Modality and negation in the history of Low German

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Abstract

The aim of the present paper is to study and account for the scopal interaction between modal verbs and sentential negation in historical Low German. A number of proposals concerning the scope of negation in clauses with modal verbs for other languages (mainly English) will be evaluated against the empirical findings from historical Low German. It will be argued that syntactic accounts of this interaction are not empirically adequate, and that a lexical account will have to be complemented by a pragmatic one in order to account for the behaviour and development of some modal verbs.

Keywords: Old Low German, Middle Low German, modal verbs, scope of negation, polysemy, language change

1. Introduction

The present paper looks at the interaction of modality and negation in Old and Middle Low German, the changes within the system of modal verbs, and the changes of their morphosyntactic properties. The diachrony of Low German is a notoriously under-researched area, and the scopal interaction of modality and negation in historical Low German is no exception to this. In this section, the empirical domain and the
theoretical background of this paper will be sketched. In Section 2, previous accounts of the scopal interaction between modal verbs and negation are presented, which will be tested against the data from historical Low German in sections 3 and 4. Section 5 sums up the paper and draws a conclusion.

1.1. The empirical domain

Old Low German (= Old Saxon) is the language assumed to have been spoken between ca. 800 and 1200 by a group of Germanic tribes who called themselves Saxons in what is now north-western Germany and parts of what are now the Netherlands (cf. Klein 2000: 1245). The first monasteries – and with these (mostly Latin) writing – appeared in the area at the end of the 8th century, though only in the south of the area. Old Low German is poorly attested textually: the bulk of it is biblical poetry (Heliand, Genesis) from the 9th century, the rest consisting of more minor texts such as verses, ecclesiastic and secular functional prose, and glosses. The Heliand epos (ca. 830) is the largest work by far; with some 6000 lines, it makes up about 80% of all OLG material (Klein 2000; Sanders 2000). All of the Heliand epos, the Genesis fragments and the minor texts were used for the present study.1

Middle Low German refers to the dialects spoken in northern Germany between 1200 and 1650 (Stellmacher 1990: 39, Peters 2000b: 1482). In the 14th and 15th centuries, it developed into an international lingua franca in connection with the expansion of the Hanseatic League, spoken all around the North and Baltic Seas, which led to a certain standardisation of the written language incorporating features of different Low German dialects (Härd 1980, 2000; Peters 2000a). Middle Low German was replaced as the written language in the area by (Early New) High German between 1550 and 1650, though Low German continued to exist in spoken dialects.

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1. The Heliand is transmitted in two more complete manuscripts, the Monacensis (M, ca. 850) and Cottonianus (C, 10th century) manuscripts presented in Sievers’ (1878) edition, besides smaller fragments. There do not appear differences between manuscripts M and C relevant to the topic of this paper, apart from one line (4266), which is completely different in M and C, using different modal verbs:

M: kumen ni mostun thea liudi thurh leden strid.
   come   NEG must    the   people   through   bad dispute

C: ni uueldun thar tuo cumin thia liudi thuru lethan strid.
   NEG   wanted   there   to   come   the   people   through   bad dispute
   ‘the people were not able/ did not want to get (there) through the bad dispute’

(Heliand 4266–4267)

The figures in the present paper are mainly based on M, and complemented where necessary by C.
The composition of the Middle Low German corpus used in the present study follows the criteria proposed by van Reenen & Mulders (2000) for a corpus of Middle Dutch (also used for the Dutch in Transition corpus (1400–1700) built at Nijmegen University; cf. e.g. Coupé & van Kemenade 2009, and for Middle Low German for the Atlas spätmittelalterlicher Schreibsprachen des niederdeutschen Altlandes und angrenzender Gebiete; cf. Peters et al. to appear). Only texts that are not translated and which are clearly dated and localised have been chosen for the corpus. These properties allow for a fine-grained research of linguistic change both through time and space. For the present corpus of Middle Low German, charters, official letters and legal texts from the public records of ten places all over the Middle Low German area were chosen, covering the time span from 1325 to 1575. In addition, the town charters of Kleve were considered, even though the Low Franconian dialect of the city is in the transition area between Middle Low German and Middle Dutch for the period under consideration (Peters 2000a: 1417).³

1.2. Theoretical background: Modality and its interaction with sentential negation

The literature on modality is vast (cf. e.g. Palmer 2001). For the purposes of the present paper it will be sufficient to distinguish epistemic from root uses of modal verbs. Both epistemic and root meanings can express a possibility or a necessity, as illustrated for English in the following examples from Butler (2003: 970).⁴

(1) epistemic necessity
You must be an ambassador to England or France
= ‘it is a necessary assumption that you are an ambassador to England or France’

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2. The same selection criteria were also already applied in Lasch’s (1914) Middle Low German grammar.
3. If any line were to be drawn between Middle Dutch and Middle Low German, Peters (1984: 55) proposes that the dialect of Kleve-Gelderland be west and Westphalian east of it.
4. Besides, there are so-called dynamic uses of modal verbs, which do not so much express the possibility or necessity of a proposition, but (in the words of an anonymous reviewer) assign a property to the subject, such as ability as in John can (= knows how to) swim. Such uses are semantically similar to main verbs (and indeed in several languages expressed by non-modals) and are thus expected to scope below sentential negation. The present paper has nothing specific to say about them.
(2) epistemic possibility
You may be an ambassador to England or France
= ‘it is a possible assumption that you are an ambassador to England or France’

(3) root necessity
You must be an ambassador to England or France
= ‘you are required to be an ambassador to England or France’

(4) root possibility
You may be an ambassador to England or France
= ‘you are allowed to be an ambassador to England or France’

In terms of quantification, possibility corresponds to existential quantification, necessity to universal quantification, as the operators $\Box$ (necessary) and $\Diamond$ (possible) can be defined by truth conditions within Kripke semantics as follows:

(5) a. $[\Box S \text{ is true in } w] \iff \forall w' [(w R w') \to (S \text{ is true in } w')]$

b. $[\Diamond S \text{ is true in } w] \iff \exists w' [(w R w') \land (S \text{ is true in } w')]$

This is to be read as follows: S is necessarily true in a possible world w if and only if S is true in all possible worlds w’ accessible from w (R designating the accessibility relation between possible worlds). S is possibly true in world w if and only if S is true in at least one world w’ accessible from w. There can be different types of accessibility relation, such as deontic or epistemic (Kratzer 1981, 1991). Under a deontic accessibility relation, the domain of quantification is restricted to those worlds that are compatible with the law or some other relevant set of rules. For instance, ‘I must pay my taxes’ is true in all worlds in which, given the law, I avoid punishment for failing to pay, but there may be other possible worlds in which I fail to pay without consequences. An epistemic accessibility relation restricts the domain of quantification to worlds compatible with what is known. Thus, ‘you must be Lisa’s mother’ is true in all worlds which are compatible with everything I know, but not in worlds in which for all I know you are someone else’s mother, or don’t have children at all.

The modality scopes over the proposition. Sentential negation can scope either over the modality (wide scope), or over the proposition (narrow scope). Logically, possibility and necessity behave as opposites under negation. But while logically, both $\Box \neg p = \neg \Diamond p$ and $\neg \Box p = \Diamond \neg p$ hold (Palmer 2001: 91), natural language reflects this opposition only to some extent, due to the “simple lack of one-to-one correlation between form and meaning” (Palmer 1997: 136, cf. also Palmer 1995) of items
expressing modality. Suppletion of possibility forms for necessity forms under negation is a common phenomenon. This seems to stem from the fact that under a neutral interpretation, necessity modals tend to scope above negation while possibility modals tend to scope below (cf. e.g. Bech 1951: 8), though why this is so seems to be unexplained so far. If Palmer (1997: 138) is right in assuming that there is a universal preference for wide scope of negation, this suppletion by possibility forms “would maximize the regularity since it generally negates the modality”. The opposite scope is usually only possible as a marked option, as in (6b). This is not sentential negation, as can be shown by applying one of Klima’s (1964) tests, tag formation. Note that narrow scope of negation with root possibility modals can in English only be rendered with a non-contracted not (*n’t):5

(6) a. Edwin can’t/cannot climb trees, can he? neg > mod
   ‘Edwin is not permitted to climb trees’
   b. Edwin can NOT climb trees, can’t he? mod > neg
   ‘Edwin is permitted not to climb trees’
   (after Cormack & Smith 2002: 137)

This also means that wide scope with necessity modals is a marked option. Many languages choose suppletive forms for negated (root) necessity. In the present-day Germanic languages, these are forms that do not belong to what Mortelmans et al. (2009) call the “core modals”, that is, historically preterite-present verbs6 (plus the cognates of will) with bare infinitival complements, cf. English need and its equivalents in e.g. German (brauchen), Dutch (hoeven) or Danish (behove) (Palmer 1997, van der Auwera 2001). As van der Auwera (2001: 37) remarks, these items (“[s]pecialized ‘— ¯ p’ modals”) are “by definition” negative polarity items (NPIs), as their function is to provide suppletion in negative clauses.

2. Previous accounts of the scopal interaction between negation and modality

Unlike in many other languages, the surface (PF) position of the negative marker does not say anything about its scope relative to the modal

6. Preterite-presents in Germanic are verbs whose present tense forms are what is historically the preterite of a strong verb, and which secondarily developed a new past tense paradigm using the dental suffix of the “weak” conjugation. Not all historical preterite presents have become modal verbs in Germanic (e.g., German wissen ‘know’ < *witan), and not all modal verbs in Germanic go back to preterite-presents (e.g. German wollen ‘will’ < *wiljan, which derives from an older optative).
verb in the Germanic languages. Syntactically, the negative marker associates with the modal verb, another reason for Palmer (1997) to posit wide scope of negation as unmarked. Various proposals have tried to account for the different scopal behaviour of different modals by appealing to differences in the syntactic positions in which these elements originate. Under such a proposal, some modals would originate above the locus of sentential negation, and others below. This type of proposal is instantiated by e.g. Cinque (1999), Cormack & Smith (2002), and Butler (2003).

The most general syntactic approach is the cartographic, or F(unctio-nal)Seq(quence), approach of Cinque (1999). This approach, mostly concerned with accounting for the ordering of adverbs, has little to say about the scopal interaction between different types of root modals and sentential negation, however. It both over- and under-generates: on the one hand, while Cinque proposes a fine-grained distinction between different projections accommodating higher modals — he distinguishes for instance between epistemic and two types of alethic modality (necessity and possibility) —, all root modals (dynamic and deontic) apart from volitional ones are lumped together into one single functional projection (Cinque 1999: 80). This is the consequence of the method applied to determine the relative ordering of functional heads, viz. to see whether they can co-occur, and in what order.

\[
\text{Mod}_{\text{epistemic}} (> \text{Tense} > \text{Mod}_{\text{irrealis}} >) \text{Mod}_{\text{alethic}} \text{necessity} > \text{Mod}_{\text{alethic}} \text{possibility} > \text{Mod}_{\text{volitional}} > \text{Mod}_{\text{obligation}}/\text{Mod}_{\text{ability}}/\text{permission}
\]

On the other hand, \text{NegP}, the syntactic locus of sentential negation, “can be base-generated on top of any of the adverb-related projections below \text{Mod}_{\text{epistemic}}” (Cinque 1999: 124). However, this apparent optionality fails to capture the semantic/scopal interaction of different types of modals with negation in a restrictive way, even if (8), where a non-root modal scopes below sentential negation, is analysed as alethic possibility instead of epistemic possibility.7

\[
\text{You can't be serious. neg > mod}
\]

‘On the basis of what we know/logically, it is impossible that you are serious.’

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7. It has variously been noted in the literature that natural language does not formally distinguish between alethic (logical truth) and epistemic modality (what a speaker believes to be true); cf. Palmer (2001), von Fintel (2006), Nuyts (2006) and references cited therein.
Butler (2003) proposes a more restrictive theory of the scopal interaction between negation and modality. He assumes exactly two syntactic negation positions, one corresponding to propositional negation, scoping above the subject (‘Foc’), and one corresponding to predicate negation, scoping below the subject (‘Neg’). This derives the common scope necessity > negation > possibility, which he argues holds for both root and epistemic modality. His syntactic hierarchy is as follows:

(9) epistemic necessity > (negation) > epistemic possibility > (strong) subject > root necessity > negation > root possibility > vP  

(Butler 2003: 986)

Butler assumes, following Haegeman (2000), that the high negation position is located in Rizzi’s (1997) FocP, and that the epistemic modals target Force (epistemic necessity) and Fin (epistemic possibility, because of the close cross-linguistic correlation of epistemics and finiteness). Building on proposals like Jayaseelan’s (1994, 2001) or Belletti’s (2004) of a Rizzi-style left periphery of vP, he proposes that the root modals occupy similar positions in the middle field. Butler thus proposes that the hierarchy in (9) translates into a hierarchy of functional projections, implied to be universal, as follows:

(10) \[ ForceP (nec) \] \[ FocP (neg) \] \[ FinP (poss) \] [TP subj [T [ForceP (nec) \[ FocP (neg) \] \[ FinP (poss) \] [vP ]

The exceptional scopal behaviour of need under negation is explained by negation being realised in the higher negation position, i.e., need is in the same position as all other necessity modals on their root reading. The problem with this proposal (pointed out by Iatridou & Zeijlstra 2009) is that it predicts sentential negation to scope over the subject. That this is not true can be demonstrated in clauses containing quantified subjects.

(11) Many people needn’t work.  
‘There are many people who are not obliged (for whom it is not necessary) to work’

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8. Foc(us), Force and Fin(iteness) are all functional heads within Rizzi’s (1997) split-CP layer.

9. The original example Iatridou & Zeijlstra (2009: 300) give is Many people don’t have to work. As periphrastic expressions of modality often behave more regularly than modal verbs, have to was replaced by need in (9). According to my native speaker informants (William Harwood, Rachel Nye, and Reiko Vermeulen), the scope — many > negation > modal — is the same.
Butler motivates his hierarchy of positions by a perceived cross-linguistic “tendency for necessity and possibility forms of modals not to have the same PF form” (Butler 2003: 968). His four-way split into positions for epistemic/root possibility/necessity is intended to

“[...] explain why modals cross-linguistically tend to have the same PF form for epistemic and root senses, but not for necessity and possibility – because epistemic and root modals have the same lexical semantics, whereas necessity and possibility forms are distinct lexical items, in distinct LF positions, differing semantically as to whether they instantiate universal or existential quantification.” (Butler 2003: 992)

However, it is questionable whether this supposed cross-linguistic tendency holds at all. We will see ample counter-examples from the history of Low German below. The ambiguity of *motan ‘must’ between a possibility and a necessity meaning found in Old Low German for instance (section 4.1) holds of the older Germanic languages more generally. Bech (1949) and Ehrich (2001) address the possibility/necessity ambiguity of present-day German wollen ‘will’ and sollen ‘shall’. Cormack & Smith (2002: 139) briefly refer to the difficulty of assigning English (volitional) will to their Modal₁ or Modal₂ positions (see below), but resolve to treating it as a necessity modal expressing ‘intention’, not ‘willingness’, and thus place it in Modal₁ above sentential negation. However, in the literature on the meaning of English modals (e.g., Leech 2004, Coates 1983), this is shown not to be the only meaning will has, and that the same holds for shall. Van der Auwera (2001) furthermore lists a number of modal verbs and expressions with a possibility/necessity ambiguity in other Germanic languages, (12):

(12) a. Danish
   Nu må du fortælle.
   now may/must you tell
   ‘Now you may/must tell a story.’
   (van der Auwera 2001: 28, his (9))

b. Swedish
   Lasse får köra bil.
   Lasse gets drive car
   ‘Lasse may/must drive the car’
   (van der Auwera 2001: 29, his (11))

c. German
   Wesensprobleme sind mit den Mitteln der Ontologie zu lösen.
   problems.of.being are with the means of.the ontology to solve
   ‘Problems of being are to (= can/must) be solved with the means of ontology.’
   (van der Auwera 2001: 29, his (10))
Butler’s account therefore builds on a tendency that in fact does not exist.

Cormack & Smith (2002) propose to treat the scopal behaviour of the English modals with respect to (sentential) negation and the fact that the surface position of the negator does not indicate its scope with the help of their (1997) split-sign hypothesis. According to this hypothesis, the LF-interpretable part of a functional head is merged in its LF-scope position, while its PF-interpretable part is merged where it is to be pronounced with respect to other heads. As the English modals are auxiliaries (as opposed to main verbs), they are analysed as functional heads which are optionally adjoined in their LF-scope positions with respect to other functional heads. Cormack & Smith propose that there are two scope-determined head-positions for modals in English, one above the (single) position of sentential negation (‘Pol’[NEG]) and one below.11 They call the former Modal1 and the latter Modal2, and argue that in English, necessity modals on their root reading are merged in Modal1 while possibility modals on their root reading are merged in Modal2 (can, could, may ...). Possibility modals can only occur in Modal1 on their epistemic reading (may, might). The only exception is need (without to), which is a necessity modal, but scopes below sentential negation, due to its being an NPI.

(13) C T (Modal1) Pol (Modal2) ...

Cormack & Smith (2002) argue that in language acquisition, children start from the assumption that all necessity modals belong to Modal1 and all possibility modals belong to Modal2, and that they may reanalyse a Modal1 auxiliary as Modal2 if need be, e.g. in the case of need. This is the opposite of Palmer’s reasoning that wide scope of negation (i.e. low scope of the modal) is the default, also for necessity modals. The latter may for instance account for the fact that periphrastic modals (which Cormack & Smith do not consider) such as have to scope below negation despite expressing necessity.12

10. Cormack & Smith are only concerned with the ‘core’ modals of English (and only their root interpretations), not periphrastic forms such as have to or be able to, which behave much more regularly with respect to the scope of negation.

11. In addition to Pol[NEG], Cormack & Smith also motivate the assumption of a “high” negation position above C, which they call Echo[NEG], and a low one below Modal2, which they call Adv[NEG]. These are not the positions where sentential negation is expressed, as can be shown by applying e.g. the Klima-tests (Klima 1964). Adv[NEG] for instance is the locus of not in (6b) above.

12. Periphrastic modal constructions (such as English have to) are expected to behave more regularly than the ‘core’ modal verbs, which take bare infinitival complements. There seems to be a correlation between the structure of the complement and scope transpa-
Based on Piccallo’s (1990) observation that modal auxiliaries in Catalan display a similar split with respect to the scope of negation, viz. epistemics > negation > deontics, Cormack and Smith (2002: 146) wonder “whether all languages expressing these notions (modality, AB) with modal auxiliaries have one major split, and whether the combinations epistemic+necessity and deontic+possibility always correlate with Modal₁ and Modal₂, respectively”. We will evaluate this hypothesis in relation to the historical Low German data below. The main problem with Cormack & Smith’s account, however, is that it is restricted to languages “with modal auxiliaries” without there being a clear definition of what a modal auxiliary is. The scope of negation with respect to modal verbs expressing necessity and possibility does not seem to be very different from English in languages like German or Dutch where modal verbs have certain properties in common with lexical verbs, such as the availability of non-finite forms.

The approach of Iatridou & Zeijlstra (2009) offers an alternative to the syntactic accounts just presented, and takes issue in particular with the syntactic approaches of both Cormack & Smith (2002) and Butler (2003). Iatridou & Zeijlstra propose instead that all (root) modals originate within VP, even in English, where they have traditionally been assumed to be base-generated under I. They can therefore, even if they move (necessarily so in English, due to the lack of non-finite forms, cf. also Coupé & van Kemenade 2009), reconstruct into a position below sentential negation. Iatridou & Zeijlstra thus follow in principle Palmer’s (1995, 1997, 2001) intuition that wide scope of negation should be the default. The varying scopal behaviour of root necessity modals is accounted for by assuming that some of them are NPIs (like need and its equivalents in other languages), while others are positive polarity items (PPIs) (like English must, which scopes above negation). Yet others are “neutral”, and scope below negation, accordingly. Why there are no special polarity items in the domain of root possibility modals is, however, left open, as well as an account of the scopal interaction of negation and epistemic modals.13

13. A possible answer to the former issue might be that possibility modals are automatically interpreted as epistemic on the mod > neg reading (using the negation of Butler’s example, cf. section 1.2):

(i) You may not be an ambassador to England or France.
mod > neg: ‘It is a possible assumption that you are not an ambassador to England or France’

*You are allowed not to be an ambassador to England or France’

neg > mod: ‘You are not allowed to be an ambassador to England or France’
The present paper rejects the syntactic accounts of the scopal interaction between modal verbs and sentential negation in historical Low German and argues that while Iatridou & Zeijlstra’s approach can partially account for the scopal behaviour of some of the modals, it needs to be complemented by additional assumptions for others. In particular, the behaviour of Middle Low German *scholen* ‘shall’ (and potentially also *wollen* ‘will, want’) will require a pragmatic instead of a syntactic or lexical (polarity) account.

3. Modal verbs in historical Low German

3.1. Old Low German

As originally in all older Germanic languages, the Old Low German preterite-present-based (pre-)modals – *mugan* ‘be able’, *sculan* ‘shall’, *motan* ‘be able, must’, *thurvan* ‘need, be allowed to’, *kunnan* ‘be able, know’ – have no non-finite forms yet; only the non-preterite-present verb *uuillian* ‘will, want’ marginally occurs as an infinitive or a participle, (14).

(14)  
\[ \text{Ni scal that riki god, quad he, uualdand uuillian.} \]
\[ \text{NEG shall that empire God said he ruling will.INF} \]
\[ \text{‘He said: The ruling God shall not want/desire that empire’} \]
\[ \text{(*Heliand 3095–3096*)} \]

As Coupe’ & van Kemenade (2009: 245–254) remark, however, pre-modals in older Germanic languages, if they are used at all in non-finite forms (e.g. in Gothic), “[...] invariably have non-modal meaning, e.g. wiljan ‘to wish, desire’, magan ‘have the power to’, kunnan ‘to know’, and are never complemented by a bare infinitive. [...] We conclude that Old Germanic preterite presents, when they have modal meaning and take an infinitival complement, are always finite”.

That seems to be confirmed in (14): *uuillian* is used without an infinitival complement. Diewald (1999: 298–299) argues for Old High German that kunnan, thurfan and muozan had not yet been integrated into the system of modal verbs, but are mainly used in their old lexical meaning. As all of the six pre-modals are able to take bare infinitival complements in Old Low German, expressing a modal meaning, they will be treated as modal verbs here. They have not developed epistemic uses yet.

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15. Note that e.g. *wollen* ‘will, want’ and *kennen* ‘can, be able’ can still be used in a lexical sense without bare infinitival complements in present-day German, too, but are arguably fully grammaticalised modal verbs according to Diewald’s criteria.
16. The rise of epistemic readings is commonly argued to be evidence of the grammaticalisation of modal verbs, cf. e.g. Diewald (1999) for (High) German.
The Old Low German modals have rather fuzzy meanings, with the precise meaning partly determined by the context. *Sculan* for instance seems to be able to express obligation (15a) as well as futurity (15b) and volition (15c).\(^{17}\)

\[(15)\]
\[
a. \textit{Ik gilofda thes ik gilouian ne scolda.} \\
\text{I believed what I believe NEG should} \\
\text{‘I believed what I was not supposed to believe’} \\
\textit{(Beichtspiegel 17,5–6)}
\]
\[
b. \textit{Nio the sterben ni scal lif farliosen the her gilobid} \\
\text{never he die NEG shall life lose who here believes} \\
to me \\
\text{‘He who believes in me here shall never die nor lose his life’} \\
\textit{(Heliand 4055–4056)}
\]
\[
c. \textit{Ne sculun uui im thia dad lahan quat hie} \\
\text{NEG shall we him this deed reprehend said he} \\
\text{‘We shall not reprehend him for this action, he said’} \\
\textit{(Heliand 3994)}
\]

As will be shown in Section 4.1, some modal verbs in Old Low German encompass both possibility and necessity readings, which may bear on their scopal interaction with sentential negation. There are no epistemic uses of modal verbs in the Old Low German corpus yet.\(^{18}\)

### 3.2. Middle Low German

Given the hypothesis put forth by Cormack & Smith that two syntactic (LF) positions, one above sentential negation and one below, should be available in languages with “modal auxiliaries”, the question arises whether Middle Low German had such modal auxiliaries, and whether they confirm Cormack & Smith’s account. Based on the corpus used for the present study, it might indeed be concluded that by the Middle Low German period, the old (pre-)modals had developed into a special class of modal auxiliaries. First, they still had not developed non-finite forms until ca. 1500, setting them apart from lexical verbs, and second, while

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17. The common element in case of *sculan* seems to be that someone is in control of the realisation of the event. As (15a) shows, however, this is not always the speaker, contrary to what has been argued for *shall* in present-day English by Haegeman (1981), and to what we will see below for Middle Low German.

18. They arguably had not yet grammaticalised, cf. the literature on Old High German for comparison (e.g. Diewald 1999).
there are no instances of epistemic modals in our Middle Low German
corpus, there are instances of non-root use of one modal, *mogen* ‘may’,
which is evidence of a development further away from lexical verbs.
There are, however, no epistemic uses of modal verbs in the corpus
used.19

Concerning the delayed development of non-finite forms (in the cor-
pus used), Middle Low German lags far behind its other older West
Germanic sisters (Birkmann 1987): in Middle Dutch, double modals (16)
appear between 1250 and 1300, followed by IPP (*infinitives pro partici-
pio*)-constructions after 1300 (Coupé & van Kemenade 2009). Also Mid-
dle English (13th c.) briefly experimented with non-finite forms (Light-
double modal constructions, IPP “infinitives”, present and past partici-
pies of modal verbs in the Middle High German *Prosa-Lancelot*, (18).20

(16) *dat sal al moeten bliuen jnt couent…*
that shall all must.INF stay in.the monastery
‘That will all have to stay within the monastery’

(CG 1124; 1292)

(17) *ðatt I shall cunnenn cwemenn Godd*
that I shall can.INF please God
‘That I will be able to please God’

(*Ormulum*)

(18) *Ich meyn es sol nymands mögen thun.*
I think it shall nobody may.INF do
‘I think that nobody will be able to do it’

(*LP* 76,35; Müller 2001: 255)

Moreover, Middle Low German *willen* < *uuillian*, which did have non-
finite forms in Old Low German, cf. (14), unlike thepreterite-present-
based modals, has no finite forms in the entire Middle Low German
corpus used for this study, which might point to an analogical assimila-
tion of *willen* to a possible emergent special class of modal auxiliaries.

19. The restriction to chancery documents for the present corpus of Middle Low German
may have had an influence on the attestation of epistemic forms. It is possible that they
were already developing in Middle Low German in the period under consideration, but
do not appear in the corpus used due to this restriction.
20. Examples (16) and (17) are taken from Coupé & van Kemenade (2009: 262) (their (19)
and (20), respectively). Müller (2001) argues that the rise of certain non-finite forms
of modal verbs in High German has to be dated earlier than proposed by Diewald (1999).
It may be interesting to note that the finite modal in (16)—(18) is always a cognate
of *shall*. 
After around 1500, some modal verbs, mainly *mogen* ‘may’, are occasionally attested in the IPP-construction in the Middle Low German corpus used for the present study, though not as *to*-infinitives.

(19) *Sollick hebbe ick juwer werde im besten nicht mogen* *bergen.*

such have I your honour in the best NEG may IPP recover

‘I have not been able to recover this for you with my best intentions.’ (Scharnebeck 06/01/1529)

In this respect the Middle Low German data from the present corpus pattern with the developments Postma & Bennis (2006) describe for Middle Drentish, a Low Saxon dialect spoken in the county of Drenthe in the east of the Netherlands. They argue in fact that in the time segment 1400–1450, Middle Drentish had a distinct class of grammaticalised auxiliaries lacking finite forms. Conversely, in a second time segment around 1490 (1488–1492), non-finite forms such as *te ‘to’*-infinitives are attested:

(20) *... ende begeren daer by te moegen blyven ...*

and ask there at to may-INF stay

‘... and ask to be allowed to stay there’

(Postma & Bennis 2006: 14, their (16))

Postma & Bennis propose that this change is the consequence of language contact, and that Saxon Drentish lost its previously established specialised class of auxiliaries under the influence of Low Franconian Hollandish. Concerning the socio-linguistic background, the supreme court of Drenthe, whose proceedings Postma & Bennis’ corpus is based on, was for instance at that time appointed by the bishop of Utrecht (Gertjan Postma, p.c.). Also Coupé & van Kemenade (2009: 262–263) argue for the likelihood of such a spread from the south-west to the north-east of the Low Countries.

The corpus used for the present study suggests that a rather similar situation obtains in Middle Low German. Around 1525, (Early New) High German begins to be used as the written language of official documents (the genre used for this corpus), and after 1575, hardly any of the

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21. Postma & Bennis aggregate the results of two sub-periods, 1399–1405 and 1444–1447.
texts in the corpus are written in Low German anymore. It seems reasonable to assume that this High German influence is behind the rise of non-finite forms of modal verbs in the corpus around the same time. High German had started earlier to develop non-finite forms of modal verbs and to thus regularise the verbal system (Birkmann 1987; Müller 2001). However, it is not clear whether a case can be made for an initial development of a specialised class of modal auxiliaries (in the sense relevant for Cormack & Smith’s analysis) in Middle Low German, or whether this is simply delayed regularisation of the modal paradigm. After all, modals formed a special class of verbs from the beginning (Warner 1990).

Turning now to the rise of non-root uses of modal verbs, forms of mogen ‘may’ are found to occur in a certain type of conditionals, (21). They are mostly asyndetic verb-first conditionals, (21a), but syndetic constructions are attested too (21b). Mostly they are in the past subjunctive (21a—b), though not all, (21c).

(21)  

a. mochte uns de vorbeydinghe dan oick nicht helpen ...
   might us the pre.tribunal then also NEG help
   ‘Should the pre-tribunal not help us then, either, …’
   (Steinfurt 31/07/1492)

b. Und offt dyt allt nycht helpen mochte ...
   and if this all NEG help might ...
   ‘And if all this should not help …’ (Steinfurt 25/01/1519)

c. Mach ohme dar neyn recht schein, so mach …
   may him there no justice happen so may
   ‘Should no justice happen to him there, so may…’
   (Braunschweig 22/08/1532)

Similar constructions are found in other West-Germanic languages. The equivalent construction in High German early on used the necessity modal sollen ‘shall’ in past subjunctive (Konditional II). According to Fritz (1997b: 291), the conditional meaning (‘in case that’) arises from a combination of the futurity of sollen and the uncertainty of the past subjunctive.22

22. “Wir finden also durchweg den charakteristischen Zukunftsbezug von sollen, wobei der Konjunktiv das Element der Unsicherheit signalisiert” [thus we consistently find the characteristic future reference of sollen, with the subjunctive indicating the element of uncertainty] (Fritz 1997b: 291).
Early New High German

Da aber solches nicht geschehen sollte/würden Ihre Mayst. (if however such NEG happen should/ would His Majesty)

verursacht/diesen Landtag aufzuheben (be.caused this estates.assembly dissolve.INF)

‘Should this not happen, however, His Majesty would have to dissolve this estates assembly.’ (Fritz 1997b: 291, his (40))

Present-day Dutch has in fact a very similar construction to Middle Low German using the past tense of mogen. In many Flemish varieties the modal in this construction is moest ‘must, had to’ (Haegeman 2010).

(23) a. Dutch

Mocht u een gesprek wensen, bel dan maar. (may.PAST.3SG you a talk wish call then just)

‘Should you wish to talk, don’t hesitate to call.’

b. Flemish

Moest hij dat weten, dan zou hij boos zijn. (must.PAST.3SG he that know then will.PAST.3SG he angry be)

‘Were he to know that, he would be angry.’

(Haegeman 2010: 610, her (37b))

While it is clearly a non-root use of the modal, one may wonder whether Middle Low German mogen (still) expresses modality in this context at all (i.e., something like ‘it is possible that p’). For present-day (dialectal) Dutch mocht and moest for instance, Nuyts et al. (2005) suggest that the modal meaning has been lost, the modal having become a purely formal marker of conditional clauses, whose meaning is something like ‘if it is/were the case that’.23 The question is how this construction developed historically. Originally, we may assume that it corresponded to something like ‘if it (is/)were possible for <subject> to <VP>’, where the subjunctive form and the position of the verb encode that it is a conditional clause and that the truth of the protasis is not certain. In section 4.2.2, the question will be addressed whether this is a plausible interpretation of the mogen-conditionals in the present corpus.

23. “In this type of usage one may even wonder whether the modal still has a ‘meaning’ at all, and is not rather tending towards being a purely formal marker of a grammatical ‘type’ (in this case, a conditional clause)” (Nuyts et al. 2005: 17).
4. The scope of negation

4.1. Old Low German

The Old Low German modals differ sharply in their frequency in the corpus, and in their frequency in negative clauses. Table 1 illustrates this for the Heliand as the largest subcorpus:\textsuperscript{24,25}

<table>
<thead>
<tr>
<th>modal</th>
<th># in negative clauses</th>
<th># in all clauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>*mugan</td>
<td>101 (43.9%)</td>
<td>230</td>
</tr>
<tr>
<td>uuillian</td>
<td>75 (34.2%)</td>
<td>219</td>
</tr>
<tr>
<td>*sculan</td>
<td>25 (6.3%)</td>
<td>395</td>
</tr>
<tr>
<td>*motan</td>
<td>16 (12.8%)</td>
<td>125</td>
</tr>
<tr>
<td>*thurvan</td>
<td>17 (89.5%)</td>
<td>19</td>
</tr>
<tr>
<td>*kunnan</td>
<td>3 (60%)</td>
<td>5</td>
</tr>
</tbody>
</table>

Of these six modals in Old Low German, only one seems to consistently scope above negation, and three seem to consistently scope below negation. One, *motan, is polysemous and has both a possibility and a necessity reading.\textsuperscript{26} Also uuillian has several readings, though more closely related ones, viz. a stronger, more necessity-like one ‘want, desire, intend’ and a weaker, more possibility-like one ‘be willing’. Generally, only necessity modals, or necessity readings of modals with more than one meaning or reading, seem to be able to outscopecsentential negation.

\textsuperscript{24} The Genesis and the minor texts arguably consist of too little text to give reliable figures. In negative clauses, the Genesis has five occurrences of uuillian with an infinitival complement, three occurrences of *mugan, and two each of *sculan and *motan. In the minor texts, there are two occurrences of *mugan in a negative clause and one of *sculan.

\textsuperscript{25} We will only consider the six “core” modals here, which later survive into Middle Low German. A further preterite-present verb with a bare infinitival complement attested in the corpus is *thuran ‘dare’. It is very rare, and all of its three attestations are found within the scope of negation (one in the Genesis and two in the Heliand), pointing at it probably being an NPI. Presumably, the development of *thuran was parallel to its High German cognate turren, which died out and had its meaning absorbed by dürfen (Fritz 1997a).

\textsuperscript{26} Solo (1977: 215 f.), however, contests any necessity readings of Old Low German *motan, arguing they can all be construed as ‘be permitted’.
Table 2: Scopal properties of modals in negative clauses (Old Low German)

<table>
<thead>
<tr>
<th>mod &gt; neg</th>
<th>Necessity</th>
<th>*sculan ‘shall’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>uuillian ‘wish, want, desire’</td>
<td>(*motan ‘must’)</td>
</tr>
<tr>
<td>neg &gt; mod</td>
<td>Necessity</td>
<td>*thurvan ‘need, be obliged’</td>
</tr>
<tr>
<td></td>
<td>Possibility</td>
<td>*kunnan ‘be able, know’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*mugan ‘be able (‘be allowed)’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>uuillian ‘be willing’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*motan ‘be able’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*thurvan ‘be allowed to’</td>
</tr>
</tbody>
</table>

As in Old High German and Old English, *motan mostly seems to mean ‘have the opportunity, be able’, (24a), but may also (already) mean ‘must’, (24b). On its necessity reading (24b), *motan scopes above negation, on its possibility reading (24a), it scopes below.

(24) a. *Ef gi sie amerriad quad he that her ni motin
if you them disturb said he that here NEG can
manno barn uualdandes craft uuordun diurien
man.GEN children ruler.GEN force words.DAT praise
‘If you disturb them, he said, such that the children of men are unable here to praise the force of the ruler with words’
(Heliand 3728–3729)

27. Cf. Fritz (1997a), Lühr (1997) and references cited in these for Old High German and Solo (1977) for Old English.

28. Solo (1977: 216) argues that the necessity reading arises through the negation and that (24b) should be paraphrased as ‘that we are not permitted to yield tribute to the house of Caesar’. Of course, as noted above, □¬ is logically equivalent to ¬□. Note, however, that in order to render ‘not permitted’ by means of a historical “core” modal, must has to be used. Also, the original meaning of *motan in several West Germanic languages was not ‘permission (by a person or law)’, but ‘permission (by circumstances), be able’, cf. e.g. Fritz (1997a) and Lühr (1997). Solo’s argument is therefore not conclusive. On the other hand, *motan does seem to only have the possibility reading in non-negative clauses (cf. e.g. (i)), pointing at a possible interaction with NEG-raising (or rather -lowering in this case).

(i) than uuerdad iu andon after thiu himilportun anthildan that gi
then will you open behind you heaven’s.gates disclose that you
an that helage light an that godes riki gangan motun.
into the holy light into the god.GEN empire go be.permitted/able
‘Then you will open the Pearly Gates behind you so that you are permitted/able to enter the holy light, God’s empire.’
(Heliand 1798–1800)
b.  that uui ni motun te themu hobe kesures tinsi
    that we NEG must to the.DAT court.DAT Caesar.gen tribute
    yield
    ‘that we must not yield tribute to the court of Caesar’
    (Heliand 5188–5189)

The necessity-possibility ambiguity of uuillian ‘will’ is illustrated in the
following examples. In (25a), the modal expresses a deliberate intention,
and arguably scopes above sentential negation, while in (25b), it expres-
ses weak volition, or willingness,29 and arguably scopes below senten-
tial negation.

(25) a.  ne uuilliad thes farlatan uuiht
    NEG will of.it omit thing
    ‘They do not want to omit a single thing.’
    (= ‘They intend not to omit a single thing’)  
    (Heliand 1353)

b.  ef sie is ne uuillead an iro hugi thenkean
    if they it NEG will in their mind think
    ‘If they are not willing to think about it in their minds …’
    (Heliand 1730)

In accordance with (5), the truth conditions between these two meanings
differ. Using Kratzer’s (1981, 1991) terminology, in a sentence like (25a),
‘X will (intends to) omit Y’, the modalised proposition is only true in
world w if in all w’ accessible from w specifying the subject’s wishes,
w’eq (q = ‘X omits Y’). Negation scopes below the modal: will (¬(X
omits Y)). Under a necessity reading on the other hand, that is, ‘X will
(is willing to) think about Y’ as in (25b), the proposition is true in world
w if in at least one world w’ accessible from w specifying the subject’s
wishes, we’q (q = ‘X thinks about Y’). Negation then takes scope over
this: ¬(will(X thinks about Y)).30

29. This possibility meaning corresponds to Leech’s (2004: 87) “willingness” meaning of
    English will, as opposed to what he calls the “intention” or “strong volition” meaning
    (cf. also Palmer 2001).
30. Cf. also Coates (1983: 176) for English will expressing “willingness” and its interaction
    with negation as well as Bech (1949: 5–10) and Ehrich (2001: 165–166) for uuillian’s
    present-day German cognate wollen, which shows the same two readings. As a reviewer
    remarks, these two readings may be related only by NEG-raising. One may wonder,
    however, whether inversely, NEG-raising is not parasitic on the existence of the two rea-
    dings.
Clearly, Butler’s assumed tendency against formal syncretism between possibility and necessity modals is disconfirmed for Old Low German by *motan and uuillian, which are attested with both possibility and necessity meanings, which correspond to different scopes of sentential negation.

The verb *thurvan ‘may, need’, also polysemous with a possibility and a necessity reading, shows a strong propensity to occur in the scope of negation in Old Low German on both its possibility (‘may’, (26)) as well as its necessity readings (‘need’): only two instances out of nineteen are not found in negative clauses, (27).

(26) \[Ni \thurbun gi thene leriant lahan\]
\[NEG may you the teacher reprimand\]
‘You may not (= are not allowed to) reprimand the teacher’
\[(Helian 3933)\]

(27) a. \[uundrodun alla bihuui he thar so longo [...] fraon sinun\]
\[wondered all why he there so long [...] lord his\]
\[thionon thorfti\]
\[serve needed\]
‘Everyone wondered why he should serve his lord there for so long’
\[(Helian 175−178)\]
b. \[ni it mi god ni gibod, that is huerigin hier huodian\]
\[nor it me God NEG ordered that his anywhere here protect\]
\[thorofti\]
\[need\]
‘Nor did God order me that I should protect him at all’
\[(Genesis 39−40)\]

Note that the examples in (27) are in fact weak NPI contexts. (27a) is an indirect question, (27b) is the complement of a negative clause, i.e., indirect negation. Old Low German *thurvan is therefore to be considered an NPI, albeit a weak one. However, unlike the suppletive or “specialised” forms used in many present-day Germanic languages, which according to van der Auwera (2001) are NPIs “by definition”, it is a “core modal” (Mortelmans et al. 2009).

*Sculan on the other hand is more than thirteen times as frequent in non-negative clauses than in negative clauses, and in the latter, it scopes over negation, recommending it for an analysis as a positive polarity item (PPI) following Iatridou & Zeijlstra (2009).
4.2. Middle Low German

Also the Middle Low German modals differ considerably in their relative frequency in negative clauses. Table 3 illustrates this for the different scribal dialects covered by the Middle Low German corpus:

Table 3: Relative frequency of modals in negative clauses (Middle Low German)

<table>
<thead>
<tr>
<th>modal</th>
<th>LF</th>
<th>WP</th>
<th>EP</th>
<th>NLS</th>
<th>HC</th>
</tr>
</thead>
<tbody>
<tr>
<td>mogen ('be able')</td>
<td>2(0.5%)</td>
<td>5(1.8%)</td>
<td>8(0.9%)</td>
<td>12(1.1%)</td>
<td>4(0.8%)</td>
</tr>
<tr>
<td>mogen ('be allowed to')</td>
<td>25(6.3%)</td>
<td>9(3.2%)</td>
<td>48(5.3%)</td>
<td>16(1.4%)</td>
<td>5(1%)</td>
</tr>
<tr>
<td>willen ('will, be willing')</td>
<td>13(3.3%)</td>
<td>25(9%)</td>
<td>73(8.1%)</td>
<td>123(10.8%)</td>
<td>51(10.2%)</td>
</tr>
<tr>
<td>scholen ('shall')</td>
<td>102(25.6%)</td>
<td>69(24.8%)</td>
<td>358(39.6%)</td>
<td>334(29.4%)</td>
<td>177(35.3%)</td>
</tr>
<tr>
<td>moten ('must')</td>
<td>9(2.3%)</td>
<td>—</td>
<td>—</td>
<td>1(0.09%)</td>
<td>2(0.4%)</td>
</tr>
<tr>
<td>dorven ('need')</td>
<td>1(0.3%)</td>
<td>—</td>
<td>18(2%)</td>
<td>18(1.6%)</td>
<td>3(0.6%)</td>
</tr>
<tr>
<td>dorven ('may, be allowed to')</td>
<td>17(4.3%)</td>
<td>1(0.4%)</td>
<td>—</td>
<td>3(0.6%)</td>
<td>—</td>
</tr>
<tr>
<td>kunnen ('can, be able')</td>
<td>22(5.5%)</td>
<td>19(6.8%)</td>
<td>44(4.9%)</td>
<td>66(5.8%)</td>
<td>20(4%)</td>
</tr>
<tr>
<td>total neg. clauses</td>
<td>39</td>
<td>278</td>
<td>905</td>
<td>1136</td>
<td>502</td>
</tr>
</tbody>
</table>

31. As the database used for this study unfortunately consists only of the negative clauses excerpted from the large amount of material, no total counts for modal verbs (in both affirmative and negative clauses) can be given here, only the percentage of negative clauses with modal verbs out of all negative clauses. The construction of a full digital corpus of the Middle Low German chancery texts used for the present study is a future project currently in preparation. The figures presented in Table 3 should nevertheless be able to show certain dialectal differences in the use of individual modal verbs in negative clauses.

32. From west to east: LF = Low Franconian (Kleve), WP = Westphalian (Börstel, Steinfurt), EP = Eastphalian (Barsinghausen, Braunschweig, Mariengarten), NLS = North Low Saxon (Oldenburg, Scharnebeck, Uelzen) and HC = East Elbian Hansa cities (Lübeck, Stralsund). The latter two were considered separately from North Low Saxon due to their different colonisation history and special sociolinguistic status. While Oldenburg, Scharnebeck, and Uelzen belong to the Saxon Altland (i.e., the area where already Old Saxon/Old Low German was spoken), the formerly Slavic East Elbian areas were only colonised in the 12th century, by settlers originating from different places in the Saxon Altland (Peters 1998). This led to a certain amount of dialect mixture and dialect levelling, in particular in the Hansa cities (Peters 2000a).
Two basic meanings of *mogen* ‘may’ are distinguished, ‘be able’ and ‘be allowed to’, as well as two basic meanings of *dorven*, ‘need’ and ‘may, be allowed to’. There is a certain amount of variation in the corpus regarding the frequency of use of a given modal in different scribal dialects, which mainly amounts to setting the western dialects (Low Franconian and Westphalian) apart from the (more ‘Saxon’, Peters 1998: 115) rest. The necessity meaning (‘need’) of *dorven* for instance is a more north-eastern phenomenon, while its possibility meaning (‘be allowed’) is virtually restricted to Low Franconian. Similarly, *moten* (which is in general extremely rare) seems to be used more frequently in Low Franconian, while the opposite is true for *willen*. *Mogen* in the meaning ‘be able’ and *kunnen* on the other hand are hardly subject to dialectal variation. *Mogen* in the meaning ‘be allowed’ is less frequently used in the north-eastern places; in the remainder of the Middle Low German area it ranges around 5.2% of all negative clauses.

The choice of chancery texts certainly influences the results of the present study as statutory prose can be expected to contain more modal constructions, and perhaps with specialised uses potentially absent in other text genres.
Diachronically, there are also a number of shifts in the inventory of modal verbs in Middle Low German. In Table 4, the period of consideration (1325–1575) has been divided into five sub-periods of 50 years each. Moten for instance, which is very rare throughout, disappears entirely from the Middle Low German of the texts considered in the last 100 years of the period studied, and similar things may be said of dorven with the meaning ‘may, be allowed’, which we found to be restricted to the Low Franconian scribal dialect of Kleve. Mogen with the meaning ‘may, be allowed to’ seems to significantly increase in frequency in the last 50 years of the period studied. On the other hand, the most frequent modal verb in the corpus, scholen ‘shall’, decreases noticeably in its frequency in negative clauses during the last 150 years of that period. Unfortunately, without the total number of modal verbs in both negative and affirmative clauses (cf. note 31), it is impossible to determine the significance of this finding.

Concerning their interaction with sentential negation, the Middle Low German modals offer the following picture:

| Table 5: Scopal properties of modals in negative clauses (Middle Low German) |
|---------------------------------|-----------------|-----------------|
| mod > neg                        | necessity       | scholen ‘shall (be required to)’ |
|                                  |                 | (moten ‘must’)   |
|                                  | ?               | mogen ‘may?’ in conditionals |
| neg > mod                        | necessity       | dorven ‘need’    |
|                                  | possibility     | wissen ‘be able’ |
|                                  |                 | mogen ‘be allowed, be able’ |
|                                  |                 | willen ‘wish, want, be willing to’ |
|                                  |                 | scholen ‘shall (intend to)’ |
|                                  |                 | dorven ‘may, be allowed to’ |

It will be noted that willen ‘will’ is no longer listed among the necessity modals scoping over negation, this may be an artefact of the corpus and will be clarified in Section 4.2.2, as will be the “double” listing of scholen ‘shall’ under necessity (above negation) and possibility (below negation). Furthermore, moten ‘must’ has been placed in brackets as it is extremely infrequent in Middle Low German, as seen in Tables 3 and 4.

Perhaps due to the nature of the corpus, perhaps due to their delayed grammaticalisation, there are no epistemic modals attested in the Middle

33. See footnote 32 on the provenance of the percentages: what is given here is the number of negative clauses with modal verbs compared to all negative clauses, not to all clauses containing the relevant modal verb (affirmative or negative).
34. See also note 19 above on the possible influence of the choice of text genre.
Low German material used for this study. The only non-root use of a modal is *mogen* in conditionals, as alluded to in Section 3.2 above. It scopes above negation, as can be seen in Table 5, but it was not attempted to determine its modal meaning, as it is doubtful whether it still has any, as discussed above.

4.2.1. *Necessity modals.* As in Old Low German, there are fewer necessity root modals in Middle Low German than possibility root modals. One of them is *moten*, which by now only has the necessity reading ‘must’. *Moten* is, as seen above, very rare in negative clauses in the Middle Low German texts used for the present study: There are only three occurrences in the corpus, one each in the charters of Oldenburg, Lübeck and Stralsund (28a). An additional nine occurrences are found in the corpus from Low Franconian Kleve (28b), pointing at a feature distinguishing Saxon and Low Franconian dialects, despite the low overall frequency of this modal.\(^{35}\)

(28) a. *vnde dar monste numment vn, he ne gheue V mark vp dat*  
    and there must no one in he NE give five mark up the minste  
    ‘And no one may enter/ join it unless he give at least five marks.’  
    (Stralsund 1392)

b. *ind sii en moit niet doen sonder oeren voirmonder*  
    and she NE must nothing do without her warden  
    ‘And she must not do anything without her warden’  
    (Kleve 1430)

Perhaps due to the nature of the texts used (statutory prose in a wider sense), obligation is much rather expressed by *scholen* ‘shall’ in the present corpus, as it has a component of ‘speaker’s control’ over the proposition,\(^{36}\) which *moten* lacks. As seen in Table 3, *scholen* is the most frequently used necessity modal in negative clauses in the Middle Low German corpus used. However, in this corpus, it shows a semantic split along the person dimension; first person vs. non-first (second and third), which has consequences for the scope of negation. This will be discussed

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35. The pre-finite former negation particle *en/me* < OLG *ni* is glossed as NE here instead of NEG (as is more common) because it is arguably no longer involved in the expression of negation anymore in MLG, certainly in the exceptive clause in (28a), cf. Breitbarth (2009).

36. Similar to the one described by Haegeman (1981) for English *shall* in the same context, statutory prose.
in more detail in Subsection 4.2.3. On its necessity reading, however, it scopes above negation, (29).

(29) de en scholde nummant behindern
the NE should no one obstruct ‘who must/is required not obstruct anyone’ (Börstel 1500)

The necessity modal dorven, where it has the meaning ‘need’, is a (strong) NPI in the present corpus, and thus scopes below negation, (30). The diachronic change of *thurvan > dorven by which it became more restrictive in its distribution is entirely expected under an acquisitional view of language change (a.o. Lightfoot 1991, 1999). NPIs have a general tendency to become more restricted due to the fact that they are on the whole acquired first in the more restrictive contexts and then subject to conservative widening.37 As mentioned in connection to Old Low German *thurvan, dorven is not suppletive, unlike English need and its equivalents in many modern Germanic languages (cf. van der Auwera 2001: 37 on ‘special’ ‘—□p’ verbs), but historically a “core” modal verb, that is, a preterite-present taking a bare infinitival complement (Mortelmans et al. 2009). Additionally, mainly in the Low Franconian dialect of Kleve, dorven is used with the possibility meaning ‘may, be allowed’ in negative clauses, and will therefore be addressed in the next subsection.

(30) also dat se nene umbequemicheit ofte nod liden
thus that they no inconvenience or penury suffer dorven
need/*may ‘such that they don’t need to suffer any inconvenience or penury’ (Scharnebeck 21/09/1468)

4.2.2. Possibility modals. Again as in Old Low German, possibility modals in Middle Low German generally scope below sentential negation. In the corpus used for this study, this concerns kunnen ‘be able’, (31), mogen ‘be allowed, be able’, (32), and, as referred to in the previous subsection, dorven with the meaning ‘may, be allowed to’, (33).

(31) dar en=kunde wi se night tyeghen vordinghen
there NE=could we them NEG against defend ‘We could not (= were not able to) defend them against that.’ (Oldenburg 18/03/1347)

37. Cf. e.g. van der Wal (1996) and van der Wouden (1996, 2001) on the acquisition of Dutch hoeven ‘need’, which is a typical —□ modal NPI increasingly becoming restricted to “stronger” or “more negative” NPI contexts.
(32) _vortmere moge wij nymmanneichten [...] de under uns wonet_ further may we no.one judge [...] who under us lives

‘Furthermore, we may not (= are not allowed to) judge anyone who lives among us.’ (Steinfurt 08/01/1415)

(33) _Den erven en darff men niet antworden om yegeliken_ the heirs NE may/*need one NEG answer for any

saken business

‘One is not allowed to answer to the heirs concerning any business.’ (Kleve 1430)

Arguably as a consequence of the nature of the corpus, i.e. contracts and legal texts, _willen_ ‘will, want’ is only attested in a possibility reading in the corpus used. What is expressed in (34) is not the (strong) intention of the speaker, but what he agrees to do or is prepared or willing to do under the conditions of the contract in question.

(34) _Dartegen wy [...] neynes behelpes geneten wyllen._ against.which we [...] no.GEN assistance.GEN enjoy want

‘against which we do not intend to appeal to legal assistance’ (# ‘we intend/are determined not to appeal ...’) (Lübeck 1528)

That is, _willen_ takes scope below sentential negation just as the other possibility modals in this Middle Low German corpus, given the different truth conditions for ‘strong volition’ vs. ‘willingness’ described for Old Low German _uwillian_ in section 4.1 above.

Among the syntactic accounts discussed in section 2, Cormack & Smith’s (2002) and Butler’s (2003) would successfully localise these modals in the structural slot below sentential negation, without however explaining why. According to Cormack & Smith, children already start language acquisition with the assumption that (in English at least) root possibility modals go into the lower position, that is, the placement of root possibility modals is not even acquired. As indicated above, Butler’s syntactic hierarchy is motivated by a perceived cross-linguistic tendency of epistemic and root modals to have the same PF form, but of possibility and necessity modals to have different PF forms, which as we have already seen does not hold. Cinque’s (1999) account overgenerates, as it predicts (p. 124) that NegP can in principle also be generated below root possibility modals, which is not attested.
Let us now turn to the scope of negation in non-factual conditionals with forms of *mogen*, cf. (21) above. The question is whether this is a case of a possibility modal scoping over sentential negation (\(\Diamond \neg p\)), which it would be if its meaning were (still) ‘if it is/were possible ...’. If it was still a modal, one could try to accommodate it in one of the approaches discussed in section 2. Wide scope of a possibility modal points at a high position under a syntactic approach. Epistemic possibility modals for instance are able to scope above negation, cf. *John may not be at home*. Being targeted at root modals only, Iatridou & Zeijlstra’s (2009) approach would have nothing to say about the scope of negation in case of non-root *mogen* in conditionals, were it still a modal verb. This modal cannot reconstruct into a VP-internal position below negation.

However, as already alluded to in Section 3.2 above, it is possible in the light of similar arguments for the cognate (dialectal) Dutch cases that *mogen* had already lost its modal meaning in this construction and turned into a pure marker of non-factual conditionals, along the lines proposed by Nuyts et al. (2005) for the cognate construction in Dutch.\(^{38}\) Indeed, for all of the (five) relevant clauses from our Middle Low German corpus, a transcription ‘if it is/were the case ...’ seems much more plausible than ‘if it is/were possible ...’. Its historical development is plausibly one from ‘if it is (not) possible that ...’ with wide scope of negation via an ‘epistemic’ stage ‘if it is possibly the case that (not) ...’ with narrow scope of negation to a simple marker of nonfactual conditionals, ‘if it is the case that (not)’.\(^{39}\)

Haegeman (2010) provides empirical evidence for the fact that (Southern) Dutch *moest* and *mocht* do not pattern with root modals, but rather with high modals like epistemics, and argues that (West) Flemish *moest* is syntactically located in Mood\(_{\text{irrealis}}\) in Cinque’s (1999) hierarchy of functional projections. This would mean, according to Cinque’s assumption that NegP “can be base-generated on top of any of the adverb-related projections below Mod\(_{\text{epistemic}}\)” (Cinque 1999: 124), that negation can in principle scope above *mocht/moest* in nonfactual conditionals in (dialectal) Dutch, as Mood\(_{\text{irrealis}}\) is below Mod\(_{\text{epistemic}}\) in Cinque’s system.

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38. Of course, it might still be the realisation of Haegeman’s/Cinque’s Mood\(_{\text{IRREALIS}}\) head under this view.

39. If Haegeman’s (2010) analysis of *mocht/moest* in nonfactual conditionals in (dialectal) Dutch as occupying Cinque’s Mood\(_{\text{irrealis}}\) (cf. following paragraph) extends to the equivalent construction in Middle Low German, and assuming Roberts & Roussou’s (2003) view on grammaticalisation as upwards reanalysis involving loss of earlier movement, Cinque’s FSeq-approach becomes a little more interesting again. The following grammaticalisation path suggests itself under such a view:

(i) Mod\(_{\text{ability/permission}}\) → Mod\(_{\text{alethic}}\) possibility → Mood\(_{\text{irrealis}}\)

I will leave this issue to future research.
Whether or not Haegeman’s analysis extends to the use of *mogen* in nonfactual conditionals in Middle Low German, however, the modal does not seem to be able to scope below negation in either case. Haegeman explicitly states that negation scopes below *mocht/moest*, which is witnessed by the unavailability of the preverbal particle *en*, which in this context is treated as a scope marker for sentential negation (Haegeman 2010: 614). With respect to non-factual conditionals with *mogen* in Middle Low German, wide scope of negation is just as unavailable. The translation of example (21a), for instance, could alternatively be transcribed as ‘if it were the case that the pre-tribunal did not help us ...’ but not as *‘if it were not the case that the pre-tribunal helps us ...’.*

The next subsection will turn to Middle Low German *scholen* ‘shall’, which seems to behave ambivalently with respect to the scope of negation.

4.2.3. Split: *scholen*. As indicated above (section 4.2.1), *scholen* ‘shall’ exhibits a semantic split along the person dimension in Middle Low German. While second and third person forms have necessity-like reading scoping above negation, first person forms appear to have a possibility-like reading scoping below negation.

A possibility-necessity ambiguity has also been observed for the present-day (High) German cognate of *scholen*, *sollen* (Ehrich 2001). According to Ehrich, this is a *NEG*-raising phenomenon due to the logical equivalence of wide and narrow scope of negation (given that $\neg\square \neg p \equiv \Diamond p$):

(35) a. *Du SOLLST nicht den Rasen mähen.* Ich habe es dir schon hundert Mal verboten. you shall NEG the lawn mow I have it you already hundred times forbidden

*[\square \neg p]*

‘You should/must not mow the lawn, I’ve told you a hundred times already.’

b. *Du sollst nicht den Rasen mähen.* Ich kann es doch selbst you shall NEG the lawn mow I can it PART myself do

*[\neg(\neg\square \neg p) \equiv \neg\Diamond p \equiv \square \neg p]*

‘You don’t have to mow the lawn, I can do that myself’

(Ehrich 2001: 166, her (52))

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40. Cf. also Bech (1949) and Ehrich (2001) on a similar semantic split in *wollen*’s present-day German cognate *wollen.*
However, this is not the ambiguity found with Middle Low German *scholen* in the corpus used. The ambiguity Ehrich describes is available in all contexts. The necessity reading of *scholen* on the other hand is almost entirely restricted to non-first person forms (singular or plural), while first person forms (whether singular or plural) give rise to the possibility reading. What (36) expresses is therefore that the subject is required (or rather, *ordered* by the speaker/author, or someone the speaker/author acts on behalf of) not to sell or let the commodity in question.

(36) \[ \text{Ok en=sculde he dat guth nynen manne vorkopen also NE=should he the commodity NO.DAT man.DAT sell noch vorhuren nor let} \]
\[ \text{‘Further, he should/shall not sell nor let the commodity to anyone’} \]
\[ (= \text{‘he is required not to sell the commodity to anyone’}) \]
\[ \text{(Oldenburg 1350)} \]

First person forms of *scholen* on the other hand are arguably instances of the possibility variant, taking scope below sentential negation. The interpretation of (37) is not that ‘I and my heirs’ are *required* to hold no tribunals, but that they do not intend (or *agree* not) to hold any tribunals, similar to the interpretation of *willen* in (34).

(37) \[ \text{unde ik unde mine erven scholen in den dorppen neen gericht and I and my heirs shall in the villages no tribunals hebben edder holden noch nenen denst have or hold nor no service} \]
\[ \text{‘And neither I nor my heirs shall (intend to) have or hold tribunals nor any service in the villages.’} \]
\[ \text{(Lübeck, 29/05/1465)} \]

Therefore, in the corpus this study is based on, non-first person forms of *scholen* express orders or requirements, that is, the speaker/author orders the subject to act in a certain way and assumes control over the realisation of the required action (Haegeman 1981), see (36). This is parallel to Leech’s (2004 [1971]: 89) ‘obligation’ meaning of English *shall*. First person forms of *scholen* on the other hand express ‘weak volition’ (‘willingness’; Leech 2004 [1971]) on the side of the subject, and therefore pattern with possibility *willen*, cf. (34).

Further possible support for the argument that first-person *scholen*, just as *willen* (in the corpus used), expresses a weak volition (‘willing-
meaning scoping below sentential negation comes from the fact that they are often used in coordination in the contracts in the corpus:

(38) \textit{des jares schole unde wylle wy deshalyen neen gheld}  
\textit{this year.gen shall and will we for:his no money uthgeven}  
\textit{spend}  
\textit{‘This year, we will and shall not spend money on this’}  
\textit{(= ‘we pledge not to spend money on this’,}  
\textit{# ‘we are required and intend not to spend money on this’)}  
\textit{(Lübeck 18/12/1490)}

This appears to be a formula in which the use of a coordination of two quasi-homonymous modals leads to a reinforced expression of willingness.

Clearly, the availability of such a polysemous modal falsifies Butler’s (2003) assumed tendency once more. Besides forming a problem for the syntactic approaches (see section 2), which would have to place part of scholen’s paradigm in a position above sentential negation and part below, it also forms a challenge to Iatridou & Zeijlstra’s (2009) proposal, as it seems improbable that only part of a modal verb’s paradigm is a positive polarity item while another part is not. What none of the accounts presented before can account for either is how the relation between the two meanings of scholen is to be (historically) derived.

It was indicated above that Old Low German *sculan could be argued to be a PPI under Iatridou & Zeijlstra’s approach. Provided that there is any continuity between Old and Middle Low German,\textsuperscript{41} this is to be taken as the input to the Middle Low German situation. What sets scholen apart from e.g. moten is its “speaker’s control” meaning component mentioned in section 4.2.1. Scholen’s possibility/necessity split is arguably

\textsuperscript{41} As one of the anonymous reviewers points out, this is not self-evident given the large temporal gap in textual transmission between the 11\textsuperscript{th} and the 13\textsuperscript{th} centuries. It is hard to tell how this affects the developments described in the present paper. There are certainly differences between Old and Middle Low German concerning the frequency of individual modal verbs. These frequency differences may however be attributed to the choice of text type for the corpus used for the present study: scholen, willen and kunnen are the most frequent modals (in this order) in the Middle Low German chancery texts used (contracts, legal texts and the like), while mogen is now only in fourth place, taking both its meanings together. On the other hand, the scope relations between individual modal verbs and negation remain virtually unchanged from Old to Middle Low German. The only exceptions are the meaning shift of *motan ‘have the opportunity/be permitted/able’ to moten ‘must’, which has happened in all West Germanic languages, and the \textemdash arguably text-type-related \textemdash non-attestation of necessity willen in the Middle Low German chancery texts.
due to a pragmatic exploitation of this meaning component. In non-first person forms of the verb, it implies the presence of a participant controlling the realisation of the modalised proposition, commonly the speaker or author of the text, or a person or institution on whose behalf they are acting. As the control of the event is external to the event itself, it is also external to the negation of this event. In first person forms, on the other hand, speaker/author and subject coincide. This allows for the following meaning shift:

(i) the speaker *commands* herself to execute the content of the modalised proposition

(ii) the speaker *pledges* to execute the content of the modalised proposition

(iii) the speaker *agrees* to execute the content of the modalised proposition.

This, possibly aided by the futurity component of *scholen*, can give rise to the weak volitional or “willingness” meaning found in the corpus, which is not synonymous with a “weak” or possibility reading of “strong”/necessity *scholen* as described by Ehrich (2001) for present-day German *sollen*, but in fact with the possibility meaning of *wollen* discussed in section 4.2.2. This meaning shift and the ensuing difference in the scope of sentential negation arise at the interface of semantics and pragmatics, not the acquisition of a lexical property such as a polarity restriction or a reanalysis as occupying a different syntactic position. It is unfortunately hard to tell when exactly the described split of *scholen* arose, and in how far it is an artefact of the type of texts chosen for the corpus used. It is present in all texts in the Middle Low German corpus. In the Old Low German texts, there are only two attestations of a first person form of *sculan*, (15a) and (39), both from the minor texts. The latter can be interpreted as having started the meaning shift indicated above, only in (15a), there appears to be a strong obligation without speaker’s control.

(39) *Ik scal sclapan endi restian an themo frethu* ...

I shall sleep and rest in this peace
‘I shall sleep and rest in this peace ...’

(*Psalmenauslegung* 12,11–12)

42. This speaker’s control component may be a later development, as it is not found in the Old Low German example in (15a) above.
5. Summary and Conclusions

The aim of this short investigation was to test a number of syntactic and semantic/lexical approaches to the interaction of negation and modality on data from Old and Middle Low German.

In order to assess the validity of Cormack & Smith’s (2002) approach, which relies crucially on the notion of “modal auxiliaries”, it was checked whether modal verbs in historical Low German can be analysed as such. It was shown that until ca. 1500, modal verbs do indeed form a morpho-syntactically distinct class of verbs in Low German, which unlike their contemporary cognates in other West Germanic languages still lack non-finite forms as well as non-root meanings, apart from the use of *mogen in non-factual conditionals. This latter use of *mogen, however, was argued to have left the system of modality. It can therefore not be argued that Middle Low German had a special class of modal auxiliaries, as Postma & Bennis have claimed for Middle Drentish. Rather, this seems to be a case of delayed regularisation of the modal paradigm. The mere lack of non-finite forms is not yet an argument in favour of an analysis in terms of functional heads. Therefore, Cormack & Smith’s (2002) approach is probably not applicable.

Also Butler’s (2003) account of the scopal interaction of negation and modal verbs cannot be taken over, as its postulation of four positions for modal verbs, interspersed with two negation positions, relies on the assumption that possibility and necessity modals do not normally have the same PF form, as a consequence of their separate LF forms. It was shown that several modals in both Old and Middle Low German (as well as other Germanic languages) can in fact be ambiguous between possibility and necessity readings. *Thurvan ‘need, may’ and *motan ‘be able, must’ in Old Low German can be argued to be such ambiguous modals. While *motan seems to have lost its earlier possibility meaning, the two meanings of *thurvan take separate semantic developments in different dialects of Low German later.

Cinque’s (1999) general outline of his assumed universal hierarchy of functional heads does not sufficiently restrict the scope of sentential negation, by explicitly allowing NegP to attach anywhere below a certain functional head (Mod_pistemic) in the functional sequence, and by not positionally, and therefore scopally, distinguishing between possibility and necessity root modals.

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43. For the loss of the possibility meaning of *motan ‘be permitted/able > must’, one can follow the available analyses for historical High German (Fritz 1997a, Lühr 1997 and literature quoted). The rough development would be ‘permitted by circumstances’ > ‘forced by circumstances’, possibly using negation as a catalyst (Bech 1951, but cf. Lühr 1997 for counterarguments).
Iatridou & Zeijlstra’s approach seems to be able to capture the scopal behaviour of root modals in Old and Middle Low German without having to claim that modal verbs are functional heads and without, like Butler, assuming a negation position scoping over the subject. Their approach was shown to be able to capture the fact that most modals in historical Low German scope below sentential negation, and some like *thurvan/dorven ‘need’, Old Low German *sculan, or Middle Low German moten ‘must’ show particular polarity restrictions, which are to be acquired for individual lexical items. Their approach was unable, however, to account for the restriction of willen ‘will’ to its possibility reading and the split of scholen ‘shall’ along the person dimension in the Middle Low German corpus used.

The present paper proposed to treat these meaning developments in terms of an interaction at the semantics-pragmatics interface. In case of scholen, this amounts to pragmatic exploitation of the speaker’s control meaning component of this modal. In case of willen, it was argued that in principle, both a necessity and a possibility reading are available, as could be shown to be the case with uuillian in Old Low German. These two readings are related by entailment: Under the necessity reading, the modalised proposition is true in a world w if the proposition itself holds in all accessible worlds w’. This entails that it is true in at least one accessible world w’, that is, the existential reading. The sole availability of the possibility reading in the Middle Low German corpus is arguably a consequence of the type of texts used, as indicated in section 4.2.2.

Primary Sources

Old Low German:
[Heliand], [Genesis]
[Beichtspiegel, Psalmenauslegung]

Middle Low German:
[Barsinghausen]
[Börstel]
References


