YCOE (Taylor et al. 2003)

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- www.pcmep.net



Early Middle English texts

Number	File Name	Text Name	Assigned Year
1	CMPETERB1	First Continuation of the Anglo-Saxon Chronicle E	1131
2	WorcFrag	The First Worcester Fragment	1135
3	TheGrave	The Grave	1140
4	BodySoul	Body and Soul	1150
5	CMPETERB2	Second Continuation of the Anglo-Saxon Chronicle E	1154
6	CMLAMBET	The Lambeth Homilies*	1160
7	PatNost	Pater Noster	1160
8	CMTRINIT	The Trinity Homilies*	1160
9	CMORM	Ormulum	1175
10	PoemaMorale	Poema Morale	1175
11	ProvAlf	The Proverbs of Alfred	1175
12	CMVICES1	Vices and Virtues	1180
13	LordOneGod	Lord as Thou art one God	1195
14	Ureisun	A Good Orison of Our Lady	1200
15	WoovingGroup	Texts of the Wooving Group	1200

Table 1: Overview over early Middle English text files used and their approximate dates of composition

Corpus Material - Illustration

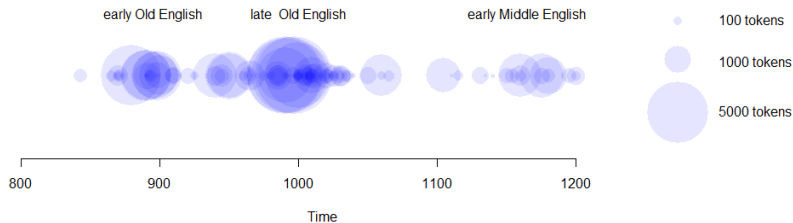


Figure 3: Temporal distribution and size of texts considered in this study

Hypothesis Testing

Distribution of verb placement patterns

Hypothesis 1: *Overall Larger Number of Verbs in IP in CCs than MCs*

A comparison between sentences with high verb placement, verb-final and verb-medial structures should reveal that, by comparison with MCs, CC display (i) a lower rate of high verbs and (ii) a higher rate of both verb-final and verb-medial structures.

High verb placement V-to-C

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(25) **High verb placement / V-to-C:**

a. V - Pronominal subject

[_{CP} þonne *geleanað* [_{IP} he hit us swa us leofast bið]]
then repays he it us as us dearest is

'Then he will repay us in a way that will be most pleasing to us'
(cowulf, WHom_2:71.47)

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'Then he will repay us in a way that will be most pleasing to us'
(cowulf,WHom_2:71.47)

b. Conjunction ... V - Pronominal subject

& [_{CP} þa *æteawde* [_{IP} he hine Nerone þy þridan dæge]]
and then appeared he reflexive to-Nero the third day

'And then he appeared to Nero on the third day'
(coblick,LS_32-[PeterandPaul[BiHom_15]]:183.221.2364)

Verb-medial, potentially \bar{I} -initial

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(26) **Verb-medial / Potentially \mathcal{I} -initial (\mathcal{I} -initial or postposition):**

a. Pronominal subject - V ... X

[_{IP} hi *underfengon* edlean heora weorca]
they received reward of-their works

'They received the reward for their works'
(cocathom1,ÆCHom_I,-28:416.170.5564)

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b. Conjunction ... Pronominal subject - V ... X

& [_{IP} hi *underfengon* þone halgan gast]
and they received the holy ghost

'And they received the Holy Ghost' (cocathom1,ÆCHom_I,_22:357.86.4389)

Verb-final, necessarily I-final

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(27) **Verb-final / necessarily I-final:**

a. Pronominal subject ... X ... V

[_{IP} He þa forðon Drihtnes willan sohte]
he then therefore Lord's will sought

'Therefore, he then sought the Lord's will'

(coblick,LS_17.1_[MartinMor[BiHom_17]]:225.265.2900)

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b. Conjunction ... Pronominal subject ... X ... V

& [_{IP} he ær þone feþan sohte]
and he earlier the warfare sought

'And earlier he sought battle'

(coblick,LS_12_[NatJnBapt[BiHom_14]]:167.105.2115)

Hypothesis 1: Results

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Clause Type	V S	SVX	SXV
	High verb V-to-C	Verb-medial Potentially I-initial	Verb-final Necessarily I-final
MC	7,629 (41.2%)	10,125 (54.7%)	766 (4.1%)
CC	1,528 (15.7%)	6,484 (66.7%)	1,716 (17.6%)

Table 2: Verb positions in MCs and CCs with pronominal subjects

High verbs, MC vs. CC $\chi^2=1889.8$, $df=1$, $p<0.001$, odds ratio = 3.76, 95%-confidence interval [3.53 – 4.00].

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	(structurally ambiguous)	Verb-medial Potentially I-initial	Verb-final Necessarily I-final
MC	9,706 (55.6%)	7,010 (40.1%)	751 (4.3%)
CC	2,358 (35.3%)	3,496 (52.3%)	825 (12.4%)

Table 3: Verb positions in MCs and CCs with full subjects

VS, MC vs. CC $\chi^2=792.7$, $df=1$, $p<0.001$, odds ratio = 2.29, 95%-confidence interval [2.16 – 2.43]].

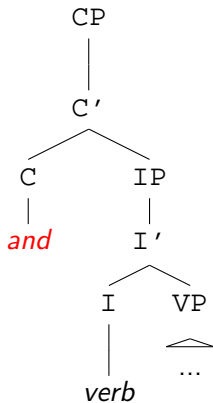
Diachrony of High Verbs

Hypothesis 2: *Differential Development of V-to-C Contexts*

If one measures the proportion of 'verb - pronoun subjects' vs. 'pronoun subject - verb' structures over time, there should be a noticeable decline in the former word order option. This development should proceed more slowly in CCs than MCs.

Hypothesis 2 - Illustration

(28)



Examples

- (29) V - Pronominal subject MC + v-to-C:

Ða [c *geseah*] [IP he Marinan þæt mægden]
 then saw he Mary that maiden

'Then, he saw the girl Marina' (comart3,Mart_5-[Kotzor]:Jy7,B.11.1097)

- (30) Conjunction ... V - Pronominal subject CC + v-to-C:

& þa [c *geseah*] [IP ic ðær þone rumestan feld]
 and then saw I there the most-spacious field

'And then I saw the most spacious field there' (cobede,Bede_5:13.430.2.4323)

- (31) Pronominal subject ... V MC + verb in IP:

[IP Ic hyne *geseah* on þam ylcan flæsce]
 I him saw in the same flesh

'I saw him in the same flesh' (covinsal,VSa1_1-[Cross]:21.12.177)

- (32) Conjunction ... Pronominal subject ... V CC + verb in IP:

and [IP he ða *geseah* sumne dæl þæs leohtes]
 and he then saw some part-of-the light

'And he then saw some part of the light'
 (cocathom2,ÆCHom_II,_11:107.528.2325)

Results - Graphical Representation

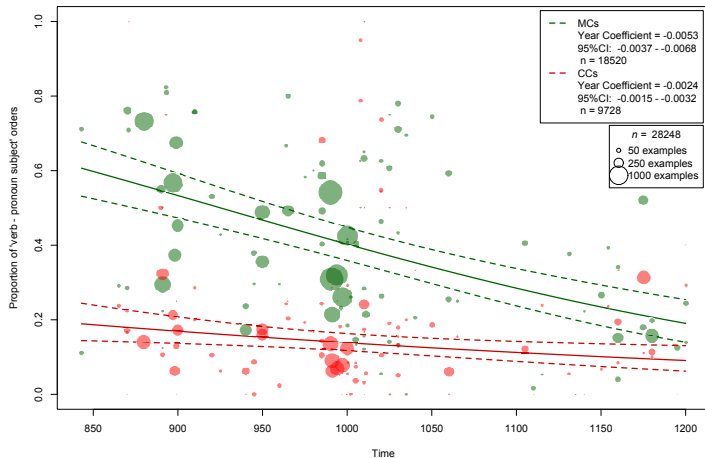


Figure 4: Illustration of decline in high verb placements

Results - Statistical Model

```
formula = HighVerb ~ Year + ClauseType + Year:ClauseType + (1 | Text),  
family = binomial, data = H3
```

Fixed effects:

	Estimate	Std.Error	z-value	p
Intercept	4.8742	0.8100	6.018	<0.001***
Year	-0.0052681	0.0008065	-6.532	<0.001***
ClauseType(MC→CC)	-4.3235	0.4304	-10.046	<0.001***
Year:ClauseType(MC→CC)	0.0028894	0.0004392	6.579	<0.001***

Random effect:
Text, N=101
Variance of random intercepts: 0.785

Null deviance: 35591 on 28247 degrees of freedom
Residual deviance: 31082 on 28243 degrees of freedom
AIC: 31092

Table 4: Mixed-effects logistic regression for high verb placement by time and clause type

Conjunctions that cannot be C-heads

Hypothesis 3: *Effect of Separation of Conjunction and IP*

If one divides all CCs into those clauses whose conjunction can potentially be parsed as a C-head and those whose conjunction must be a logical connector, the rate of verb-final structures should become noticeable greater in the former than the latter subtype.

Illustration of Relevant Sentences

(33) **Necessarily logical connector**

Conjunction ... Some Constituent ... Pronominal subject - Verb

And [_{PP} on ðæm ðeowdome] [_{IP} he *geendade* his lif]
and in the service he ended his life

'And in that service [=as a zoo keeper], he ended his life'
(comart3,Mart_5_[Kotzor]:Ja16,A.9.103)

(34) **Potential C-head conjunction**

Conjunction - Pronominal subject - Verb ... X

And [_{IP} he swa *geendode* þa ealdan gecyðnysse]
and he so ended the old testament

'And thus he ended the Old Testament'
(colwstan1,ÆLet_2_[Wulfstan_1]:127.179)

Hypothesis 3 - Results

Clause type	V S	SVX	SXV
	High verb (V-to-C)	Verb-medial Potentially I-initial	Verb-final I-final
MC	17,335 (48.2%)	17,135 (47.6%)	1,517 (4.2%)
CC	3,886 (23.7%)	9,980 (60.8%)	2,541 (15.5%)
necessarily logical connector	3,486 (56.9%)	2,283 (37.3%)	353 (5.8%)
potentially C-head conjunction	400 (3.9%)	7,697 (74.8%)	2,188 (21.3%)
SC	1,119 (3.2%)	16,948 (48.6%)	16,837 (48.2%)

Table 5: Verb positions in MCs, separated CCs, adjacent CCs and subordinate clauses (SCs), pronominal and full subjects

Diachrony of Verb-Final Order

Hypothesis 4: *Differential Development of I-Final Structures*

When the corpus texts' proportions of I-final structures are regressed against clause type and time, all clause types should show a constant rate effect for the decline in such structures except for clauses that may involve a C-head conjunction. These clauses should lose verb-final structures faster than the others.

Results - Graphical Representation

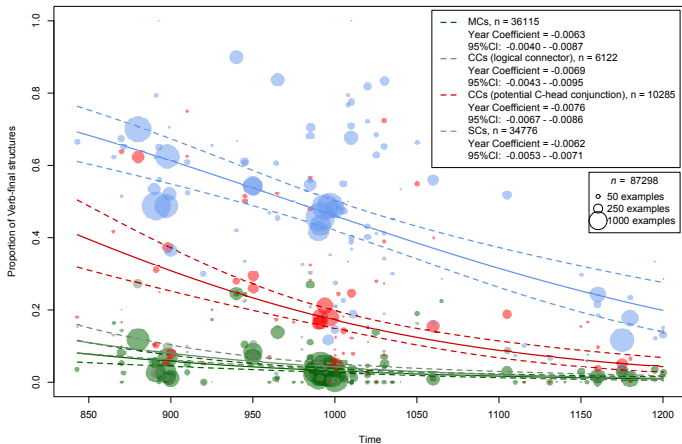


Figure 5: Illustration of the decline in I-final structures

Results - Statistical Model

```

formula = VerbFinal ~ Year + ClauseType + Year:ClauseType + (1 | Text),
family = binomial, data = H5
Fixed effects:

```

	Estimate	Std. Error	z-value	p
Intercept	2.9167	1.1904	2.450	0.01428*
Year	-0.0063455	0.0011922	-5.323	<0.001***
ClauseType(MC→CC(log. con.))	0.8945	1.2800	0.699	0.48466
ClauseType(MC→CC(C-head c.))	3.1561	0.4743	6.655	<0.001***
ClauseType(MC→SC)	3.1017	0.4398	7.058	<0.001***
Year:ClauseType(MC→CC(log. con.))	-0.0006035	0.0013266	-0.455	0.64914
Year:ClauseType(MC→CC(C-head c.))	-0.0012987	0.0004896	-2.652	0.00799**
Year:ClauseType(MC→SC)	0.0001689	0.0004550	0.371	0.71045

```

Random effect:
Text, N=101
Variance of random intercepts: 0.6619

Null deviance:          96086 on 87297 degrees of freedom
Residual deviance:     67757 on 87289 degrees of freedom
AIC: 67775

```

Table 6: Logistic regression mixed-effects model for verb-final structures by time and clause type

Object Topics

Hypothesis 5: *Differential Development of Object Topicalization*
Measuring object topicalization as the occurrence of a nominal object DP before a subject pronoun, 'object - pronoun subject,' vs. its occurrence after a pronominal subject, 'pronoun subject ... object,' one should find (i) a greater frequency of fronted objects in MCs than in CCs, (ii) a substantial decline in the former word order option over time and (iii) a faster decline of this pattern in MCs than in CCs.

Object Topicalization - Relevant Structures

(35) a. **+MC** Object - Pronominal subject ... V

[_{DP} Langsume tale] we magon macian be ðysum
 long tale we may make about this
 'We could write a long tale about this' (coaelhom,ÆHom_23:80.3745)

b. **+CC** Conjunction ... Object - Pronominal subject ... V

& [_{DP} horses hyda] hi habbað him to hrægle gedon
 and horse's hide they have themselves to clothing done
 'And they used horse hide for their clothing' (comarvel,Marv:26.1.130)

c. **+MC** Pronominal subject ... { V, Object }

He arærde ða on ðære ylcan byrig [_{DP} mære cyrcan]
 He reared then in the same city great church
 'He then built a great church in the same city'
 (cocathom2,ÆCHom_II,_38:287.262.6496)

d. **+CC** Conjunction - Pronominal subject ... { V, Object }

Ac he worhte [_{DP} fela wundra] ætforan þam deman
 but he worked many wonders before the judge
 'But he performed many miracles in front of the judge'
 (coalive,ÆELS_[Exalt_of_Cross]:202.5672)

Object Topicalization - Synchronic Results

Clause type	Topicalization <i>Object - spro ... V</i>	No Topicalization <i>spro ... {V, Object }</i>
MC	1063 (31.6%)	2,306 (68.4%)
CC	579 (16.4%)	2,944 (83.6%)

Table 7: Object topicalization rates in MCs and CCs

Results - Graphical Representation

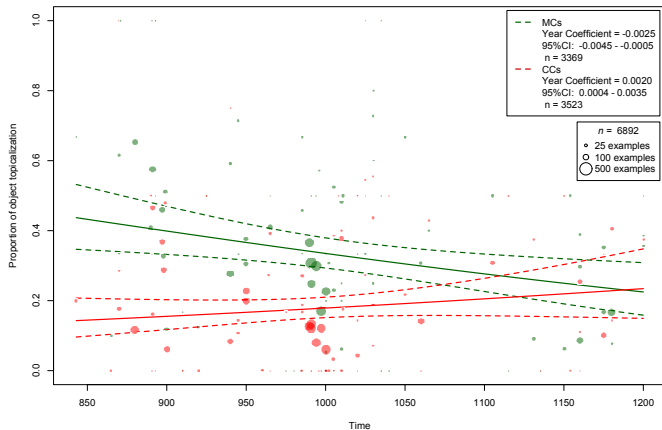


Figure 6: Illustration of mixed-effects logistic regression model for the development of object topicalization

Subject topics

Hypothesis 6: *Differential Development of Subject Topicalization*

If one measures clauses in which subject topicalization may have taken place as 'subject - pronoun' patterns in comparison to clauses in which subject topicalization cannot possibly have taken place as 'pronoun - subject' orders, one should (i) observe a reduced potential for subject topicalization in CCs by comparison with MCs and (ii) a differential development of potential subject topicalization in MCs and CCs such that the clause type difference diminishes over time.

Pro-Subject - Examples

(36) Pronoun ... { Full subject, Verb }

- a. **Hine** [se ercebiscop mid his agene hond on horse *ahof*]
him the archbishop with his own hand on horse up-heaved
'The archbishop lifted him up with his own hand onto the horse'
(cohad,LS_3-[Chad]:49.31)
- b. **And eow** [unwæstm þurh unweder gelome *gelimpeð*]
and to-you un-fruit through un-weather often happens
'And bad harvest will frequently happen to you because of bad
weather'
(cowulf,WHom_19:64.1530)

Subject Topicalization - Synchronic Results

Clause type	Subject topicalization possible <i>Full subject - Pronoun ... Verb</i>	Subject topicalization impossible <i>Pronoun ... {Verb, Full subject}</i>
MC	893 (81.2%)	207 (18.8%)
CC	787 (62.6%)	470 (37.4%)

Table 8: Potential subject topicalization in MCs and CCs

Explanation of Clause Type Difference

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- (37) [CP Se hælend [IP **him** [I' cwæð to _]]]
 ↑
 the savior him spoke to
'The Savior said to him ...'
(coelive,ÆLS-[Julian_and_Basilissa]:16.942)

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- (38) [CP **&** [IP **him** Scipia [I' sende sciphere æfter _]]]
 and them Scipio sent ship-army after
 'And Scipio sent a fleet after them' (coorosiu,Or_4:10.106.31.2216)

Results - Graphical Representation

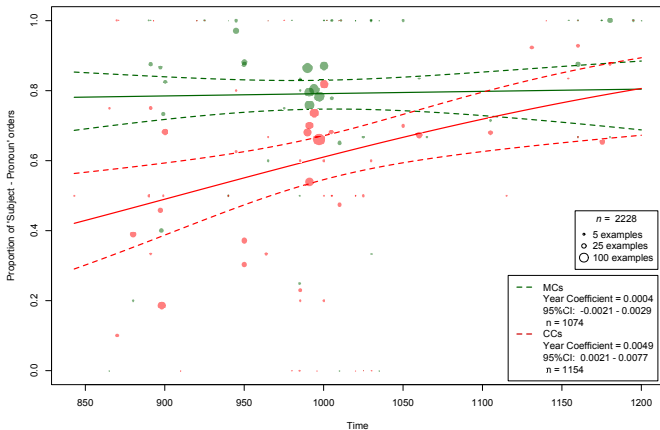


Figure 7: Illustration of the mixed-effects model for the development of potential subject topicalization

Support for Grammar Model

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- test of six predictions regarding distributional and diachronic differences between MCs and CCs

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- test of six predictions regarding distributional and diachronic differences between MCs and CCs
- empirical support for all of them
- → support for grammar model and Old English C-head conjunctions
- by c. 1200, no more evidence from verb placement and topicalization for a clause type distinction

Conclusion

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 - ② First theoretically predicted violations of Constant Rate Effects
- supports Grammar Model where conjunctions can optionally be placed under C
 - ① alternative explanations? coordination of IPs? but how would diachrony follow?
- numerous open questions (info-structure, difference between conjunctions, prose vs. poetry, ...)

Thank you very much for your attention!

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