

## Negation in Baltic Middle Low German

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### 1 INTRODUCTION

The syntactic phenomenon known as Jespersen’s Cycle, a cyclic change in the expression of sentential negation, has been investigated in detail in many European languages, including in a recent study of Low German (LG) in [Breitbarth \(2014\)](#). There has as yet been no study of the syntax of LG as spoken by colonists and traders who settled in the Baltic regions, modern Latvia and Estonia, in the 14–16<sup>th</sup> centuries. This study addresses the progression of Jespersen’s Cycle (JC) in Baltic LG, investigating the Middle Low German (MLG) period 1325–1525 in two major cities, Riga and Reval (modern Tallinn). First, I present the results of a quantitative study of sentential negation in Baltic MLG chancery documents, modelled on the methodology of [Breitbarth \(2014\)](#), in order that my results can be compared to hers. This is followed by a discussion of my results, compared to those of [Breitbarth \(2014\)](#), and an explanation of the observed difference in terms of dialect contact. Finally, a syntactic theory of sentential negation in Baltic MLG is presented, working within the Minimalist Program of [Chomsky \(2000, 2001\)](#), and referring to discussion in [Willis \(2011\)](#).

### 2 BACKGROUND

#### 2.1 *Negation and Jespersen’s Cycle*

This work will focus on the expression of sentential negation in MLG, negation which reverses the truth value of a whole proposition, exemplified for English in (1a). It is also possible to negate a single constituent by constituent negation, exemplified in (1b), which will not be discussed here.

- (1) a. I don’t like tea.  
b. Not long after, I had coffee.

The term standard negation, used in typological work, describes a language’s main, productive method for expressing negation, usually the strategy found in main clauses.

This work addresses JC, cyclic change in the expression of sentential negation summarised in the following oft-cited passage.

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The history of negative expressions in various languages makes us witness the following curious fluctuation: the original negative adverb is first weakened, then found insufficient and therefore strengthened, generally through some additional word, and this in its turn may be felt as the negative proper and may then in course of time be subject to the same development as the original word. (Jespersen 1917: 4)

The change is most often exemplified with French (Table 1), where Jespersen's (1917) three stages are clearly visible.

Stage I	Stage II	Stage III
jeo ne dis	je ne dis pas	je dis pas
Old French	Middle and Modern written French	Colloquial French

**Table 1** Schematic representation of Jespersen's Cycle, exemplified by French (adapted from Willis et al. 2013: 7)

Stage I corresponds to sentential negation being expressed by the original, often preverbal, sentential negator. Stage II corresponds to this marker being strengthened by an additional item, resulting in bipartite expression of negation. At Stage III, the original negative marker is lost and negation is expressed by the innovated negative marker alone.

I use a schematic representation of the change based on these stages for my data collection, reflecting the distinct surface patterns found in the texts, without making assumptions about the syntactic status of the elements. Other accounts of JC suggest different stages, summarised in van der Auwera (2009: 38).

LG has progressed through all three stages of JC. In Old LG (OLG), negation was predominantly expressed by the preverbal marker *ni/ne*, (2a). This negation marker was optionally reinforced by various elements, including the negative indefinite *niouuiht* 'nothing'. At some point in the attestation gap between OLG and MLG (see Section 2.2), this item became incorporated into the negative system, and when MLG was first attested, bipartite negation *en ...nicht* was the most common way of expressing negation, (2b). Throughout MLG, the original preverbal negator becomes optional, falling out of use and leaving *nicht* alone as the predominant way of expressing sentential negation (2c). These examples correspond to stages I, II and III respectively, outlined in Table 1.

- (2) a. *'ni bium ic', quað he, 'that barn godes ...'*  
 NEG am I spoke he the child God.GEN  
 'I am not the child of God, he said' (Heliand 915)  
 (Breitbarth 2014: 2)
- b. *... dat des sin here nicht en wiste*  
 that it his master NEG EN knew

‘that his master did not know it’

(i.1.053, 1360, text 969, [von Bunge 1855](#))

- c. *Her Dirick heft eth nicht bygespraket*  
 Master Dirick have.PRF it NEG contradict.PST-PTCP  
 ‘Master Dirick did not contradict it’

(i.4.028, 1503, text 462, [von Bunge 1905a](#))

In LG spoken within what is now northern Germany, [Breitbarth \(2014\)](#) shows that, while OLG negation was expressed almost exclusively by the Stage I pattern, MLG was a language in transition from Stage II to Stage III, with both options being available for the majority of the period ([Breitbarth 2014: 176](#)). The change was almost complete by the end of MLG attestation. The situation of MLG spoken in the Baltics was similar, but with JC going almost to completion some 50 years before MLG spoken in German lands.

Languages also differ in the presence of Negative Concord (NC), which has two types ([Willis et al. 2013](#)). In Negative Doubling, negation is expressed morphologically on the sentential negator and an indefinite in the scope of negation. Negative Spread involves negative morphological marking on all indefinites in the scope of negation.

## 2.2 History

MLG can be defined simply as the language spoken between OLG and New LG (Plattdeutsch). Between the OLG and MLG period, there is an attestation gap of c.150 years, during which the language changed considerably. Here the relevant change is from a system using exclusively JC Stage I negation to one in which Stage I was virtually absent, and the transition to stage III beginning. [Peters \(2000\)](#) divides MLG into three sections. The first, c. 1200–1370, is characterised by a wide variety of regional dialects gradually replacing Latin as the language used for writing. This period ends in 1370 with the Hansa adopting LG. The second period c. 1370–1530 saw MLG serve as the international language of trade along the coasts of the North and Baltic seas, both spoken and written. During the final period, c. 1530–1650, MLG was in competition with Early New High German, which replaced MLG completely in written records by the mid-17<sup>th</sup> century.

MLG spoken in Germany can be divided into several dialect areas, with key cities in each having different written languages, at least in the early period. [Figure 1](#) shows the location of different dialects, and the datapoints identified by [Breitbarth \(2014\)](#).

Early in the MLG period there was a push to colonise eastward, beginning with the arrival of Albert of Buxhoevden at the mouth of the Daugava river in 1200 ([Plakans 2011: 36](#)). He founded Riga in 1201, the most important centre for trade in the region. The “Baltic Crusade”, led by the Teutonic Order, continued, and over the next century the rest of modern Estonia and Latvia was conquered, and many towns established.

Reval was founded by Danish settlers in 1219, who conquered northern Estonia in 1237 and ruled it for the next century ([Skyum-Nielsen 2014: 204](#)). However,



**Figure 1** Map of MLG dialects and cities (Breitbarth 2014: 13)

the majority of the vassals in Reval were of German origin (Skyum-Nielsen 2014: 209). Following a revolt by the Estonian peasants in 1343, the Teutonic Order took control of Estonia from the Danes, with the lands officially being transferred to the Order in 1346 (Skyum-Nielsen 2014: 206).

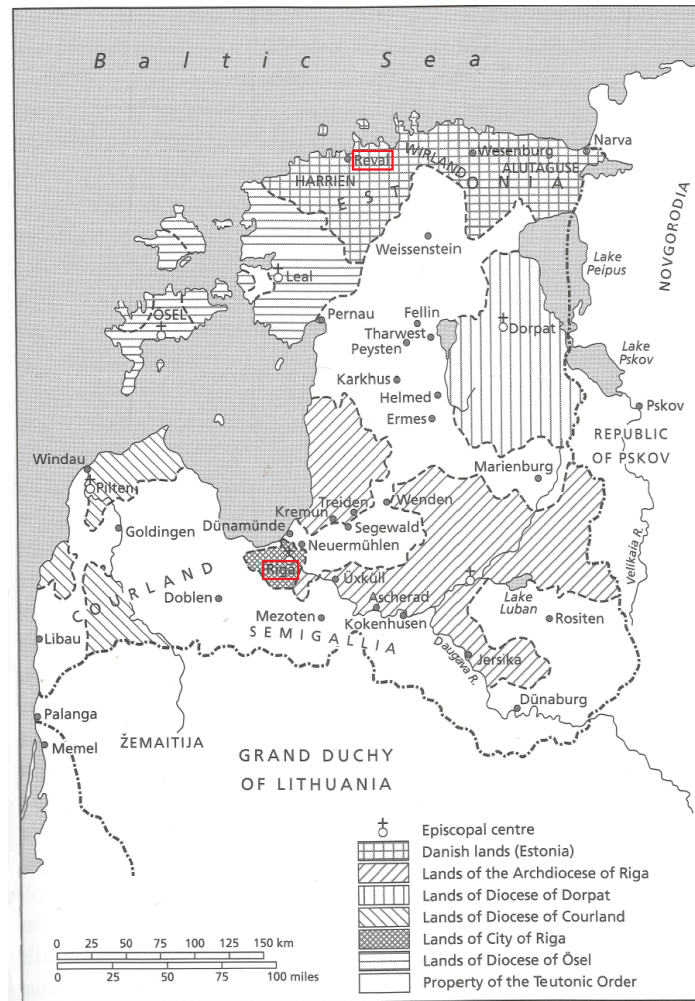
Livonia eventually became a confederation of powers, including the Order, bishoprics and the city of Riga, shown in Figure 2. There was often tension between the different ruling groups.

There was a situation of linguistic stratification, with LG used by German colonisers, who formed the upper classes, merchants and priests, and the local languages spoken by the rest of the population, who were low status (Plakans 2011: 71). Few German peasants settled in the Baltics.

The governing orders remained in close contact with their places of origin, and there was a continuous flow of migration from northern Germany, particularly to fill positions within the Order, as members were celibate (Schlau 1997). As centres of trade, there must also have been a consistent flow of traders between various cities on the coast of Germany and the Baltics. There is evidence, from written records of origin and from geographical surnames, that a large proportion of members of the Teutonic Order (Militzer 1997: 49) and the mercantile classes of Riga (van zur Mühlen 1997: 67) originated from the Westphalian dialect area, with many others from the Rhineland and Niedersachsen. MLG declined in the area from 1557, as the Livonian Confederation began to fall apart at the beginning of the Livonian Wars (Plakans 2011: 80).

### 2.3 Literature

There has so far been little investigation of the syntax of historical LG, excepting some recent works such as Petrova (2012). The only works I have found addressing



**Figure 2** Map of Baltic MLG areas and key cities in around 1300 (adapted from Plakans 2011: 55)

LG negation in any detail are Sundquist (2007), and the work on which this dissertation is based, Breitbarth (2014). The standard grammar of MLG, Lasch (1914) barely mentions negation, and includes little discussion of syntax. I have found no works addressing the syntax of Baltic LG. High German (HG) has been much better studied, and where relevant, I will refer to the work on negation in historical HG by Jäger (2008).

As part of a major study of negation in the history of LG, Breitbarth (2014) includes a section on the expression of sentential negation, (pp. 30–54) and a section on the theoretical underpinnings of the observed development (pp. 109–174). I refer to both heavily. My study is based on the methods used in Breitbarth (2014), taking samples of documents from specific locations over an extended period.

Sundquist (2007) outlines a study of negation in MLG texts from Lübeck written 1320–1500. The period is divided into 30-year section, each with c.75 tokens.

Examples of constituent negation are excluded, and examples with *en* involving negative concord are excluded as he argues that the form *en* in these constructions has a different function to the sentential negation marker. This leaves a corpus of 461 tokens, classified according to the 3 stages outlined in Section 2.1. In contrast to Breitbarth (2014), Sundquist (2007) doesn't exclude so-called exceptive clauses from his data. The significance and implications of this will be discussed in Section 3.1. His statistical analysis picks different factors as significant for each of the types of negation. The Constant Rate Hypothesis (Kroch 1989) is applied to the data, to show that the rate of change in the use of *en* alone and the use of *nicht* alone are the same, suggesting that these are functional doublets.

#### 2.4 Methodology

The methods I have used are very close to those used by Breitbarth (2014), in order that my results are as directly comparable as possible. Breitbarth (2014: 8–14) discusses her methods in detail, and I present my methods below.

Breitbarth (2014) studies a corpus of MLG chancery texts, as this genre is available continuously over a large time period, and is easy to date and place, allowing for detailed research into a change. The study covers 250 years, 1325–1574, split into 50-year sections for analysis. Breitbarth (2014) looks at texts written in 10 different chanceries, covering the four main dialect groups in Figure 1. A database of 2817 negative clauses was constructed, and the empirical results of the study discussed with reference to multivariate binomial regression analyses calculated in *GoldVarb X*, as described in Tagliamonte (2006), and statistical tests for independence such as  $\chi^2$  tests.

I have also used a collection of documents, published in a series of editions by Friedrich Georg von Bunge et al. I was able to find 13 volumes of the series, with the first 11 provided by the British Library<sup>1</sup> and the final two via archive.org<sup>2</sup> These volumes include all texts of historical importance to the Baltic region across the periods 1093–1459 and 1494–1505, including texts in Latin, Russian and HG. This study extends Breitbarth's (2014) work by adding datapoints for the two cities Riga and Reval.

As Breitbarth (2014: 10–11) explains, the advantage of working with official documents is that they specify the date and place of composition. I have selected for my corpus those texts which were composed in Riga or Reval, recording the year in which they were composed. No undated texts have been included. In sampling these texts, I aimed for 100 negative clauses per city per time period. For the first time period, I included all texts over 40 half-lines long (the text in volumes 1–6 is formatted in two columns) in order to eliminate working through very short texts which were much less likely to contain any examples of negation, yet was still somewhat short of this target. For all other periods, I worked through the texts available, selecting the first text from each city in each year that was over 40 half-

<sup>1</sup> [http://primocat.bl.uk/F?func=direct&local\\_base=ITEMV&doc\\_number=014919171&con\\_lng=prm](http://primocat.bl.uk/F?func=direct&local_base=ITEMV&doc_number=014919171&con_lng=prm)

<sup>2</sup> <https://archive.org/details/livestundkurInd02hollgoog>,  
<https://archive.org/details/livestundkurInd02bunggoog>

lines or 22 full lines long. Where this provided insufficient numbers of clauses for a given time period, a second pass through the volumes selected another text from a selection of random years.

Often in linguistic studies, working from official documents is regarded as problematic as the documents tend to be formulaic. However, I have found only one formulaic clause containing negation that comes up in a number of texts, the introduction to a will, which contains some variation on (3).

(3) *Wente de mynsche yn desse werlde geboren wert korte wyle hefft to levende*

*unnde nicht en weth de stunde synes dodes de tomale unseker,*  
and NEG EN know the hour his death.GEN  
*yodoch de doet seker unnde gewisz is ...*

(e.4.001, 1494, text 97, von Bunge 1900)

I have found 5 instances of this formula in my data, from Reval Periods 3–4. This is a small proportion of my data, and thus not a major problem. Working with published editions rather than primary sources may also be considered undesirable in linguistic research, as editors may make changes to the texts they publish. However, these changes are most often in orthography, which is abstracted away from in this study, so I do not see this as a problem. Editors rarely make changes to the syntax of a text (Breitbarth 2014: 11), which is what this study addresses.

My data does not cover the entire period of Breitbarth (2014), as shown in Table 2. This is not ideal, but there is no feasible way to resolve it. This observation will instead be used as partial explanation when my data appears skewed, specifically when Period 1 appears considerably more progressive in JC than expected, or when Period 3 appears less progressive than expected. I have no data to compare with Breitbarth's (2014) Period 5, but this is not a major issue as the data collected shows that JC had almost gone to completion in my corpus by the end of Period 4.

Time periods used in Breitbarth (2014)	Time periods used here	Actual range of data within time periods used here
1325–1374	1325–1374	1330–1368
1375–1424	1375–1424	1375–1424
1425–1474	1425–1474	1425–1459
1475–1524	1475–1524	1494–1505
1525–1575	—	no data

**Table 2** Exact time periods covered by data

There is also an issue with data sparsity, illustrated in Table 3. I was unable to find additional texts to rectify this. This is the likely reason why many of my results for Period 1 are not as expected.

Time Period	Riga	Reval	Total Clauses
1325–1374	76	44	120
1375–1424	152	110	262
1425–1474	118	120	238
1475–1524	121	103	224
Total Clauses	467	377	844

**Table 3** Summary of data distribution in the corpus

I constructed a database of the 844 clauses used in my study, with a sample entry presented in Table 4. I included a similar set of fields and encoding to Breitbarth (2014). Each clause was given a unique identifier, listed in the ID field and encoding, the city (Riga or Reval), the time period (1–4) and a unique number for that clause within that city and time. NEG1 refers to *en* and NEG2 to *nicht*, both of which may be present (1) or absent (0). The presence of other indefinites or adverbs, both morphologically negative (NI/NA) and non-negative (NNI/NNA) was encoded, in case time and space allowed me to discuss the interaction of negation and indefinites. This was not the case, so this information is largely redundant, as is the information on the relative position of verb and indefinite in field 11. The possible values for clause type and verb type match those used by Breitbarth (2014) in order that the data be comparable. These data fields can also be used to analyse four of the five factor groups discussed in Sundquist (2007): date of composition, verb type, clause type and verb position, as they involve a subset of the distinctions made by Breitbarth (2014). I chose not to address Sundquist’s (2007) final factor, type of subject, as he found it to be insignificant.

### 2.5 Statistical methods

The main form of statistical analysis performed in this study is Variable Rule analysis, common in sociolinguistic studies. Both Breitbarth (2014) and Sundquist (2007) use *GoldVerb X* for this, but I used *Rbrul*<sup>3</sup> which gives the same results but accepts more file types as input and allows factors and factor groups to retain meaningful names (Johnson 2009). In order to use this package, the relevant subsection of my data had to be re-coded, by specifying time period rather than date of each clause, and re-coding the information contained in the fields NEG1, NEG2 in the database as a binary choice between EnNicht and NichtAlone. The process behind variable rule analysis is multiple logistic regression. The dependent variable in a variable

<sup>3</sup> <http://www.danielezrajohnson.com/rbrul.html>



Number	Field	Value	Allowed values
1	ID	e.1.034	
2	City	Reval	Reval, Riga
3	Year	1360	integer
4	NEG1	1	binary
5	NEG2	1	binary
6	NI/NA	0	integer
7	NNI/NNA	0	integer
8	Clause Type	relative	main, complement, conditional, causal, concessive, consecutive, final, modal, relative, temporal
9	Position of Verb	2	1, 2, f[inal]
10	Position object/verb	VO	VO, OV, empty
11	Position indefinite/verb		VI, IV, empty
12	Type of verb	modal	aux[iliary], modal, lexical, special
13	Clause	de en scal sinen broke nicht weten	
14	Text number	982	integer
15	Volume	2	integer (2–13)

**Table 4** Sample database entry

rule analysis must involve some element of choice between two variants (here bipartite negation and *nicht* alone), and must be recurrent in language (Tagliamonte 2006: 131). The null hypothesis is that none of the factors has any systematic effect on the dependent variable. Table 5 shows the factor groups used.

The dependent variable is the presence or absence of *en* where *nicht* is also present. The analysis thus excludes all clauses containing *en* alone, or any negative indefinites or adverbs. The data used in the variable rule analyses is presented in Table 6. My application value is EnNicht, so the results show how much *en ...nicht* is favoured.

Time Period	1, 2, 3, 4
City	Riga, Reval
Verb Type	aux, modal, special, lexical
Verb Position	1, 2, f

**Table 5** Factor groups used in variable rule analysis

Time Period	EnNicht	NichtAlone	Total
1	17	45	62
2	75	84	159
3	91	97	188
4	12	197	209
Total	195	423	618

**Table 6** Summary of data used in variable rule analysis

It is clear that data sparsity is going to be an issue for Period 1, and the results of this will be discussed in relation to the relevant calculations in Section 3.

Rbrul provides various figures. The input refers to the overall percentage of rule application in the data given, here % EnNicht. Factor weights, calculated for each factor affecting the dependent variable, measure the influence that the particular factor has on the variable in question (how probable *en* is in that context), stated as a number between 0 and 1, with a number closer to 1 representing the application value being favoured, and closer to 0 the application value being disfavoured, compared to the input probability. These methods rely on the assumption that all the factors are independent.

### 3 FINDINGS

I have performed quantitative and statistical analyses on the four factor groups Breitbarth (2014) considers to be important in the development of negation in MLG: date of composition, dialect, verb position and verb type. Where appropriate, I will present results from the subset of my data which is comparable to that used in Sundquist (2007), in order to compare my data to his findings. This section will present superficial analysis of the data and comparison to the other works, with theoretical discussion following in Sections 4 and 5.



sults in [Sundquist \(2007\)](#), exceptive clauses will be included, but all those examples with negative concord and constituent negation will be removed, giving a total of 617 clauses and a different subset of my complete corpus.

### 3.2 Time period

In both [Breitbarth \(2014\)](#) and [Sundquist \(2007\)](#), the date of composition is a key factor affecting which expression of negation is most common. It is also the only factor considered significant for all of [Sundquist's \(2007\)](#) types of negation. I expected my data to show a decreasing percentage of bipartite negation compared to all negative clauses containing *nicht*. However, the data did not show this, as shown in [Table 8](#). The total number does include those clauses in which negation is expressed by one or more negative indefinites. [Figure 3](#) shows my trend compared to [Breitbarth's \(2014\)](#).

Time Period	Instances of <i>en ... nicht</i>	Instances of <i>nicht</i> without <i>en</i>	% of <i>nicht</i> also with <i>en</i>	Total negative clauses
1325–1374	17	46	27.0	113
1375–1424	75	86	46.6	246
1425–1474	91	99	47.9	228
1475–1524	12	201	5.6	224
total	195	432	31.1	811

**Table 8** Change in proportion of bipartite negation over time (cf. [Breitbarth 2014: 37](#))

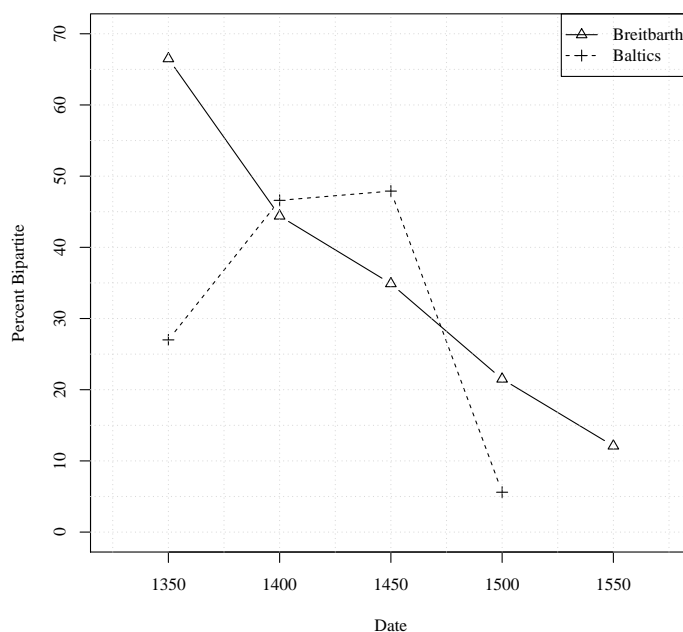
[Table 9](#) shows the factor weights calculated for each of the time periods.

The percentage of bipartite negation in Period 1 is rather low, below the values of Periods 2 and 3. This does not fit with the history of LG as a whole before this period, when *en ...nicht* was rare and *nicht* alone not present before MLG ([Breitbarth 2014: 30](#)). I will attribute this to data sparsity and look to the data for a more precise explanation in [Section 4.1](#).

Apart from this anomaly, the rest of the data shows a gradual trend for *nicht* alone to become favoured. JC progressed rather faster in the Baltics than in northern Germany. For Period 4, I have a percentage of bipartite negation around 6%, whereas the corresponding average value in [Breitbarth \(2014\)](#) is around 22%. My value for period 3 is rather higher than expected, but this tendency is discussed in relation to my incomplete coverage of the period in [Section 2.4](#).

[Table 10](#) shows my data broken down to compare with [Sundquist's \(2007\)](#) periods.

Excepting the first period, which for my data contains only one clause, there is a clear trend for type I negation, in my corpus all exceptive clauses with *en*, to decrease quickly from a low initial frequency. There is also a tendency for type II



**Figure 3** Graph of change in proportion of bipartite negation over time.

Time Period	% of clauses that have EnNicht	Total tokens	Centred factor weight
1325–1374	27.4%	62	0.503
1375–1424	47.2%	159	0.706
1425–1474	48.4%	188	0.716
1475–1524	5.7%	209	0.141
Grand mean	31.6%		
Input	27.1%		$p=4.95 \times 10^{-27}$

**Table 9** Effect of date of composition on bipartite expression of negation (cf. [Breitbarth 2014: 43](#))

to decrease with time and type III to increase. JC progressed faster in the Baltics than in Lübeck.

Time Period	Type I	%	Type II	%	Type III	%	Total
1320–1349	0	0%	0	0%	1	100%	1
1350–1379	11	12.8%	27	31.4%	48	55.8%	86
1380–1409	11	10.1%	52	47.7%	46	42.2%	109
1410–1439	7	5.1%	57	41.9%	72	52.9%	136
1440–1469	4	4.5%	39	44.3%	45	51.1%	88
1470–1500	0	0%	8	9.5%	76	90.5%	84
total	33	6.5%	183	36.3%	288	57.1%	504

**Table 10** Change in proportion of bipartite negation over time (cf. [Sundquist 2007](#): 157)

### 3.3 Dialect

The second factor considered significant by [Breitbarth \(2014\)](#) in the progression of JC is scribal dialect. My data set has only two distinct places of origin, but they are geographically distant and have different settlement patterns (see Section 2.2). [Sundquist \(2007\)](#) doesn't discuss dialect, as all his texts are from one city. Table 11 shows how the percentage of bipartite negation changed over time in my cities.

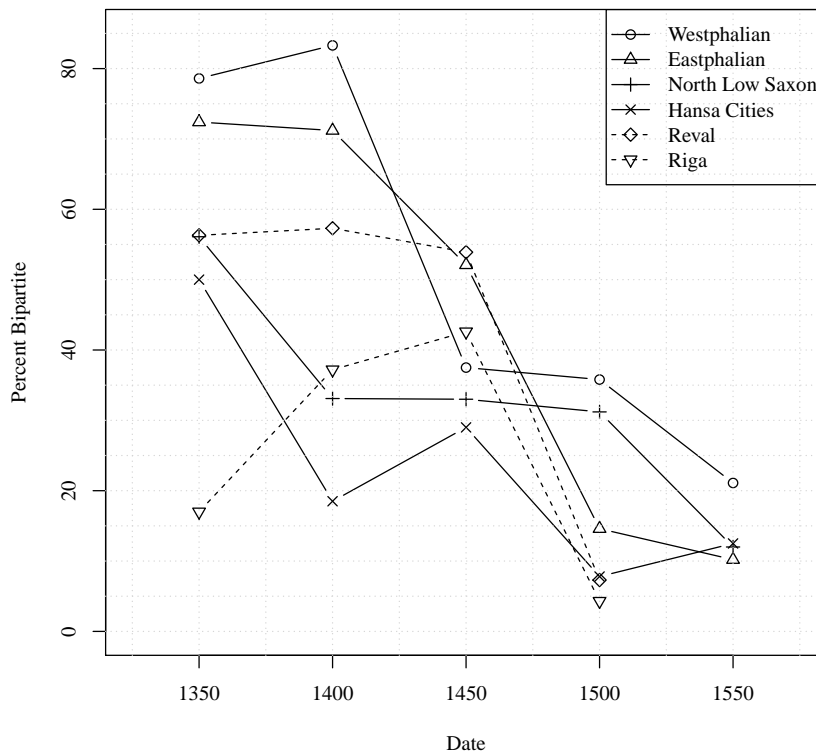
Time Period	Riga		Reval	
	instances of <i>en ... nicht</i>	% of all clauses with <i>nicht</i>	instances of <i>en ... nicht</i>	% of all clauses with <i>nicht</i>
1325–1374	8	17.0	9	56.3
1375–1424	32	37.2	43	57.3
1425–1474	43	42.6	48	53.9
1475–1524	5	4.3	7	7.3
total	88	25.1	107	38.9

**Table 11** Change in proportion of bipartite negation in each city (cf. [Breitbarth 2014](#): 44)

This table shows that the percentage for Riga is very low compared to the other data points, any data from [Breitbarth \(2014\)](#) and our knowledge about OLG. This issue will be discussed in Section 4.1. The same period for Reval is slightly lower than expected, and both of the values for Period 3 are a little high, but this tendency is discussed in Section 2.4. The data shows the change progressing faster in Riga than in Reval, as both the values for Period 4 and the mean value for the proportion

of bipartite negation are lower in Riga. However, it is hard to get a clear picture given the anomaly, and that the sample size for each city is smaller, as the percentage values fluctuate rather than giving a smooth downward trajectory. This is also the case in Breitbarth (2014), despite her larger sample. Compared to the scribal dialects discussed in Breitbarth (2014), both Riga and Reval are fairly progressive.

Figure 4 compares my results to Breitbarth’s (2014) cities.



**Figure 4** Graph of change in proportion of bipartite negation over time in different dialects.

Table 12 shows the factor weights for the two cities. This shows that a text from Reval is slightly more likely than average to contain an instance of bipartite negation, and a text from Riga slightly less likely. This statistic tells us that the difference between the cities is small.

Table 13 shows the results of Pearson’s Chi-Square test on the different time periods within each city, and on the cities. The first tests whether the time periods differ from each other for each city, and the second whether the cities are significantly different.

The p-values resulting from these tests are all small, well below the threshold of statistical significance  $p=0.05$ . For the first two tests, this shows that for both the dialects, the time periods differ from each other in a highly significant way in the

Dialect	% of clauses that have EnNicht	Total tokens	Centred factor weight
Riga	25.5	363	0.422
Reval	39.2	273	0.578
Grand mean	31.6%		
Input	32.0%		$p = 2.83 \times 10^{-4}$

**Table 12** Effect of dialect on bipartite expression of negation (cf. [Breitbarth 2014: 44](#))

Test	test statistic	degrees of freedom	p-value
Periods tested against each other for Riga	50.1618	3	$7.38 \times 10^{-11}$
Periods tested against each other for Reval	60.9448	3	$3.693 \times 10^{-13}$
Riga tested against Reval	13.6506	1	$2.202 \times 10^{-4}$

**Table 13** Tests of independence of time period and dialect (cf. [Breitbarth 2014: 45](#))

expression of negation. However, this is only an observation that the way negation is expressed in the different periods is different in each dialect, not evidence that the frequency of *en* is decreasing. For the third, this shows that there is a statistically significant difference between the two dialects in the way negation is expressed. The fact that this value is low, where it might have been expected that the dialects were not so different, may relate to the anomalous value in Riga Period 1.

Test	test statistic	degrees of freedom	p-value
Riga against NLS	10.1132	1	0.001472
Riga against Hansa Cities	5.401	1	0.02012
Reval against NLS	1.1613	1	0.2812
Reval against Hansa Cities	32.1348	1	$1.438 \times 10^{-8}$

**Table 14** Tests of independence of dialects (cf. [Breitbarth 2014: 45](#))

Table 14 shows the results of testing for independence between my dialects and two of [Breitbarth's \(2014\)](#) dialects: North Low Saxon (NLS) and Hansa Cities. The tests show that Reval and NLS behave similarly, as the p-value here is not in the range for rejecting the null hypothesis. Although the difference between Riga and



the Hansa cities is statistically significant, Riga is closer to this dialect than to NLS, and Reval is very distant from the Hansa cities. This supports the idea that both Riga and Reval sit between NLS and the Hansa Cities in terms of how progressive each dialect is, with Reval fairly close to NLS and Riga mid-way between them.

### 3.4 *Verb position*

The third factor to be investigated is the position of the finite verb in negative clauses. Like most other Germanic languages, MLG canonical word order in main clauses is verb-second, with the finite verb in second position following a single clause-initial constituent (Haider 2009). Syntactically, the finite verb is in the highest functional head, with the specifier obligatorily realised. In subordinate clauses introduced by a complementiser, this position is not available for the verb, so it appears in final position. Sometimes another element may be extraposed to the right of the clause, after the finite verb. These verb-late clauses will be considered with other verb-final clauses, following Breitbarth (2014). The verb may occur in absolute initial position in conditional clauses. Jäger (2008: 146) shows that bipartite negation in MHG is more common in verb-first and especially verb-second clauses, than in verb-late clauses, as shown in Table 15.

	Number of clauses with <i>en</i>	Percentage of clauses with <i>en</i>	Number of clauses without <i>en</i>	total
verb-first	6	40.0	9	15
verb-second	57	32.9	116	173
verb-late	14	13.0	94	108
total	77	26.0	219	296

**Table 15** Presence of bipartite negation in MHG texts (adapted from Jäger 2008: 146)

In contrast, Burridge (1993: 193) shows that for Middle Dutch, clause types which are typically verb-initial are the most progressive, deleting the preverbal marker much more often in these contexts than in verb-second or verb final clauses.

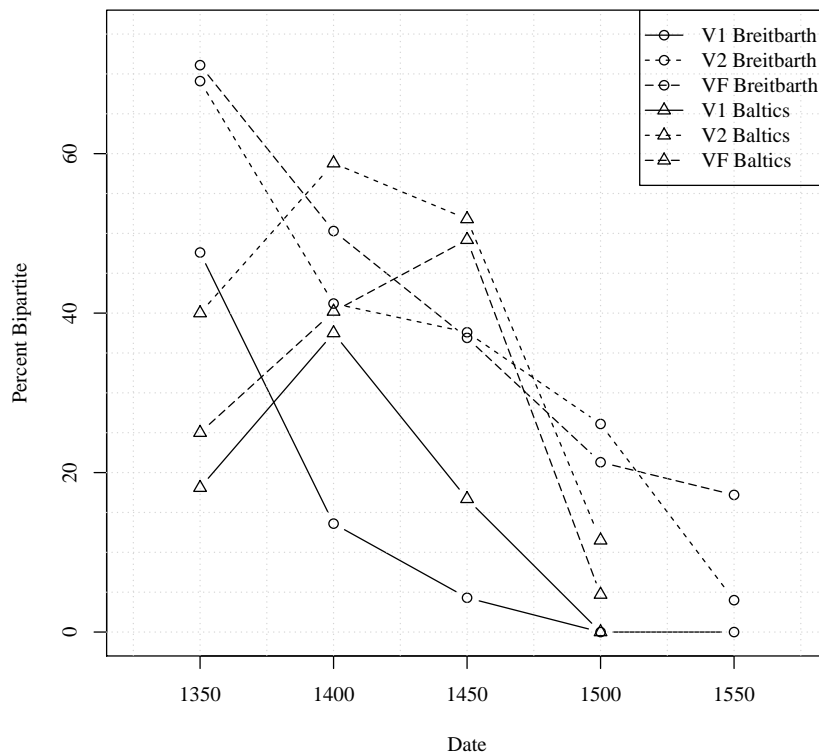
Table 16 shows the raw data for the different verb positions across my time periods, and Figure 5 compares the trends to Breitbarth (2014).

Allowing for the anomalous values in Period 1, there is a decreasing trend visible, and a clear difference in the proportion of clauses with bipartite negation across the different verb types. *En* is lost earlier from verb-initial clauses than either verb-second or verb-late, matching Breitbarth (2014). However, *en* is also lost faster in verb-final than verb-second clauses, which is different, as these values in Breitbarth (2014) are not significantly different. There will always be low numbers of verb-initial negative clauses in quantitative studies, as such clauses, often imperatives or yes-no questions, are rare in texts (Burridge 1993: 190).

Negation in Baltic Middle Low German

Time Period	Verb-first		Verb-second		Verb-late	
	<i>en ... nicht</i>	%	<i>en ... nicht</i>	%	<i>en ... nicht</i>	%
1325–1374	2	(18.1)	6	(40.0)	9	(25.0)
1375–1424	6	(37.5)	30	(58.8)	37	(40.2)
1425–1474	2	(16.7)	29	(51.8)	60	(49.2)
1475–1524	0	(0.0)	6	(11.5)	6	(4.7)
total	10	(15.9)	71	(40.8)	112	(29.6)

**Table 16** Change in proportion of bipartite negation with different verb positions over time (cf. Breitbarth 2014: 49)



**Figure 5** Graph of change in proportion of bipartite negation over time for different verb positions

Table 17 shows the factor weights for the different verb positions. These reinforce the observations that verb-initial clauses strongly disfavour bipartite negation, verb-final clauses slightly favour bipartite negation and verb-second clauses strongly favour it.

Verb Position	Total tokens	% of clauses that have EnNicht	Centred factor weight
1	63	15.9	0.332
2	179	40.2	0.640
final	376	30.1	0.531
Grand mean		31.6	
Input		27.5	$p=7.12 \times 10^{-4}$

**Table 17** Effect of verb position on bipartite expression of negation (cf. Breitbarth 2014: 49)

A chi-square test was performed in order to test whether there is a statistically significant difference between the behaviour of verb-second and verb-final clauses.

$\chi^2$	6.3216
Degree of freedom	1
p-value	0.01193

**Table 18** Testing the independence of verb-second and verb-late (cf. Breitbarth 2014: 48)

As the p-value here is low, below the statistical significance threshold  $p=0.05$ , there is a significant difference between the verb positions in my corpus. This may reflect the possibility of increased contact with HG compared to Breitbarth (2014)'s sample, as my proportions of bipartite negation for both V1 and V2 clauses, those environments that are conservative in HG, are both slightly raised in comparison to Breitbarth (2014) and my proportion for verb-final clauses is a little lower.

Sundquist (2007) discusses this factor to some extent, stating "I examine whether one or other of the three types [of negation] occurs more often in embedded clauses in clause-medial rather than verb-final position" (Sundquist 2007: 159). However, this statement of the factor does not define in sufficient detail what constitutes a verb-final compared to clause-medial position, or even what is included in the concept 'embedded clause', in order for me to replicate the tests with any degree of certainty.

### 3.5 Verb type

The final factor discussed here is the type of finite verb in negative clauses. A number of studies looking at JC in various languages have suggested that certain types of verb tend to remain conservative and retain the preverbal marker for longer than other verbs. [Jespersen \(1917: 13–14\)](#) noted for English that certain verbs still appeared in stage II-type negation when this was no longer the norm. [Burridge \(1993\)](#) also notes that for Middle Dutch, Stage I negation “... appears to be limited largely to a class of what may be described as common usage verbs. This group of verbs includes modals and verbs like ‘to say’, ‘to do’, ‘to know’, ‘to speak.’” ([Burridge 1993: 180](#)).

Following [Breitbarth \(2014\)](#), I distinguished ‘special’ verbs, those lexical verbs mentioned in the class of ‘common usage’ verbs in [Burridge \(1993: 180\)](#), from other lexical verbs. [Sundquist \(2007\)](#) only distinguishes two categories of verb, namely high-frequency verbs, in which he includes *haben*, *sein* and the modal verbs, and other verbs, corresponding to my aux+modal and special+lexical. This is found to be a significant factor only for his type II and III negation (bipartite and *nicht* alone), with common verbs favouring negation by *nicht* alone. These findings contradict [Burridge \(1993\)](#).

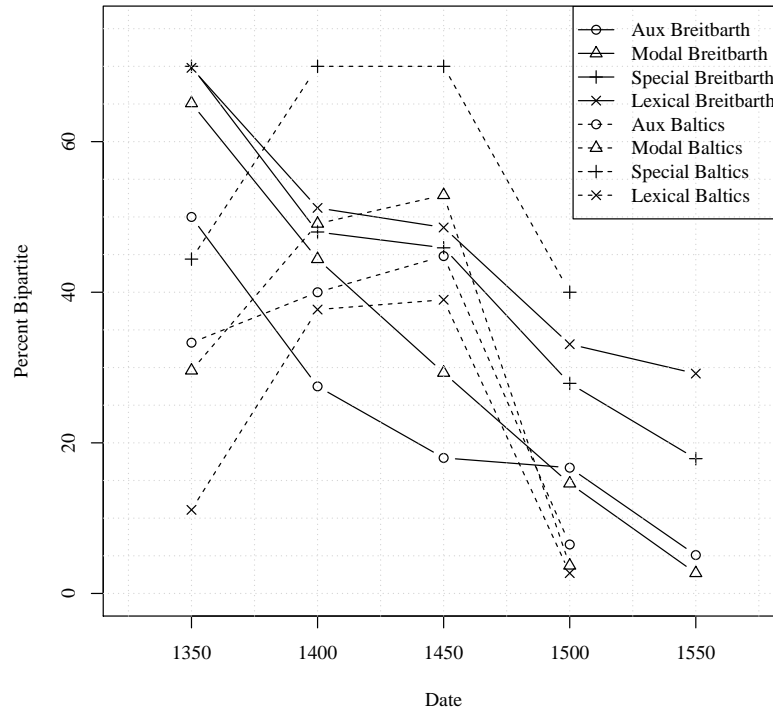
The raw data on verb type across the time periods from my data is given in [Table 19](#), with [Figure 6](#) comparing my results to [Breitbarth’s \(2014\)](#).

Time Period	auxiliary (%)	modal (%)	special (%)	lexical (%)	special & lexical (%)
1325–1374	3 (33.3)	8 (29.6)	4 (44.4)	2 (11.1)	6 (22.2)
1375–1424	12 (40.0)	28 (49.1)	14 (70.0)	20 (37.7)	34 (50.7)
1425–1474	26 (44.8)	27 (52.9)	14 (70.0)	23 (39.0)	37 (46.8)
1475–1524	3 (6.5)	3 (3.7)	4 (40.0)	2 (2.7)	6 (7.2)
total	44 (30.8)	66 (30.6)	36 (61.1)	47 (23.3)	83 (31.7)

**Table 19** Change in proportion of bipartite negation with different verb types over time (cf. [Breitbarth 2014: 52](#))

These numbers don’t show either of the expected trends. The most likely reason for this is data sparsity, as my counts are low. There are also considerably fewer lexical verbs in my corpus than may be expected, and more auxiliaries, compared to the proportions found in [Breitbarth’s \(2014\)](#) corpus. Given that my data doesn’t show a trend of decreasing over time, a chi-square test would provide little relevant information, beyond which of the types of verb has the widest range of fluctuation.

[Table 20](#) shows the factor weights for the verb types distinguished in [Breitbarth \(2014\)](#).



**Figure 6** Graph of change in proportion of bipartite negation over time for different verb types

Verb Type	% of clauses that have EnNicht	Total tokens	Centred factor weight
auxiliary	30.6	144	0.440
modal	30.7	218	0.442
special	61.7	60	0.741
lexical	24.0	196	0.360
Grand mean	31.6%		
Input	35.9%		$p = 2.82 \times 10^{-6}$

**Table 20** Effect of verb type on bipartite expression of negation (cf. Breitbarth 2014: 52)

This shows that for modal and especially auxiliary verbs, bipartite negation is dispreferred, which does match Breitbarth's (2014) findings. However, the factor weights for special and lexical verbs don't match Breitbarth (2014), with special verbs strongly favouring bipartite negation and lexical verbs strongly disfavouring bipartite negation. I have no explanation for this, other than it is some quirk of my particular texts.

Echoing Sundquist (2007), Table 21 shows the factor weights if no distinction is made between lexical and special verbs.

Verb Type	% of clauses that have EnNicht	Total tokens	Centred factor weight
aux	30.6	144	0.491
modal	30.7	218	0.493
LexSpec	32.8	256	0.517
Grand mean	31.6%		
Input	31.4%		p = 0.852

**Table 21** Effect of verb type on bipartite expression of negation without distinguishing lexical and special verbs

The p-value is high, well above the p=0.05 level of statistical significance, thus this factor group is not statistically significant if the distinction between lexical and special verbs is not made.

## 4 DISCUSSION

### 4.1 Issues in the data

From my presentation of the data from my corpus, one particular section of the data has appeared as anomalous, specifically that from Riga in Period 1. This is clear from Table 11, showing that only 17% of all negative clauses from this period retain the old preverbal marker *en*. This contradicts the patterns found in all other research on MLG negation, and does not follow from what is known about negation in OLG, or what happens in the rest of the periods investigated here, and I conclude that this is an anomaly. As the rest of the data analysis is carried out without distinguishing texts from the different cities, this has some impact on all my data analysis, including the calculation of factor weights.

Looking in detail at the textual sources from this period, a possible explanation could be the fact that for Riga Period 1 the majority (88.4%) of the negative clauses come from law codes (see Appendix A), whereas in other periods the sources are more varied, including a much larger proportion of clauses coming from diplomatic or personal letters than from law codes.

Of the 47 clauses containing *nicht* in this sample, 39 contain *nicht* alone, representing Stage III of JC. Of these 39 clauses, all but 5 come from the law codes. An unusually high proportion of these clauses are of the form shown in (5), that is, a verb in the conditional appearing early in the clause, and *nicht* in final position. This type of sentence appears frequently in law codes, to express meanings along the lines of ‘if a person does not do this, he will be punished’.

- (5) a. ... *doit he des nicht* ...  
do.SBJV he that NEG  
‘If he doesn’t do that’  
(i.1.054, 1360, text 969, von Bunge 1855)
- b. *kamen de den nicht* ...  
come.SBJV they then NEG  
‘If they didn’t come...’  
(i.1.048, 1354, text 950, von Bunge 1855)

Verb-initial conditional clauses are some of the earliest environments from which *en* is lost. The proportion of conditional clauses in data from Period 1 Riga is 14.5% of all negative clauses, compared to 10.6%, 8.3% and 12.5% in Periods 2, 3 and 4 respectively. This unusually high proportion of conditional clauses in this sample may thus skew the data, making it look more progressive than is generally true. Another trend of this data set is a large proportion (59.4% of all clauses) of modal verbs, which are shown in Section 3.5 also to be a context in which *en* is lost sooner. This trend is marked, with the corresponding value for Periods 2–4 at 43.5%, 32.9% and 38.9% of all negative clauses respectively. Examples of this clause type are given in (6).

- (6) a. ... *und des nicht don wolde*  
and it NEG do will.PST  
‘... and didn’t want to do it ...’  
(i.1.033, 1354, text 950, von Bunge 1855)
- b. ... *des oldermannes bodes to guder wis nicht*  
the alderman.GEN servant.GEN to good manner NEG  
*achten wolde.*  
pay.attention.to will.PST  
‘The alderman’s servant did not want to pay proper attention to it’  
(i.1.019, 1354, text 950, von Bunge 1855)

There are no other texts from Riga for that time period written in MLG in the texts available to me. This is because Latin was still being used for almost all official writing at this time.

#### 4.2 Summary of significant factors in the development of negation

From my data analysis, taking into account all of the issues discussed in Sections 2.4 and 4.1, a number of trends have become apparent.

As in Breitbarth's (2014) sample, the clauses she calls 'exceptive' have distinctive properties in this corpus, setting them apart from other conditional clauses. The form *en* that appears in these structures can be argued to be a different yet homophonous form, not expressing sentential negation in these clauses.

Section 3.2 shows that the date of composition of a text is a significant factor in how negation is expressed. Specifically, the proportion of bipartite negation decreases with time, and the proportion of negation expressed by *nicht* alone increases accordingly. My data set showed the clearest trend when broken down according to the time periods used in Sundquist (2007), showing that stage III negation had almost completely replaced stage II negation (over 90% of clauses) by 1500. This would suggest that the change from stage II to stage III went to completion quicker in the Baltics than in Sundquist's Lübeck sample, or most of Breitbarth's scribal dialects.

In my data set, the place of origin of a text is also a significant factor in the expression of sentential negation. While my corpus as a whole is progressive, texts from Riga are generally more progressive than those from Reval, and there is a statistically significant difference between the two cities. Both appear to be slightly more progressive than Sundquist's (2007) Lübeck, and to sit between Breitbarth's (2014) North Low Saxon and Hansa Cities varieties.

The position of the finite verb in the clause is also significant. Clauses with verb-second order are the most conservative, with a higher proportion of bipartite negation than either verb-final or verb-initial clauses. Verb-initial clauses are the most progressive. This pattern is interesting as it appears to have features of the patterns found by Breitbarth (2014) for MLG in Germany, and also by Jäger (2008) in MHG. This may suggest that in the Baltics there was some dialect mixing between LG and HG speakers, an idea explored in more detail in Section 4.3.

I was expecting to find that verb type was also a significant factor, although with unpredictable effect, as different studies show different tendencies, with common usage verbs being found to be either conservative or progressive. However, my data for this factor is inconclusive, due to my small sample size, data sparsity in the first period and an anomalously low frequency of lexical verbs. There is a suggestion that auxiliary and modal verbs are more progressive than lexical verbs, supporting observations in Sundquist (2007) and Breitbarth (2014).

The trends in my data are broadly similar to those found by Breitbarth (2014). However, there are three interesting trends which deviate slightly, and an explanation will be sought in Section 4.3. The observations to be explained are the fact that both my dialects seem very progressive in terms of the speed they move from Stage II to Stage III negation, the fact that Riga is more progressive than Reval, and the fact that the effect of verb position on the expression of negation differs from that found in Breitbarth's (2014) MLG corpus.

#### 4.3 Explanation of trends and differences

The settlement patterns and patterns of dialect contact found in the Baltic cities may provide some suggestions as to why the patterns observed above arose. As



discussed in Section 2.2, a large proportion of settlers to the Baltics came from Westphalia, as evidenced by surnames. However, this variety is the most conservative of Breitbarth's (2014) varieties. The progressive Baltic varieties may best be accounted for by treating them as instances of koinéisation, following from a period of dialect mixture. This phenomenon is discussed in detail in Trudgill (1994), who explains that the formation of a koiné might involve simplification of forms and patterns, the creation of intermediate forms between the forms of the various dialects involved, and levelling of the many variants involved. As the cities of Riga and Reval were both centres of international trade, settled by people from a variety of areas of what is now northern Germany, there would have been a lot of contact between speakers of different dialects. The speakers in contact would mostly be adults, thus simplification of the language is a more likely outcome. Throughout the period, contact between LG speakers in the Baltics and those in the areas of origin was maintained, both by written correspondence, and due to continued migration to the Baltic cities for example as replacements for members of the Teutonic Order (Schlau 1997). This is precisely the kind of situation where a koiné is likely to develop. As the older preverbal negation marker could no longer express negation on its own, this element is a prime target for simplification as it is more opaque in its function. This was very different to the sociolinguistic situation in Westphalia, where there was much less mobility and greater social stability, a situation which tends to result in more conservative varieties (Trudgill 2011: 13). This is not to say that without dialect mixing JC would not have taken place in LG, just that such situations accelerated the loss of the redundant preverbal marker.

Contact between MLG and the languages of the native population in the Baltics is perhaps less likely to have had a significant effect on the progression of JC in MLG, as there seems to have been considerable segregation between the two populations, and there is little to suggest that German speakers made efforts to learn Estonian or Latvian (Plakans 2011: 71). Any contact between the languages is likely to have been casual contact between adult speakers, and this type of situation tends to lead only to influence in the lexicon and sometimes phonology, rather than syntax (Thomason 2010). There is indeed some evidence of lexical borrowing into LG from Estonian (Johansen & van zur Mühlen 1973: 383). There is no evidence however, of any official language policy concerning the use or avoidance of any language in any particular situation (Kala 2014: 288).

It is not clear why Riga should be more progressive than Reval, as the sociolinguistic situation in both cities appears to have been similar, with a small German-speaking elite population and thriving international trade. It is possible that the merchants travelling to each city were from different places, as the cities lay on different major trade routes, but if this is the case, it would require much more detailed investigation into language contact phenomena in the area than is possible here. One idea is that Riga is more progressive simply because it was larger than Reval. The population of Riga by the late 15<sup>th</sup> century is estimated at 12,000, whereas Reval around 6,000 (Plakans 2011: 81). Perhaps this difference in size led to a strengthening of the effects of dialect mixing resulting from urbanisation.

It is also not entirely clear why the position of the finite verb should have a different effect on the progression of JC in the Baltics than in other varieties of LG. The system I found seems to show interference from the HG system. There is no evidence of a large HG-speaking community in either city, but there must have been some contact between HG and LG dialect users in the Baltics, as a sizeable proportion of the texts in the editions I used were written in HG, particularly in the later periods. This is consistent with the fact that HG began to replace LG as the language used for official documents. There must have been some contact between LG and HG, even if only between scribes. However, it is far from clear why dialect contact between LG and HG varieties should result in specifically this influence. A much greater study of the patterns in both LG and HG for verbal position and other factors would be required to confirm that this is a real effect, not just a quirk of the small samples found here and in Jäger (2008).

## 5 SYNTACTIC THEORY

### 5.1 *Theoretical framework*

The theoretical framework that I use here to develop an account of negation in MLG is that of Minimalism, specifically the theory presented in Chomsky (2001). The assumptions outlined here are fairly standard for Minimalist accounts of syntax, and thus will be stated but not explicitly justified.

The key assumptions underlying all generative theories of language relates to the nature of the human language faculty. Specifically, it is assumed that human language is acquired on the basis of three elements: Universal Grammar (UG), primary linguistic data (PLD), and certain principles of computation and economy external to the language faculty, the so-called Third Factor principles (Chomsky 2000, 2005). Together, UG and the third factor principles determine the set of all possible human languages, and the ways in which these languages can differ from. PLD refers to the language a child is exposed to during infancy, from which it must infer the properties of its language. It has been proposed, in what has become known as the Borer-Chomsky Conjecture (7), that the locus of all variation is the lexicon, specifically the features associated with particular lexical items or classes thereof.

- (7) The Borer-Chomsky Conjecture:  
All parameters of variation are attributable to differences in the features of particular items (e.g. the functional heads) in the lexicon.  
(Baker 2008: 355)

This model of human language is significant for ideas about how language change can occur. An early account of this is Andersen (1973), but much subsequent work is based on similar ideas, such as Roberts (2007). In this model, diachronic change is attributed to acquisition, specifically that children infer their grammars from the output of adults. This process of inference allows children to develop subtly different grammars from those of their parents in cases where the output is ambiguous between different systems. This account describes both how language-internal

changes can occur, and how those changes in the language of adults resulting from language or dialect contact can become fixed in the language of the next generations.

Central to Minimalism is the notion of features. All items in the lexicon are made up of features of various types, summarised in Table 22.

Type of feature	Notation	Properties
Semantic	[S]	legible at the semantic interface, encodes semantic information, no role in syntax
Interpretable Formal	[iF]	legible at the semantic interface, encodes syntactic and semantic information
Uninterpretable Formal	[uF]	not legible at interfaces, encodes syntactic information
Phonological	[P]	legible at the phonological interface, encodes phonological information, no role in syntax

**Table 22** Summary of generally accepted properties of features in Minimalism

Formal features drive the operations Agree and Move (called Internal Merge in Chomsky (2001)) within a derivation, as uninterpretable features are not legible to the interfaces, thus need to be eliminated before the derivation is sent to the interfaces. This is the Principle of Full Interpretation, which defines what constitutes a valid derivation (Chomsky 1995). In more recent work, from Chomsky (2000), an additional dimension of variation is introduced, namely valuation. Uninterpretable features enter the derivation unvalued, and receive a value from an interpretable, thus valued, feature of the same type. This information is retained for the phonological component, but deleted from the Narrow Syntax under Agree, to keep the distinction with interpretable features (Chomsky 2001: 5). The interpretable features of a given lexical item are valued when they enter the Numeration for a particular derivation. The valued features are on those items where the feature has a semantic value, for example number on a noun, and unvalued where it is purely formal, such as number on a verb. For my account, following Pesetsky & Torrego (2007), I will treat the valuation and interpretability of features as independent properties. Valuation of a feature refers to it being lexically specified on a given item. Interpretability refers to whether the feature contributes to the semantic interpretation. As Pesetsky & Torrego (2007) argue, these properties seem rather different to be linked via a biconditional as proposed by Chomsky, and that there is evidence for all four possible combinations of these properties.

There are three mechanisms used to build syntactic structure. The most basic is Merge, which adds an item from the Numeration to the derivation. This operation has no cost in terms of the economy of a derivation. Agree is a more complex

mechanism, which has many incarnations. I will use the formulation presented in Chomsky (2001). Agree is a relation which holds between  $\alpha$  and  $\beta$ , where  $\alpha$ , the goal, has an interpretable formal feature and  $\beta$ , the probe, an uninterpretable feature, which is deleted under Agree (Chomsky 2001: 3). An item is active to take part in an Agree relation if it has an uninterpretable feature, and locality constraints apply such that a probe must enter into an Agree relation with the closest active goal. Move combines properties of both Merge and Agree. When an Agree relation occurs and an additional diacritic feature [\*] is present on the probe, the goal is moved up the tree and merged immediately above the probe, thus satisfying its diacritic feature. Both Move and Agree have some associated cost in terms of the economy of a derivation, thus need to be justified, and more economical derivations must be independently ruled out.

### 5.2 Negation within generative syntax

There have been numerous accounts of negation within generative syntax. Broadly, they can be split into those approaches in which negation is a functional projection in its own right, as proposed by Pollock (1989), here called “NegP approaches”, and those in which negation is an adverbial modifier, designated “NegP-free approaches” following Breitbarth (2014).

Breitbarth (2014) provides a NegP-free account of negation, which she applies to JC in LG. Negation is proposed to have layers of internal structure equivalent to those proposed for other adverbs by Cardinaletti & Starke (1999). The different types of negative marker are distinguished by how many layers of structure they have, regulated by third-factor principles including Cardinaletti & Starke’s (1999) Minimise Structure. While such an account is promising, paralleling the development of a multiple-agree-based theory for  $\phi$ -features, at present there seems to be too great a body of evidence in favour of NegP for it to be rejected without further research.

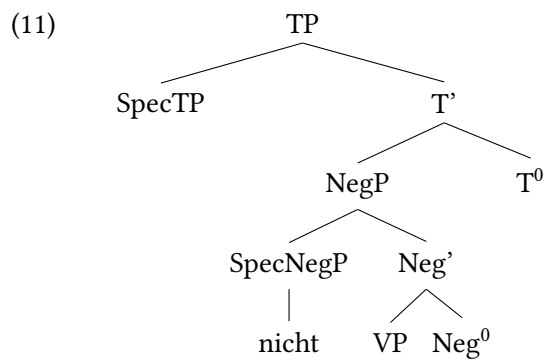
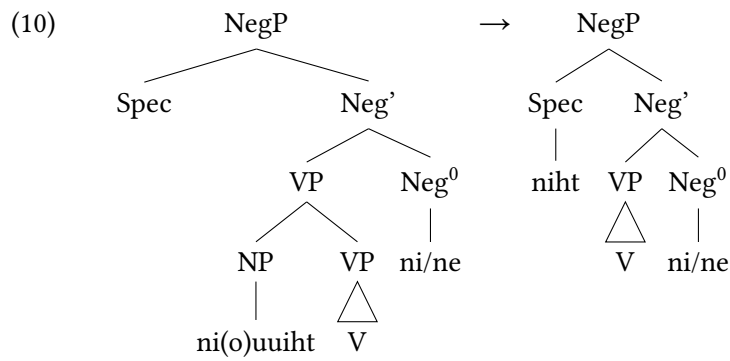
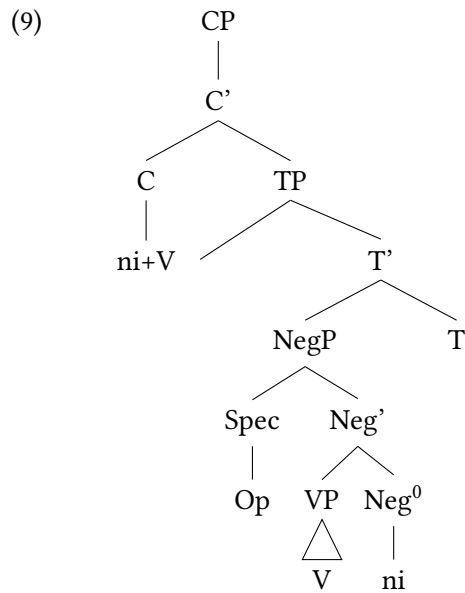
There are crucial differences between negative adverbs and clitics, and other types of adverb or clitic, which originally motivated Pollock (1989) to propose the functional projection NegP, for example distributional differences to VP-adjoined adverbs, illustrated in (8).

- (8) a. John often reads.  
b. \*John not reads.

Negative particles appear to be functional rather than lexical elements, as they are a closed class and express grammatical meaning. NegP analyses can account for clitic-like negation markers, which attach to  $V_{\text{fin}}$  through movement and thus depend on the verb for their position, and adverb-like markers, with fixed position and not affecting movement. These analyses allow diachronic change to be modelled in the same way as synchronic variation between languages, and the change resembles a common grammaticalization process (van Gelderen 2004).

Jäger (2008) gives an account of negation with NegP projected immediately above VP in every negative clause in all diachronic stages of HG. She refers to Longo-

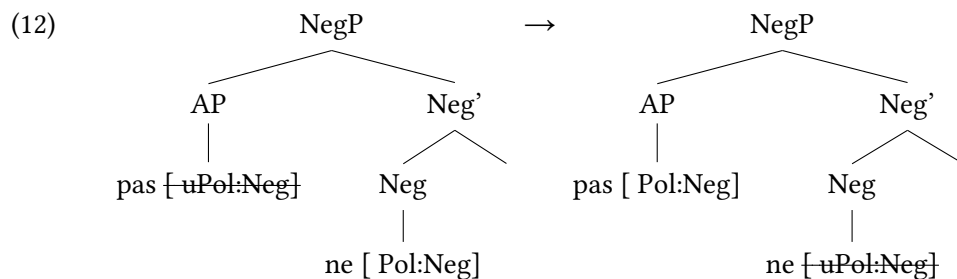
bardi's (2001) Inertia Theory of syntactic change, that clause structure change is minimised. JC is thus a change from Neg<sup>0</sup> *ni* alone in OHG (9), later reinforced by adverbial *niouuiht*, which grammaticalizes to SpecNegP (10). The original Neg<sup>0</sup> is gradually lost, leaving modern German (11).



Sundquist's (2007) account of LG is very similar. While this accounts for JC, it doesn't explain the properties of the different negative elements at different stages in Minimalist terms.

Zeijlstra's (2004) account differs in that NegP is only projected in certain negative clauses, those involving negative concord. Breitbarth (2014) raises issue with this type of account as it creates a major, rather artificial, structural distinction between otherwise very similar languages, for example Standard German and Bavarian, which differ only in the presence of negative concord. Zeijlstra (2004) also relies on Multiple Agree, a modification to Chomsky (2001) which I do not consider well-supported.

The account of negation I find most appropriate for MLG is that of Willis (2011), which, like Roberts & Roussou (2003) characterises the development as changes in the interpretability of features on the old and new negative markers. Like Jäger (2008), it is assumed that NegP is universally projected in a negative clause. The changes in features allow JC to be understood as a staged process. Rather than positing a [Neg] feature on negative elements, Willis's (2011) account proposes that the original negator is associated with a polarity feature which is inherently valued as negative, represented here as [Pol:Neg]. The element which will replace the old negator is incorporated into the negative system by acquiring an uninterpretable polarity feature, which must be checked by some item with an interpretable polarity feature, namely the old negative marker. This relationship is then inverted, with the new marker bearing an interpretable feature and the old marker an uninterpretable feature, with the reanalysis shown in (12), exemplified by French. In all cases, movement of the verb through the Neg head is assumed, resulting in the usual Probe-Goal configuration for an Agree relation.



The use of polarity features rather than a negation feature is also found in Brown (2003) in connection with negation in Old Church Slavonic. While Brown's (2003) implementation is problematic in that it involves an Agree relation between features of different types, the notion of using polarity features is advantageous in that it interacts well with accounts of negative indefinites and NC, and with ideas about where the new negators in JC originate. This will be discussed with respect to MLG in Section 5.3.

### 5.3 The syntax of Jespersen's Cycle in Baltic MLG

This section presents a theoretical account of the data presented in Section 3, based on that outlined in Willis (2011). Willis (2011) draws two conclusions, the first relating to the origin of the new marker of sentential negation. For Welsh, the development of the new marker is argued to be (13).

- (13) noun > indefinite pronoun > VP-adverb > uninterpretable negative specifier > interpretable negative specifier

If this holds for LG, progression through most of these stages happened in OLG, before the period addressed by my data. However, the account given by Breitbarth (2014) of the development of *nicht* from OLG *niouuiht* appears to be compatible with the first 3–4 stages of this analysis. As discussed in Section 2.1, the new marker of negation *nicht* developed from the OLG *niouuiht* ‘nothing’. This was originally part of the indefinite system, but there are instances in OLG of *niouuiht* being used as an adverbial strengthener of negation (Breitbarth 2014). The transitional period, in which the item becomes an uninterpretable, then interpretable, marker of negation *nicht* fell in the attestation gap. The development of *nicht* does appear to fit this pattern.

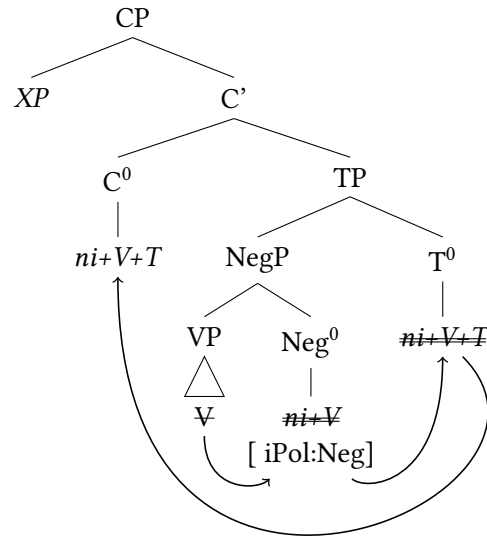
The second conclusion drawn in Willis (2011) is as follows:

the Neg-feature of the Neg-head changes from interpretable to uninterpretable during Stage 2(a) [negation marker optionally reinforced] of Jespersen's Cycle; this change creates pressure for subsequent changes by which the features and phonological content of the Neg-head are lost entirely (Stage 3(b)) [old negation marker lost from language]. (Willis 2011: 118)

I propose an account of the structure of negative clauses in OLG from Breitbarth's (2014) data, and MLG from my own. Following Jäger (2008), I will assume that NegP is head-final, and TP (her IP) is head-final. There may well be more sub-projections within TP, but this is not relevant to the expression of negation.

Initially in OLG, I propose a structure as represented schematically in (14), in which sentential negation is expressed solely by the original preverbal negator *ni*. This bears an interpretable Polarity feature, inherently valued as Negative, and expresses logical negation. It appears strictly left-adjacent to the finite verb, which provides evidence that the finite verb moves through the negative head at some point in the derivation, and *ni* subsequently moves along with it. In Minimalist terms, this must be motivated by a series of Agree relations involving some [F\*], but the precise nature of this is not relevant here. The examples presented here will demonstrate verb-second order, as this is the unmarked order for a main clause, *XP* represents the constituent in initial position.

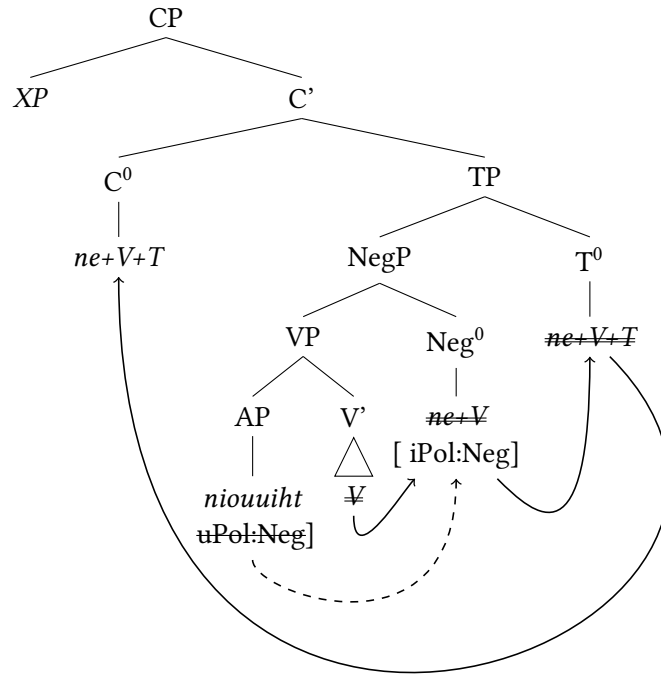
(14) Stage 1: OLG



This preverbal negator could optionally be emphasised by certain modifiers, including the negative indefinite *niouuiht*. This element is restricted to occurring in the logical scope of sentential negation, but can't yet express negation unsupported. It is initially an indefinite D element, but at some point is reanalysed as an adverb, still restricted to negative contexts. This would suggest the presence of an uninterpretable, yet inherently negative, polarity feature which must be checked by the sentential negation marker under an Agree relation, marked by a dashed arrow in the figures. At this stage in OLG, a reinforced negative clause would have the schematic structure indicated in (15).

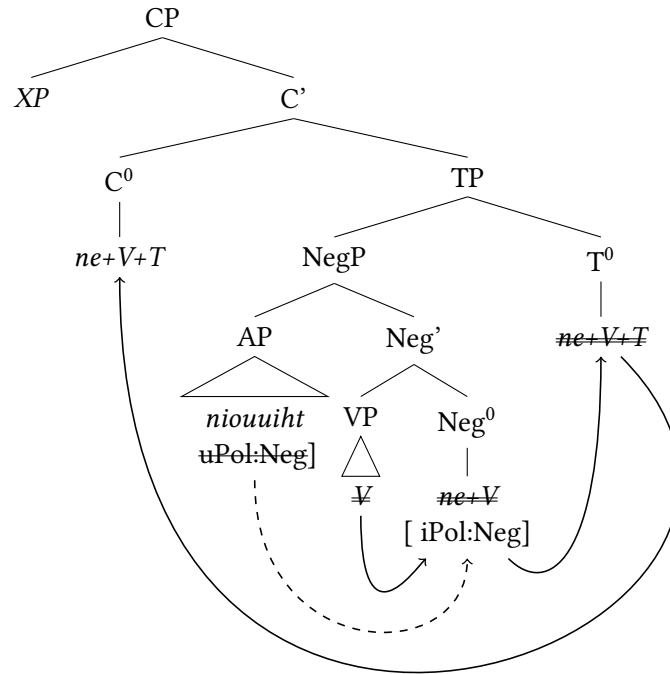


(15) Stage 2a: OLG



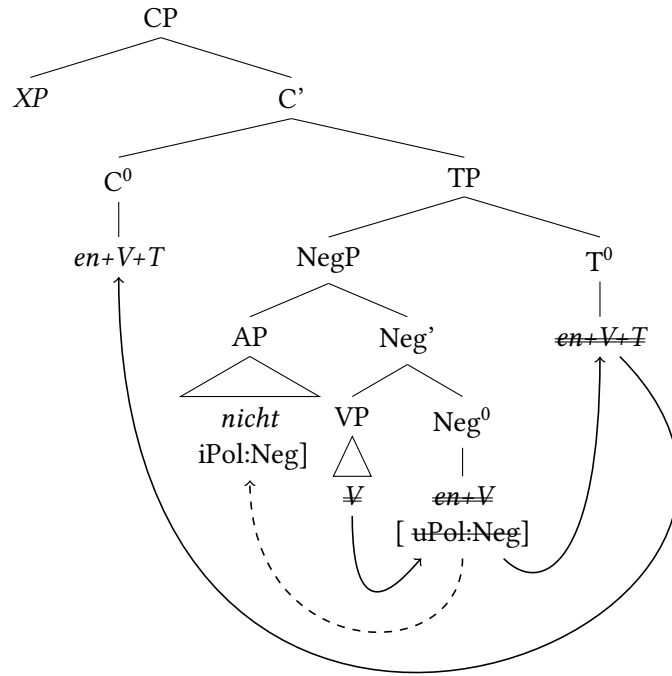
At some stage, the VP-adjoined adverb is reanalysed as part of the formal expression of negation, and thus appears in SpecNegP, still with an uninterpretable negative polarity feature. The reanalysis results from the surface string being ambiguous as to whether *niouuiht* is a VP-adjoined adverb or in SpecNegP, leading children to hypothesise a different structure to that of their parents. The locus of sentential negation is still the original preverbal marker. This is the situation in late OLG, and is represented in (16).

(16) Stage 2b: Late OLG

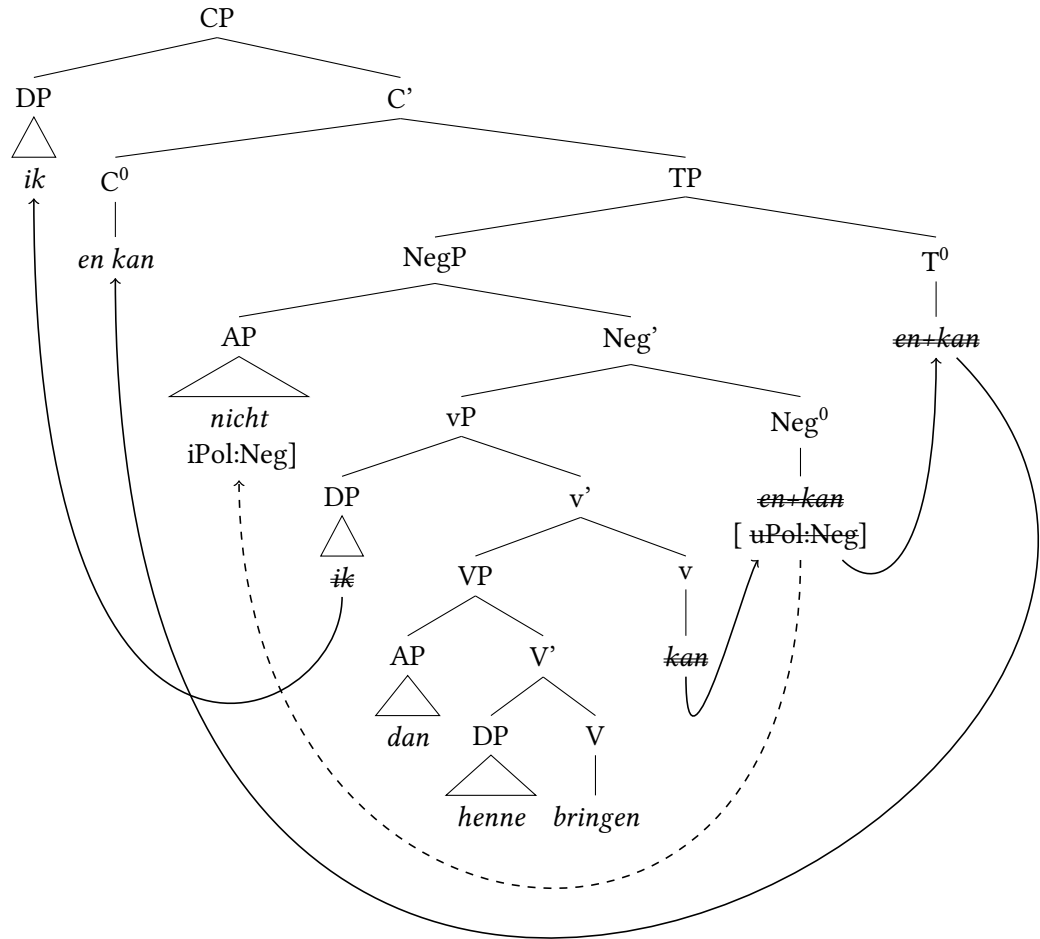


At the beginning of the MLG period, as attested in my data, the original preverbal marker *en* is already optional when it co-occurs with *nicht*, and cannot express sentential negation on its own, suggesting that it is no longer the locus of expression of sentential negation. This is reflected structurally in the rearrangement of features on the items in NegP, such that *nicht* now bears the interpretable feature and *en* the uninterpretable feature, as shown schematically in (17). This is exemplified by a clause from my corpus in (18) clause e.2.100, 1397, text 1451, von Bunge (1859): *Ik en kan nicht dan henne brengen*.

(17) Stage 3a: MLG

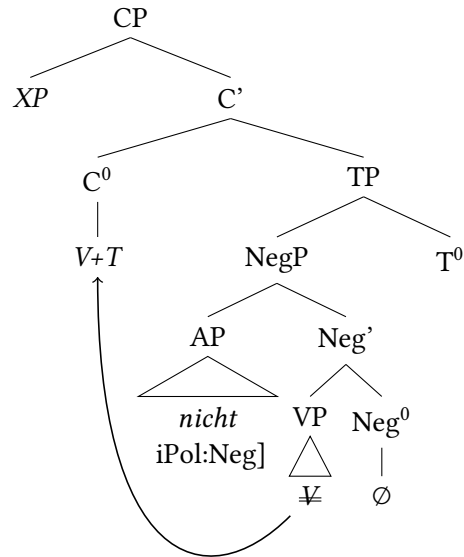


(18) Stage 3a: MLG example



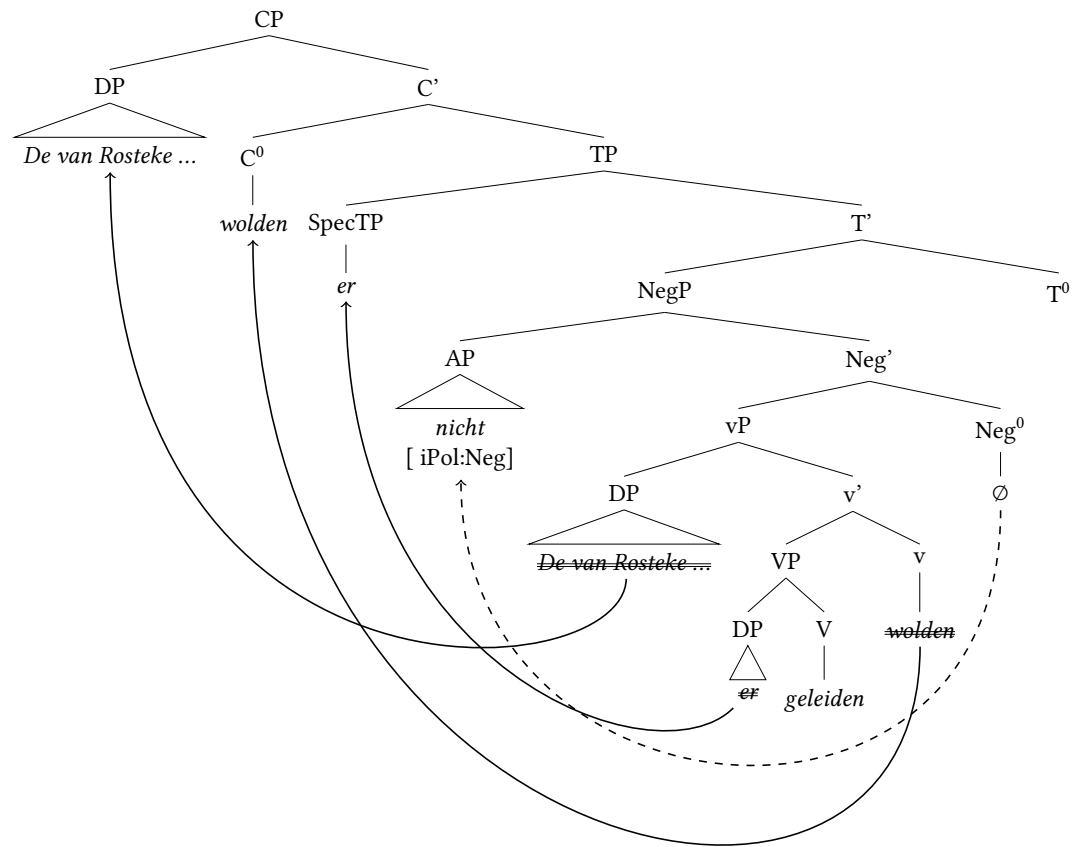
In MLG clauses where negation is expressed by *nicht* alone, the new sentential negator appears in SpecNegP still, and the negative head is phonologically empty. This analysis is consistent with that proposed by Jäger (2008: 48) for modern standard (High) German, although this is disputed, with other accounts placing *nicht* as a negative head. This would represent a return to the situation of Stage 1, with the possibility of the cycle then happening again. For my data, there is no evidence that *nicht* is a functional head, as it does not interact with movement of the finite verb. Thus, I suggest the structure of Figure (19) for those clauses in my corpus containing *nicht* alone. This is applied to my data in Figure (20): clause i.2.031, 1394, text 1359, von Bunge (1859): *De van Rosteke unde de van des Wismer wolden er nicht geleiden*

(19) Stage 3b: MLG



This account is short of a full account of negation in MLG, as the features associated with negative indefinites, and those which control the way they interact with the sentential negation markers have not been discussed. There is not space in this work for a detailed analysis of negative indefinites, but some comments can be made about what a full account must contain, based on superficial analysis of the NC properties of MLG. Table 23 shows the NC properties found in my corpus.

(20) Stage 3b: MLG example



The data shows that *en*, no longer a marker of sentential negation in MLG, can co-occur with negative indefinites. Negative indefinites cannot co-occur with the new sentential negator. There are instances of clauses containing multiple negative indefinites, such as (21), showing that MLG had negative spread but not negative doubling.

<i>en</i> +NI	98
<i>en</i> +NI+ <i>nicht</i>	0
NI+ <i>nicht</i>	0
NI alone	86
<i>en</i> + NNI	0
NNI + <i>nicht</i>	11

**Table 23** Negative concord in MLG

- (21) *Vort so ne schal nimand nenerleie gud kopen*  
 furthermore so EN shall no-one no.kind.of goods sell  
 ‘furthermore, no-one shall sell any kind of goods’  
 (i.2.107, 1376, text 1123, [von Bunge 1857](#))

It would seem that neither *en* nor negative indefinites in MLG have an interpretable negation feature, as they can co-occur with each other in MLG. If they did have interpretable negation features, this would give a reading of double logical negation when there was bipartite negation, or two (or more) negative indefinites in the same clause, which is clearly not the case. They are however all negative polarity items, so are likely to bear uninterpretable negative polarity features. Thus, there must be some means to license the presence of these items and check their [uPol:Neg] features. There must also be some mechanism to prevent negative indefinites co-occurring with the new sentential negation marker, which could perhaps be some operator in Neg<sup>0</sup> position. I am not in a position to elaborate further.

This section has presented an account of the syntactic structure of sentential negation in Baltic MLG, working within a Minimalist framework and relying on the approach presented in [Willis \(2011\)](#). While the account is incomplete in that it cannot deal with the NC properties observed in Baltic MLG, I believe it would be possible to integrate the required mechanisms into this account, given more detailed investigation into the nature of the NC.

## 6 CONCLUSION

It has been shown that Jespersen’s Cycle in Baltic MLG progresses in a similar way to that in MLG spoken in northern Germany, as presented in [Breitbarth \(2014\)](#). At the start of the period, bipartite expression of negation was common, but this was gradually replaced by negation expressed by *nicht* alone. As discussed in Section 4.2, the relevant factors affecting the change are the date of composition of a text, its place of origin, and the position of the finite verb in a clause. Jespersen’s Cycle progresses slightly quicker in Baltic MLG than in that of [Breitbarth \(2014\)](#)’s study, a trend which can be attributed to dialect contact, as discussed in Section 4.3, as speakers of many different varieties moved to and traded in the Baltics. The findings from my study were used to argue for a theoretical approach to Jespersen’s Cycle and the expression of sentential negation in Section 5.3. This account is based within Minimalism, and reliant on ideas put forward in [Willis \(2011\)](#), which account well for the observed patterns.

The syntax of Baltic MLG is still largely unexplored, but it would be of value to sociolinguistics to study the dialect mixing in this area further. It would also be interesting to explore whether the account of sentential negation put forward here could indeed be extended to account for the NC patterns of Baltic MLG.

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## A LIST OF DATA SOURCES

Volumes used, as named in the following tables and the database:

- Volume 2: [von Bunge \(1855\)](#)
- Volume 3: [von Bunge \(1857\)](#)
- Volume 4: [von Bunge \(1859\)](#)
- Volume 5: [von Bunge \(1867\)](#)
- Volume 7: [von Bunge \(1881\)](#)
- Volume 8: [von Bunge \(1884\)](#)
- Volume 9: [von Bunge \(1889\)](#)
- Volume 10: [von Bunge \(1896\)](#)
- Volume 11: [von Bunge \(1905b\)](#)
- Volume 12: [von Bunge \(1900\)](#)
- Volume 13: [von Bunge \(1905a\)](#)

Volume	Text	Year	Type	Clauses	Description
2	741	1330	Letter	1	Voigt, Rath und Gemeinde der Stadt Riga urkunden über die Bedingungen, unter welchen sich die Stadt Riga dem Meister und dem Orden unterwerfen will, den 30 März 1330
2	950	1354	Law	60	Schra der Gesellschaft der Kaufleute in Riga, vom J. 1354
2	969	1360	Law	8	Schra der Goldschmiede zu Riga, vom 25. Januar 1360
2	1035	1366	Letter	7	Der Rigische Rath vermittelt einen Vergleich zwischen dem Katharinenkloster und der Gildestube von Münster in Riga, Servitutstreitigkeiten etc betreffend, den 9. October 1366

**Table 24** Riga Period 1

Volume	Text	Year	Type	Clauses	Description
2	792	1340	Letter	1	Conrad Preen, Königl. Hauptmann zu Reval, der Königl. Rath in Esthland unnd der Rath der Stadt Reval vergleichen sich über die Heuschläge une Weiden am Jerweküll'schen See, den 30. Juni 1340
2	933	1350	Law	11	Wilküren des Rathes zu Reval(und Lübeck), aus der ersten Hälfte des vierzehnten Jahrhunderts
2	982	1360	Law	23	Vollständiger redigirte Reval'sche Bursprake aus derselben Zeit [etwa 1360]
2	983	1360	Law	4	Willkühr der Revaler Rathes aus derselben Zeit
2	1049	1368	Letter	5	Richard Rike, Rathsherr zu Reval, theilt dem Reval'schen Rathe verschiedene Nachrichten über die Verhandlung auf dem zu Johannis in Lübeck gehaltenen Hansatage mit, den 13. Juli 1368

**Table 25** Reval Period 1

Riga Period 2					Reval period 2				
Vol.	Text	Year	Type	Clauses	Vol.	Text	Year	Type	Clauses
3	1123	1376	Law	34	3	1125	1377	Letter	2
3	1183	1382	Law	18	3	1126	1377	Letter	2
3	1213	1384	Law	8	3	1139	1379	Letter	2
3	1252	1388	Letter	1	4	1361	1384	Letter	1
3	1276	1390	Law	15	3	1231	1385	Letter	2
4	1522	1375	Law	9	3	1260	1388	Letter	1
4	1359	1394	Letter	7	3	1262	1389	Letter	1
4	1459	1397	Letter	5	3	1264	1390	Letter	1
4	1468	1397	Law	11	3	1323	1392	Letter	3
4	1502	1400	Letter	1	3	1347	1393	Letter	4
4	1623	1403	Letter	2	4	1360	1394	Letter	1
4	1653	1405	Letter	6	4	1361	1394	Letter	2
4	1809	1409	Letter	2	4	1365	1394	Law	16
4	1815	1409	Letter	4	4	1401	1395	Letter	3
4	1828	1410	Letter	12	4	1414	1396	Letter	12
4	1948	1413	Letter	1	4	1447	1397	Letter	1
5	2099	1416	Letter	4	4	1451	1397	Letter	9
5	2118	1417	Letter	3	4	1489	1399	Letter	2
5	2190	1418	Letter	1	4	1514	1400	Law	5
5	2454	1420	Letter	1	4	1551	1400	Letter	5
5	2688	1423	Letter	5	4	1583	1400	Letter	3
7	121	1424	Letter	1	4	1607	1402	Letter	1
8	637	1400	Letter	1	4	1682	1405	Letter	3
					4	1731	1407	Letter	4
					4	1757	1408	Letter	5
					4	1825	1410	Letter	3
					4	1916	1412	Letter	3
					5	2115	1417	Letter	5
					5	2320	1419	Letter	1
					5	2468	1420	Letter	6
					7	84	1424	Letter	1

Table 26 Riga Period 2 and Reval Period 2

Negation in Baltic Middle Low German

Riga Period 3					Reval period 3				
Vol.	Text	Year	Type	Clauses	Vol.	Text	Year	Type	Clauses
7	249	1425	Law	3	7	470	1426	Letter	4
7	449	1426	Letter	1	7	572	1427	Letter	5
7	666	1428	Letter	41	8	29	1429	Letter	5
8	445	1431	Letter	2	8	241	1430	Letter	2
8	540	1432	Letter	3	8	397	1431	Letter	5
8	730	1433	Letter	6	8	709	1433	Letter	2
8	763	1434	Letter	1	8	817	1434	Letter	6
9	4	1436	Letter	1	8	1030	1435	Law	11
9	207	1437	Letter	1	9	258	1438	Law	26
9	350	1438	Letter	2	9	400	1438	Letter	4
9	429	1439	Letter	5	9	696	1441	Law	10
9	637	1440	Letter	5	9	719	1441	Letter	11
9	704	1441	Law	1	9	911	1442	Will	1
9	893	1442	Letter	3	9	984	1443	Letter	7
10	150	1445	Letter	9	10	89	1444	Letter	1
10	297	1447	Letter	18	10	230	1446	Letter	2
11	418	1455	Letter	4	11	385	1449	Will	4
11	668	1457	Letter	1	11	514	1456	Letter	1
11	804	1459	Letter	11	11	534	1456	Letter	4
					11	771	1458	Letter	6
					11	826	1459	Letter	3

**Table 27** Riga Period 3 and Reval Period 3

Riga Period 4					Reval period 4				
Vol.	Text	Year	Type	Clauses	Vol.	Text	Year	Type	Clauses
12	13	1494	Letter	1	12	97	1494	Will	1
12	377	1496	Letter	8	12	110	1495	court proc.	8
12	434	1497	Letter	8	12	267	1495	Will	1
12	635	1498	Letter	4	12	268	1495	Will	2
12	699	1498	Letter	1	12	406	1496	Letter	14
12	875	1499	Letter	5	12	504	1497	Letter	4
12	876	1499	Letter	7	12	566	1497	Letter	4
12	878	1499	Letter	2	12	836	1499	Letter	4
12	908	1499	Letter	1	12	837	1499	Letter	4
12	936	1500	Letter	1	12	969	1500	Letter	8
13	136	1501	Letter	3	12	971	1500	Letter	3
13	297	1502	Letter	3	13	93	1501	Letter	3
13	308	1502	Letter	3	13	186	1501	Letter	5
13	353	1502	Letter	3	12	187	1501	Letter	1
13	412	1502	Law	50	13	227	1502	Letter	4
13	427	1503	Law	6	13	288	1502	Letter	12
13	457	1503	Letter	4	13	449	1503	Letter	1
13	462	1503	Letter	9	13	475	1503	Letter	2
13	787	1505	Letter	2	13	529	1503	Letter	6
					13	636	1504	Letter	3
					13	637	1504	Letter	1
					13	707	1505	Law	11
					13	742	1505	Letter	1

**Table 28** Riga Period 4 and Reval Period 4