

## Dimensions of Variation in Old English Modals

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### 10.1 Introduction\*

There is perhaps hardly a class of linguistic elements about which more has been written – without necessarily having a full understanding of their syntax and semantics yet – than the (Old) English modals. Aside from making certain observations on facts that have been under-researched in the rich field, the main goal of this paper is to view – in tandem, rather than in isolation – aspects of variation that are of interest at the syntax-semantics interface. To do so, I will take recourse to philological and theoretical lines of investigation and put their insights to the test on a selection of data from Old English. In line with the topic of the present volume, the categorial status of the modals will be investigated. As far as syntactic height goes, the argument will be that an aspectual head,  $Asp^{\circ}$ , is a better underlying approximation for the properties of the Old English modals than the traditional generative categorization of the class as a plain verbal head,  $V^{\circ}$ .

The class of elements to be investigated, also known as ‘premodals’ in the wake of Lightfoot (1979), has been the subject of a good deal of research from different theoretical angles (cf., e.g., Traugott 1972, 1992; Lightfoot 1979; Plank 1984; Roberts 1985, 1993; Denison 1993; Warner 1992, 1993; van Gelderen 2003; Roberts & Roussou 2003; Fischer 2010). While an exhaustive presentation is not possible, certain claims have played an

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essential role in the discussion, not only with respect to the modals themselves but also with respect to questions of categorial status and clausal architecture. The present paper will focus on the discussion of such issues in combination with the issue of potential interaction with modal meanings. The goal will be to make a case for a more nuanced alternative to one of the strongest syntactic proposals on the market and to investigate aspects of variation in meaning. A key observation will also be made in the course of the discussion with regard to the Old English aspectual prefix *ge-*.

In short, the paper will assess the morphosyntactic and semantic building blocks available in connection with the Old English modals, as well as address questions pertaining to categorial status, modal base, and modal force. Additionally, the issue of actuality entailments will be discussed (in a brief comparison with German). The inquiry is structured as follows: after a brief background given on issues that arise in diachronic linguistics and the choice of data for the present study, which are explained in section 10.2, the subsequent sections pursue the questions raised above, i.e. categorial status in section 10.3, followed by modal bases and modal force in sections 10.4 and 10.5, respectively. The possibility of event realizations or actuality entailments in the context of the modals is dealt with in section 10.6, preceding the concluding remarks offered in section 10.7.

## **10.2 Methodology**

Given the breadth of the field and to keep the discussion manageable, I will focus on modals with apparent existential force in Old English, viz. *cunnan*, *magan*, *motan* – i.e. the cognates of *can*, *may*, *must*, where the latter modal underwent a change in its modal force (having universal force today). These modals show the maximum range of variation that one can get from Old English modals, both with respect to semantic and syntactic factors. I will refer to the modals by using the aforementioned infinitive forms even if the infinitive form is sometimes reconstructed rather than attested in the Old English varieties.

In my utilization of the data pool, I will relate the investigation to claims made in previous literature and I will draw on two lines of empirical enquiry. The first is based on two Old English collections of homilies, the second concerns the YCOE corpus (Taylor et al. 2003). The former data source is rather homogeneous in terms of register (and comparatively speaking, also timing) of composition. The homilies under scrutiny are believed to have been written some time during the tenth century. They were designed mainly as preaching texts for an uneducated audience. This data source is helpful when it comes to having a practical degree of certainty regarding nuances of modal meanings at particular times, as well as in individual texts and text types, which can be better controlled for than in the case of the entire period and diversity of Old English. However, the data source given by the YCOE is highly advantageous when it comes to maximizing the data set available. In particular, if we run into claims regarding the very low frequency of certain syntactic patterns (potentially ungrammatical structures, if a structure is not available at all), it will be useful to check such claims against a broader data pool. In the remainder of this section, some background will be given on the two types of sources for readers who do not usually work on English historical linguistics.

The genre of the homilies is interesting for two reasons. One is that a wealth of such texts are available from Old English, i.e. the genre obeys a well-established and influential tradition of the time. Less errors of transmission may be the result. At the same time, the homilies were to a large extent intended to be transmitted orally, so that they could be understood by an audience that was in most cases illiterate. This brings them closer to natural language usage than other texts. The two volumes chosen for the present investigation are each available in multiple editions. The first one also constitutes the first volume (sometimes referred to as “series”) of Ælfric’s catholic homilies. The second volume has anonymous authorship. Its homilies are referred to as the Blickling Homilies in the philological literature due to Blickling Hall, where they were once located. Ælfric was an abbot who left a

considerable number of well-known writings in Old English. Combining a volume of his writings, with a further volume, maintains a certain consistency with respect to genre while not tying any findings too closely to potentially just one speaker/writer. While it is not known who wrote the Blickling Homilies, the writing process of the extant manuscript has been conducted by two scribes, one of whom seems to have had an editing function over the other (Kelly 2009). Philological, historical, and other issues may still remain to be elucidated with the presently available editions of the homilies. However, for our purposes they form a helpful textual base for the grammar of the modals. Data retrieved from the homilies will be reported by mentioning the collection of homilies, the edition used together with the independent philological translation (e.g. Morris, Thorpe, Kelly<sup>1</sup>), the chapter, and the page number.

The second source of evidence that I have made use of, viz. the YCOE corpus (Taylor et al. 2003), combines a wide selection of Old English philological sources with structural annotation. The database is part of a larger project on historical corpora of English and other languages, lending itself well to work on syntactic questions. Using the *Corpussearch* software, designed by Beth Randall,<sup>2</sup> allows searches on the basis of structural annotation. It will hence come as no surprise that whenever stating that a particular syntactic pattern existed or was unlikely to have existed in Old English, reference to this source will be made. The tokens that I have retrieved from the YCOE corpus are reported by their usual corpus identifiers.

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<sup>1</sup> Translations cannot guarantee the exact meaning, but they are a useful auxiliary means customary in historical linguistics. In difficult cases, multiple translations were consulted, e.g. when multiple meanings seemed to be available and such translations were available (to me). The translations followed are indicated throughout the paper (as are possible comparisons when relevant).

<sup>2</sup> Cf. <http://corpussearch.sourceforge.net/>.

### 10.3 Syntax

In this section, I introduce a widely assumed analysis of the development of the modals, which takes them to have been main verbs prior to the modern period (Lightfoot 1979; Roberts 1993; *inter alii*). According to the view, the modals underwent a diachronic re-analysis, which effectively transformed them into functional T heads “cataclysmically” during the transition from Middle to Modern English, i.e. long after the Old English period (cf. e.g. Plank 1984 and Denison 1993 for a critical assessment). On the syntactic side, I propose a partial correction of the assumed view to the effect that: (i) the items used as modals in Old English already displayed evidence of functional status, and in particular (ii) a plausible analysis of the modals’ categorial status in Old English is under a functional head, which corresponds to Aspect rather than falling under a lexical verbal head.

#### 10.3.1 Background on Old English clause structure

Before discussing the standard generative syntactic view, I will introduce a set of basic facts to ease the understanding of the issues and put aside potential confounds that may arise in diachronic data for readers less well-versed with the structure of earlier English.

A first clarification has to do with the directionality of the structures headed by premodals: they vary between head-final and head-initial. This is shown in (1)-(3) for *cunnan*, *magan*, and *motan*, respectively. The syntactic contexts of the data, which are given with their YCOE notation (cf. Taylor et al. 2003), are deliberately chosen as embedded clauses here in order to control for the Old English version of the Germanic verb-second constraint.<sup>3</sup>

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<sup>3</sup> A finite element that has moved to a higher functional projection such as C wouldn’t be useful in determining whether its complement was right- or left-branching in the pre-movement position. This fact is largely orthogonal to the auxiliary vs. main-verb issue, but it needs to be controlled for.

- (1) a. *nænne geleaffulne mann þe [hi læren] cuþe*  
 no faithful man who her teach could  
 ‘([B]ecause she did not have) any faithful man in town to teach her.’  
 (coaelive,+ALS\_[Eugenia]:30.208)
- b. *hwæðer he cuðe [gan].*  
 whether he could go (coaelive,+ALS[Peter's\_Chair]:32.2284)
- (2) a. *þæt menn [hit gehyran] mihton;*  
 that men it hear could  
 ‘that men could hear it.’ (coaelhom,+AHom\_1:451.233)
- b. *Ic wene ðæt we mægen [ðis openlicor gecyðan]...*  
 I believe that we may this more.openly announce  
 ‘I think we may make this known more clearly...’ (cocura,CP:40.291.12.1912)
- (3) a. *þæt he [hine geseon] moste*  
 that he him see could  
 ‘that he was allowed to see him (God).’ (cocathom1,+ACHom\_I,\_9:250.31.1594)
- b. *þæt Samson moste [him macian sum gamen];*  
 that Samson might them make some pleasure  
 ‘that Samson might make some sport for them.’ (cootest,Judg:16.25.5805)

The examples illustrate that Old English VPs – and IPs/TPs – can be either head-initial or head-final. This fact is naturally also systematically documented independently of the modals

(see especially Susan Pintzuk's and related work; cf. Pintzuk 1999; Taylor & Pintzuk 2008), and we may take it here as a datum of the language.<sup>4</sup>

As a second clarification, the premodals constitute preterite presents possessing morphological forms which were originally past tenses and hence do not fully match the inflectional paradigms of the present. However, they are already linked with a present-tense semantics in Old English. Secondary past tenses are available in Old English. Old English has a few additional preterite presents (e.g. *witan*, 'know'), but only the modals survived. While one cannot take the outstanding morphological heritage of the premodals as preterite presents to be necessarily an argument for functional status on theoretical grounds, it is descriptively one of the features that interestingly set the premodals apart from the majority of the verbs in the paradigms.

A third point pertaining to the syntax of the premodals is their argument structure. In this paper I focus on propositional arguments, i.e. essentially infinitival complements selected by the modals. However, the Old English modals also display alternative selectional patterns. In particular, the presence of objects that are selected by cognates of the modals without the addition of a verb is attested. For a comparison that is imperfect, yet illustrates the point for speakers of Modern English, consider how today's *need* seems to be available both as a verb that takes direct objects and a modal, i.e. as a head taking infinitival complements. I take such early uses of the modals, e.g. taking direct objects and crucially lacking propositional arguments, to be plain verbs (which typically do not have modal meanings; cf. e.g. 'know', 'have power', and 'have something measured out' for *cunnan*, *magan*, and *motan*, respectively (OED)). Therefore, I assume that such items carrying non-modal meanings are main verbs and they develop as separate lexical items during Old English. Notice, at the same

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<sup>4</sup> Whether the variation is viewed as competition between co-existing options in the grammar in the sense of Kroch (1989) or via Kaynian evacuation of the complement for those phrases that appear as head-final on the surface (cf., e.g., Biberauer et al. 2008) is orthogonal to whether an item is an auxiliary or a verb in the base.

time, that we are dealing with the same forms. The parsed corpora (e.g. Taylor et al. 2003) generally use the label MD indiscriminately.<sup>5</sup>

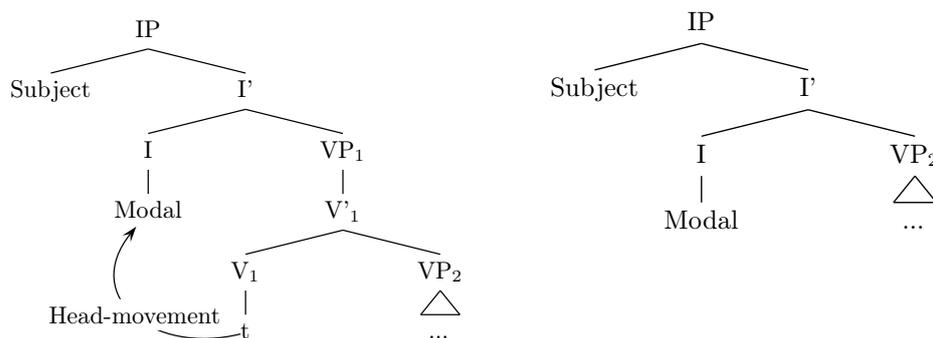
It is important to note that modal meanings and infinitive-selecting patterns are already available in Old English. They are associated with the propositional – rather than individual-denoting – complements. (Relevant aspects of variation with respect to the category of the complements of the modals will be re-examined in section 10.4.) I will now turn to the heart of the matter with regard to categorial status of the modals themselves.

### 10.3.2 *Locating the reanalysis of the premodals in syntactic representation*

The prevalent generative view of early English modals is that all the modals preceding the Modern period (i.e. including Old and Middle English) behave as main verbs (Lightfoot 1979; Roberts 1985, 1993; Roberts and Roussou 2003). Following Lightfoot’s work, Old English modals are often called premodals (I continue to use the term descriptively, to indicate the early character). The core of the standard claim can be represented as follows:

(4) **Reanalysis of the English modals** – received view (simplified)

a. Old/Middle English:                      =>                      b. Modern English:



<sup>5</sup> However, the corpora offer the possibility of searching e.g. for infinitival complements of the items that are labeled as modal. I will discuss these estimates in section 10.4.

The specific standard claim is that the relevant head, to which the modals are reanalyzed, is in the traditional auxiliary of I(nfl) domain (e.g. ‘T’ in Roberts and Roussou 2003). I will adopt this part, i.e. the *output* of the reanalysis schematized in b. above, as a useful phrase-structural approximation. However, the analysis I propose differs with respect to the input of the reanalysis. I will argue that the modals were not under V, but already functional under a node at the structural height of Asp(ect) in Old English.

The traditional generative reanalysis view, as depicted above, has the potential of explaining several changes in the verbal and auxiliary system of English at the transition from Middle to Modern English. Moreover, it is also taken to apply to auxiliary *do*. However, Warner (1992, 1993) has already pointed out that although an auxiliarization tendency can be observed increasingly through the history of the language, the Old English modals already show initial indication of auxiliary-like behavior. While the framework in which Warner develops his proposal is distinct, I intend to follow and expand his observation with respect to ellipsis next. My goal is to strengthen what I take to be Warner’s main argument for functional-category status, viz. the one based on VP ellipsis, and subsequently suggest two new arguments.

I assume a simple phrase structure consisting of the heads  $C^\circ$ ,  $T^\circ$ ,  $Asp^\circ$ , and  $V^\circ$ , and that they are lined up in exactly this structurally decreasing order. Such heads are needed both for the purposes of syntactic and semantic representation and I will take their presence to be uncontroversial without motivating it further here. However, I will not resort to richer, so-called Split-Infl or Split-C projections. I argue that in a phrase structure such as the one previously mentioned the modals re-analyzed from a position corresponding to  $Asp^\circ$  to  $T^\circ$  (rather than from  $V^\circ$  to  $T^\circ$ ) in syntactic terms.

A first syntactic argument for functional status of the premodals is connected to ellipsis. More specifically VP ellipsis (VPE). The Old English modals could license VPE, a phenomenon that is taken to indicate functional status of its licenser (cf. e.g. Lobeck 1995;

Johnson 2001; Winkler 2005; Gergel 2009a). I first illustrate the point with examples from Ælfric’s homilies and the Blickling Homilies (example (6) is extracted via the YCOE corpus):

(5) *cwæð þæt he wolde genealæcan his hulce, gif he mihte\_.*

said that he wished reach his hut, if he could.

‘[H]e said he wished to reach his hut, if he could.’ (Ælf.Hom.Thorpe XXIII:336)

(6) *Forþon we sceolan nu gepencean, þa hwile þe we magan &*

therefore we must now consider there while that we may and

*motan\_ , ure saula þearfe, þe læs we foryldon þas alyfdon tid*

can our soul need lest we put-off this permitted time,

*& þonne willon þonne we ne magon.*

and then want then we not can

‘Therefore, we should now consider the need of our souls while we may and are able to, lest we put off this permitted time and wish to repent when we no longer can.’

(coblick,HomS\_26\_[BIHom\_7]:95.230.1239, B.Hom.Kelly 66:194)

(7) *Gif ge cunnon\_ , þa ðe yfele sind, [syllan ða gódnysse eowrum bearnum],...*

if you can who that evil are give the good your children

‘If ye can, who are evil, give to your children what is good,...’

(Ælf.Hom.Thorpe XVIII: 252)

The sentence in (5) contains a VPE site under the modal *mihte* (preterite of *magan*). This example obeys parallelism and the overt antecedent is under a contrasting volitional modal *wolde*, cf. *genealæcan his hulce*, ‘reach his hut’. (6) is slightly more involved. The object of the verb in the antecedent (*ure saula þearfe*, ‘our soul’s need’) is extraposed, and the ellipsis

site intervenes between the in-situ and the extraposed part of the antecedent. Furthermore, there are two conjoined modals under the licensing node, *magan* and *motan*, a fact which may point to the similar syntactic status of the two modals.<sup>6</sup> Finally, the example in (7) features a VPE site licensed by *cunnan*. All the modals under scrutiny here had the ability of licensing VPE. Sites containing non-expressed predicates are also available in Old English texts beyond the homilies. For example, a search for silent verbs in the YCOE corpus returned 90 examples, 82 of which were licensed by modals.<sup>7</sup>

Nonetheless, the argument based on VPE needs to be strengthened, since one cannot assume, a priori, that the modals have a similar status in Old English as they do in contemporary varieties of English, where VPE is taken as an indicator of auxiliaryhood (cf., e.g., Denison 1993). It is worth observing, from a cross-linguistic perspective, that an element's quality of licensing VPE, i.e. deletion of its complement, does not necessarily qualify it for functional status in and of itself. Lexical verbs can undergo V-to-T movement and *then* license ellipsis from the position they have moved to in some languages (cf. McCloskey 1991; Ngonyani 1996; Cyrino and Matos 2002; Goldberg 2005). Such cases usually require the fulfillment of two conditions, viz. V-to-T and licensing of VPE. For example, French has V-to-T, but no general VPE mechanism that would allow deletion in the scope of a plain verb moved to T.<sup>8</sup> What about early English? To make sure that the argument based on VPE is informative, we must rule out that the option based on licensing after

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<sup>6</sup> There is arguably yet one more ellipsis site at the end of the fragment, but I will not go further into its details.

<sup>7</sup> In addition to the ellipses licensed by modals, there were two examples of a predicate ellipsis licensed by *beon*, 'be', and six examples licensed by the hortative verb *uton*, 'let us'.

<sup>8</sup> While the existence of VPE - if VPE appears only with a restricted class of elements - could be used as one indication of auxiliaryhood, this is not the only diagnostic. For German, for example, the issue of whether the modals are auxiliaries or not is a highly debated one and the notion of syntactic coherence a relevant diagnostic (cf. e.g. Haider 1997; Reis 2001; Wurmbrand 2001; Sternefeld 2006; Axel-Tober and Gergel to appear; for discussions).

verb-movement sets in. While early English had movement of verbs to higher functional projections (Roberts 1985; Kroch 1989), it did not seem to produce the appearance of complement deletion under verbs in general with the distinctive agreement patterns that are known from the cross-linguistic research of VPE (see Goldberg 2005 and the literature reviewed there once again).<sup>9</sup>

A second argument for functional status of the premodals can be culled from VP topicalization. If we assume, e.g. with Johnson (2001), that there is some similarity in the mechanics of VP topicalization and VP ellipsis, then the availability of topicalization is expected. While topicalization is infrequent in the Old English data, it is still present. (8) and (9) below feature two different types of examples, only the first one of which I argue to be indicative of topicalization:

(8) *[Sprecan] he mihte \_, gif he wolde;*

    speak    he might    if he wanted

    ‘He could have spoken, had he been willing.’

(Ælf.Hom.Thorpe IX:142)

(9) *Ʒeah ðe sume men [singan]ne cunnon*

    though    some men sing    not can

    ‘Though some men cannot sing, (they can, nevertheless, bear the light in their hands);’

(Ælf.Hom.Thorpe IX:150)

In (8), the subject can be assumed to occupy a high position such as Spec-TP, since it is a pronoun (cf. Fischer et al. 2000; Kroch et al. 2000, for the indicative syntax of subject pronouns). The verbal infinitive *sprecan*, ‘speak’ is hence topicalized, since it surfaces to the

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<sup>9</sup> More research on the possibilities of VPE in Old English, independently of the modals, would be required, however, to gain fuller insight into this domain.

left of the high subject. However, in (9) a different syntactic parse is plausible. The subject is non-pronominal and situated in its low (in-situ) position, which was possible in early English. I take this position to be Spec-VP on simplest assumptions; cf. Haeberli (2000); Gergel (2008), among others, for discussions. The modal together with the possibly cliticized negation has its complement to the left. Thus, even though there is a contrast involved in example (9), we cannot assume such examples – unlike the type in (8) – to be in a topic position in the left periphery on syntactic grounds.<sup>10</sup>

A third argument for assuming functional-category status for Old English modals makes it plausible to take them to occupy Asp<sup>o</sup> territory in clause structure. It is based on a particular co-occurrence restriction that has escaped attention in discussions of categorial status so far. While Old English is not usually considered to have had a pervasive perfective/imperfective distinction in its suffixed paradigms, it had the verbal prefix *ge-*. The contribution of the prefix is that of a perfective (cf., e.g., van Gelderen 2003; McFadden 2010). To avoid a confound, the Old English version of the prefix is distinct from the distribution of the cognate *ge-* in modern languages like German. In the latter, when available,

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<sup>10</sup> The status of verbal topicalization in early English remains interesting for further research. For instance, the example in (8) combines topicalization and ellipsis (the antecedent of an ellipsis site is topicalized).

Furthermore, remnants of the lexical VP can be left behind, as shown in (i) below.

- (i) *Hleotan man mot mid geleafan swa þeah on woruldðingum butan wiccecræfte,*  
 cast.lots one may with belief so though in worldly things without witchcraft  
 ‘Nevertheless a man may cast lots, in faith, in worldly things, without witchcraft,  
 (coelive,+ALS\_[Auguries]:84.3567, Translation by Skeat, p. 371)

Independently of the technical analysis of such topicalization (e.g. one can envisage the mechanism that produces them as closer to pseudogapping, in allowing part of the VP to be pre-empted – or perhaps something quite different altogether; cf. Trinh (2009) for recent theoretical options of different fronting strategies), it appears to set the modals, with which it occurs, apart from lexical verbs, and it does so on a par with VP ellipsis, hence potentially similarly to Modern English.

*ge-* is a (largely obligatory) morphological concord marker, marking past participles (e.g. in addition to auxiliaries such as *haben/sein* ‘have/be’ in the construction of the perfect). Moreover, the productive version of the German prefix *ge-* never appears in the forms of the present, the preterite, or the infinitive. By contrast, the prefix *ge-* in Old English appears both in the present and in the preterite, but it does not have to appear on either. Moreover, it is available on infinitives. Crucially for our object of investigation, *ge-* does not co-occur with *magan*, *cunnan*, or *motan*, and more generally with any Old English modal (with the orthogonal exception of a particular participial/adjectival use etymologically related to *cunnan*, on which, see section 10.4.2). This is surprising given the general availability of the prefix with verbs in general, also e.g. with *be*. Furthermore, the restriction cannot be blamed on the preterite-present nature of the modals either. For instance, a preterite present that is not a modal, such as *witan*, ‘know’, is well-attested in the data co-occurring with *ge-*. I take the co-occurrence restriction between perfective *ge-* and the modals as evidence for the fact that they occupy the same syntactic area, namely the head Asp<sup>o</sup>.<sup>11</sup>

To conclude the subsection, there is evidence that indicates the modals of Old English were different from other verbs and already had the status of a functional category. The particular approximation suggested has been that the modals were inserted in the position in which aspectual heads usually join the derivation.

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<sup>11</sup> Van Gelderen (2003) discusses the possibilities of *ge-* in the complements of Old English modals (not in relationship to attachment to the modals themselves). While the picture emerging in that domain may be more intricate, as van Gelderen points out, I use in this paper the new evidence to argue for her overall suggestion (for Old English, not for Modern English), namely that the modals join the syntactic derivation in the area of an aspectual head. Finally, I will have to leave it to further research to what extent the modern tendency in German to avoid *ge-*-based participial forms on the modals via suppletion (the so-called *infinitivus pro participio* rule) can be related to the earlier Germanic conditioning of the *ge-* prefix.

#### 10.4 Modal at the syntax-semantics interface and the question of modal bases

Three types of modality are relevant for current purposes: epistemic, deontic, and circumstantial. Circumstantial modality is common in semantic treatments of modality (e.g. Kratzer 1991). It is important to note that circumstantial modality has not played a role in philological and syntactic investigations of the Old English premodals. While much of the research on the history of the modals has concentrated on the question of whether epistemic readings were available or not and how they could have developed out of *deontic* modals, I propose that circumstantial readings are decisive concerning reconstructing the origins of the epistemic modals.

The question of whether Old English has epistemic modals relates to categorial status, structural height, and the syntactic reanalysis introduced in section 10.3. The implicit logic beyond the connection is as follows. If the modals have been reanalyzed to a higher position in the syntactic tree much later than during the Old English period (Roberts 1993; compare, once again, the discussion in the previous section) and if epistemic modals are associated with high structural positions (e.g. Butler 2003; Cinque 1999; Drubig 2001), then the *lack* of epistemic readings at a time when the modals were not yet ‘high enough’ in terms of their syntactic position may fall in place. However, it is important to consider if and exactly how this is reflected in the Old English data under consideration.

Epistemic occurrences of modals in Old English are infrequent in the preserved written texts. This impression has led some researchers to minimize, or even deny, their existence in Old English altogether in different theoretical camps and to different degrees. In the generative tradition, the claim that epistemic readings are attested only late historically is interpreted in terms of an upward development in the tree-geometric sense. The idea is as simple as it may be attractive – the modals originate as main verbs at early times and end up in functional projections in Modern English only. Since epistemic modals are considered to occupy high structural positions, this is interpreted as at least compatible with the fact that

they only arise after the Old English period. Even a study as careful as Roberts and Roussou (1999: 45) seems to take it for granted that epistemic readings only appear in Middle English (cf. Traugott 1989; Goosens 1982; Denison 1993; van Gelderen 2003 for cautionary notes). I will survey the allowed modal bases for *cunnan*, *magan*, and *motan* in Old English and argue that epistemic readings are possible in some cases. Since there are important differences between the modals under investigation, I will consider them individually (some cross-references will be made for ease of comparison).<sup>12</sup>

#### 10.4.1 *Magan/may*<sup>13</sup>

The variants of *magan* have the highest incidence in the Old English data. The premodal has a total of over 5400 examples in the YCOE (Taylor et al. 2003). This is more than six times the recorded incidence of *motan* and almost nine times that of *cunnan* in the same corpus (cf. 4.2 and 4.3). The proportion of infinitives selected by *magan* is also particularly high at an absolute of over 5000 examples, including ca. 601 instances of infinitival ‘be’ and 102 of infinitival ‘have’. At a total of ca. 92%, the proportion is very close to *motan*’s, but much higher than *cunnan*’s, as we will see in the next two subsections.<sup>14</sup>

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<sup>12</sup> A further problem in associating epistemic modals with high structural positions in Old English is independent of our immediate concerns. Given that the premodals can move to a high position such as C (as any verb in most Germanic languages) and given the Head Movement Constraint (Travis 1984), one would have to stipulate that epistemic readings are only associated with high structural positions when they are not derived via the otherwise frequent movement to C in the language.

<sup>13</sup> The Old English modals and the Modern cognates are listed together for quick reference. A number of differences in their meanings will be discussed in what follows.

<sup>14</sup> For practical purposes stemming from the partially flat corpus annotation in the verbal domain, the relevant structural condition in the search was approached as sisterhood of a modal with an infinitival verbal head, rather than a mother-daughter structural relationship of a modal with a VP complement. Regardless, the results are equivalent in practice. The two main conditions for the final query used for this study are given in (i):

*Magan*, the predecessor of *may*, is often translated as ‘can’. The original occurrences sometimes also appear as ‘be able to’ and as ‘may’ in translations. Furthermore, the Dictionary of Old English offers non-modal senses such as ‘to be strong, to have power, or influence’. Like *cunnan* and *motan*, *magan* seems to have had a past as a main verb. What the premodal also shares in Old English with the two other modals investigated is the possibility of allowing a circumstantial modal base when used with a further verb. However, circumstantial readings are broad and not restricted to mentally-relevant circumstances in the case of *magan* (compare 4.2. and 4.3.). Similar and more specific circumstances were properly included in the range of possibilities as the following examples illustrate:

(10) *Cristes þegnas þeossa worda nan ongeotan ne mehton*

Christ’s disciples of these words not understand not could

‘Christ’s disciples were not able to understand any of these sayings.’

(Blick.Hom.Morr. 15: 14)

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(i) query: (MD\* hasSister \*VB) AND (MD\* iDoms “modal\_forms”)

The wild card suffixed to the modal head (MD\*) is necessary to incorporate modal forms in the past, as well as other forms. The wild card prefixed to the verbal head (\*VB) is necessary to include verbal items with preceding particles, which would otherwise be missed due to the annotation scheme. However, a wild card prefixed to MD returns no additional hits. Additionally, a wildcard suffixed to VB brings in erroneous data, in the sense that they will not be infinitives as desired any longer, rather other verbal forms that are not complements of the modals and often overlap with data from searches on forms of *be* and *have*. Hence these possibilities are not implemented above. In addition to items annotated as verbs, I have also searched, exactly similarly as for \*VB, for instances of infinitival forms of *have* (i.e. \*HV) and *be* (\*BE). Further searches for inflected infinitives, which existed in Old English in general, returned no hits in the complement position of the modals searched for. The searches for the other modals were conducted under the same structural conditions.

- (11) *þa gewende he to Rome, be ðæs caseres hæse, þæt he hine*  
 there went he to Rome by the emperor's command that he himself  
*betealde, gif he mihte.*  
 exculpate if he might  
 'He therefore went, by the emperor's command, to Rome, so that he might clear  
 himself, if he could.'  
 (Ælf.Hom.Thorpe V: 80)

While the salient reading of (10) is circumstantial, (11) could also be plausibly interpreted deontically. In this example, the clearance referred to is only possible in the context if granted by the authorities.

Furthermore, *magan* allows for certain epistemic readings in Old English. The reason why I state this cautiously is that claims about the intended meaning cannot be made in many cases. Nonetheless, the meanings that *can* arise from the context are just as relevant when it comes to historical processes (cf. Eckardt 2006). If the premodals are not often intended to convey epistemic readings, in the written genres that are available to us, there is evidence of examples that could give rise to such readings were available. This point is possibly shared with *motan* (cf. below), but there are more types of contexts available for *magan*. Consider the following examples from the Blickling Homilies:

- (12) *þeos circe mid þys portice mihte hu hwego fif hund manna*  
 this church with the porch might how what/some five hundred men  
*befón ond behabban*  
 contain and hold  
 'This church with the portico might contain and hold some five hundred men.'  
 (Blick.Hom.Kel. 142)

(13) *on sumre stowe he wæs þæt man mid his hánda nealice geræcean mihte,*

in some place it was that man with his hands nearly reach could

‘[I]n one place a man might hardly reach it [the roof] with his hand,...’

(Blick.Hom.Kel. 142)

Such examples are circumstantial, with a potential for being re-interpreted epistemically. The narrative passage, including the sentences provided above, provides ample description and evidence regarding the capacity of the church and the unusual shape of the roof (constructed at various levels), respectively. Furthermore, the sentences above contain approximators in the expressions for ‘nearly’ and ‘some’ (the latter word being used in the approximating sense). Such contexts are compatible with circumstantial readings. However, some of them seem to also allow epistemic interpretations. The effect of not knowing whether something held true exactly as it is phrased may have originally stemmed from the approximators in such examples. Such uncertainties may have reasonably been (re-)interpreted as also being associated, at least partly, with the modals. We may hypothesize that uncertainty played a role in why some modals had a potential to be interpreted epistemically, which, among other means, could be introduced via approximators. The fact that this is shown most clearly by *magan* rather than by other modals is most easily explained by its higher frequency. By this I mean, if a premodal is not frequent enough, it is less likely for it to appear in contexts containing elements of uncertainty, which seem to be necessary for natural-language epistemic modality. A relevant and slightly different type of example that could be interpreted epistemically is the following one from Ælfric:

(14) *[A]nd hi ða ealle sæton, swa swa mihte beon fif ðusend wera.*

and they there all sat such as might be five thousand men

‘[A]nd they then all sat, about five thousand men.’

The translation of the sequence (originally adopted from Thorpe, also adopted as such in Denison 1993: 298) involves an approximating construction. The sitting event of the group was such that it produced the appearance of there being five thousand men. The first sentence thus gives the source of the evidence in this case (viz. the sitting event). The speaker/writer might have meant a sheer circumstantial reading. However, there is a modal used and nothing seems to be able to stop such contexts from being interpreted towards an epistemic/evidential reading.

Yet, another context in which the notion of uncertainty may have contributed to the grammaticalization of epistemic readings are conditionals. In the following example, which was retrieved from a similar type of text via the YCOE corpus, it is interesting to note that the truth of the core proposition is under debate:

(15) *Eac ða arfæstan beoð wolice gearwurðode,*

also the virtuous are unjustly honored

*gif þæt soð beon mæg þæt him swa gesceapen wæs;*

it that true be may that it so created was

‘Likewise the good are unjustly honoured, if it can be true that it was so determined for them.’ (coaelive,+ALS\_[Auguries]:233.3638; translation from Skeat 1881: 381)

For example (16), an additional note is in order regarding complementation: *magan* could take CP complements in Old English:

(16) *Eaðe mæg, þæt me Drihten þurh his gearnung miltsigan wille.*

easily may that me God through his earning show.mercy wants

‘It may well be that God will show mercy through his merit.’

(cobede, Bede\_3:11.192.5.1929)

That modal constructions with CP complements allowed epistemic readings has been observed, e.g., in Denison (1993) and Fischer (2010). To sharpen the view with respect to the modals of interest here, we may add to this observation the one that *cunnan* and *motan* did interestingly *not* display such complementation possibilities.

It may be tempting to attribute the presence of epistemic readings to the fact that the propositional argument is expressed through a finite clause. In terms of clausal architecture, the modal itself will be beyond the C domain, if one assumes the same clausal domain. However, there are two issues. The first is that the aforementioned pattern is particularly infrequent. The second, according to Denison as well as Fischer, is that a broader generalization can be culled, namely by considering impersonal constructions. Accordingly, modals with CP complements would be a part of the pattern of impersonal constructions. A typical example of an impersonal is given in (17), cited here from Fischer (2010):

(17) *þonne mæg hine scamigan þære brædinge his hlisan* (Bo 19.46.5)

then can him.ACC shame of-the spreading his fame

‘then he may be ashamed of the extent of his fame’

To sum up the key points of this subsection, *magan* is the most frequent modal in Old English, it prevails with infinitives, and it is the one that shows the clearest cases of epistemic readings, presumably under the influence of factors of uncertainty.

#### 10.4.2 *Cunnan/can*

The YCOE corpus contains 615 examples of *cunnan*'s variant forms. Out of this total, only 161 tokens occur in conjunction with an overt infinitive of another verb, which is usually a main verb. There is only one instance of 'be' in the complement of *cunnan* and none of 'have'. This stands in a conspicuous contrast with *magan* (cf. 4.1. above). That is, only a small proportion of the tokens containing the premodals, approximately 26%, appear with the infinitive. This estimation is already indicative of the fact that establishing the relationship of *cunnan* to modality arises. *Cunnan* is the predecessor of the modal *can*, but the distribution of its early occurrences appears to be the furthest away from Modern English modals when compared to the other modals of Old English. This holds both for argument structures, since it can frequently take nominal direct objects and its range of meanings. The latter is rendered by the Oxford English Dictionary (OED 2013, *can* v.1) as *to know* on its first meaning, a fact which potentially explains the presence of its selected direct objects. This seems to be a principal pattern in Old English (cf. e.g. (19) for an example from the Blickling Homilies below). Given that it was a preterite present, it is likely that *cunnan* was derived from learning (i.e. it meant 'know', perhaps originally 'know due to *having* learnt'). Other listed lexical entries in the OED are 'to have learned (a thing),' 'to have skill (in),' 'to have knowledge (in),' and a few others that appear to be related.

None of the meanings mentioned are modal *per se*. However, they can be regarded as close to a circumstantial sense of intellectual ability. A sense of being mentally able to experience or do something seems to have been prevalent in the meanings of the early occurrences. The OED gives one attestation of *cunnan*, from 1154, which is labeled as a modal auxiliary and still falls into the (late) Old English period. The other examples in the OED that are labeled auxiliary are from the Middle English period. Nonetheless, as we will see, some sense of '(originally intellectually based) ability', and hence genuine modality,

must have previously been available in the Old English period, coupled with infinitival complementation.

To gain insight into the behavior of *cunnan* on a specific textual basis, consider the Blickling instances. They contain many instances of participle/adjectival uses of *cub* and related forms, which had meanings along the lines of ‘(well-) known’, ‘familiar’; cf. (18) in a predicative construction *be known (to someone) that...*). Additionally, there are six examples of *cunnan* used as a (finite) verb, which are listed in the Blickling concordance (Kelly 2009). Some of the finite instances are indeed used in the sense of ‘know’, as (19) illustrates.<sup>15</sup>

(18) *opþe hwanan sceal me cub beon þæt ic, mid lichomolicum eagam,*

or whence will me known be that I with bodily eyes

*geseon ne mæg?*

see not can

‘[O]r in what manner will it be manifested to me which, with human eyes, I am unable to see?’

(Blick.Hom.Kelly 14:100)

(19) *ond þone weg ic ne con.*

and the way I not know

‘[A]nd I don’t know the route.’

(Blick.Hom.Kelly 158:33)

Such uses did not require a further verb and taking them to be main verbs is the simplest hypothesis.<sup>16</sup> However, *cunnan* can also be used as a modal. That is, it could take infinitive-

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<sup>15</sup> If it were not for the frequent participial examples, *cunnan* might appear as the least frequent candidate for a modal in this collection from the range of modals introduced in section 10.2.

<sup>16</sup> We cannot exclude entirely that e.g. a meaning along the lines of ‘I am not able to state the route’ might have been understood. It is entailed by the simpler meaning we assume, with the translation, in (19) above.

headed complements – the examples in (20a-b) are occurrences with an infinitival VP from the same homilies:

- (20) a. & þa lareowas sceolan synnfullum mannum eadmodlice tæcan & læran,  
 and the teachers shall sinful.dat men.dat humbly present and teach  
 þæt hie heora synna **cunnon** [onrihtlice **geandettan**];  
 that they their sins can rightly confess  
 ‘The teachers must humbly teach and instruct sinful men so that they may know  
 how to properly confess their sins,’ (Blick.Hom.Kelly 28: 60)
- b. þæt hie [þæt **on**geotan] ne **cuðan** þæt hie þær gehyrdon  
 that they that understand not could that they there heard  
 ‘[That] they were not able to recognize what they heard there.’  
 (Blick.Hom.Kelly 74:19)

The relationship between genuine modal meanings and the ability meanings in the sense of ‘know’ can still be regarded as being in flux even in the infinitive-taking instances of *cunnan*. While example (20a) may allow an alternative construal to the one of ability (i.e. one still in the sense of ‘know’, cf. the option taken in the translation via ‘know how to’), (20b) brings out the circumstantial modality more clearly. Similarly, Ælfric’s homilies contain a majority of examples in which *cunnan* is used as a main verb. However, examples of its use as a modal in the narrow sense, i.e. with an infinitive also appear (cf. (9) above). An example with an infinitive and a modal meaning is (21).

- (21) þæt ge **cunnon** þæt ece lif gearnian  
 that you can that eternal life earn  
 that ye may be able to earn the eternal life (Ælf.Hom.Thorpe XXXII: 488)

The context of (21) is about earning eternal life. The more specific modal meaning could be either circumstantial or deontic. It is important to note that an epistemic reading is less likely given that the message is conveyed as a matter of fact. *Cunnan* with infinitives and modal meanings constituted then a small, but extant, pattern in Old English. Further indication that modal *cunnan* did not behave differently in structural terms from the other Old English modals when it took infinitive complements is that it could be coordinated with the other modals. The following example extracted from the YCOE corpus illustrates this fact:

(22) *Nis se man on life þe mæge oððe cunne swa yfel hit asecgan*

not-is the man in life that may or can as evil it say

*swa hit sceal geweorðan on þam deoflican timan.*

as it shall become on that devilish time

‘There is no one alive who may say or can say how evil it will be in that devilish time.’

(cowulf, WHom\_5:97.228 – Translation from Joyce Tally Lionarons’s edition, <http://webpages.ursinus.edu/jlionarons/wulfstan/Wulfstan.html>)

In (22), *magan* and *cunnan* are coordinated. Recall from section 10.4.1 that *magan* is relatively well developed as a modal already in Old English and it even shows epistemic readings. In fact, this pattern of coordination is the most frequent pattern in the YCOE corpus: 8 out of a total of 49 tokens of modals in a structural sisterhood relationship have the combination consisting of *magan* and *cunnan*.

A few combinations with three modal items are also attested, cf. (23) below, with *motan* in addition to *magan* and *cunnan*. The entire series of ‘possibility’ modals could then be lined up in Old English. One possibility is that there are semantic distinctions in such cases. Another possibility is that the items reinforce one another to some extent. For example,

they could be used as a rhetoric device (cf. Hyiama 2005:187, who - using the example for different purposes - translates the entire series of three modals simply with one ‘may’).

(23) ...þæt we ure lif mid soðe & mid rihte lifigan **moton** & **magon** & **cunnan**.

that we our life with truth & with justice live must & may & can

‘So that we may, are able to, and know how to live our lives truly and justly.’

(coverhom, HomS\_2\_[ScraggVerc\_16]:93.2090)

How did *cunnan* behave with respect to the co-occurrence restriction with the perfective marker *ge-*, which was held with other modals but not with lexical verbs (cf. section 10.2)? A form *ge-cunnan* was available in Old English. However, it only had non-modal meanings that were in the range of ‘to know, to be familiar with a fact, to understand a mystery, to know someone.’ There are no co-occurrences of *cunnan* used as a modal with the prefix *ge-* in either of the homily groups studied or the entire YCOE corpus. By this I mean, the two uses of *cunnan*, as a verb and a premodal, are clearly distinguishable. This reinforces the current assumption that they are already distinct lexical items in Old English.

*Cunnan*, is an emerging modal in Old English. It widens its uses from a particular version of preterite-present based verb with the original meaning along the lines of ‘know’ towards a particular version of premodal ‘be able’ in the course of Old English. Concerning the modal readings, this early development only allows for circumstantial readings, more specifically, for a subset of them that are related to intellectual abilities. It may seem cogent to hypothesize that intellectual abilities have been transferred from the lexical entry of the earliest verb ‘know’ to be incorporated into the background function of the later modal. Conversely, there is no reliable epistemic attestation of this modal despite the possible connection between knowledge and epistemic states of affairs. This apparent easy connection may also have been the biggest impediment. The missing portion of *uncertainty*, that is

usually part of epistemic modals, may have been the reason why only circumstantial readings are widely attested in Old English. (Recall from 4.1 that *magan*, ‘may’, displayed the relevant uncertainty contexts.)

#### 10.4 *Motan/must*

There are 864 examples of *motan* that are labeled as modal in the YCOE. This is considerably lower than the prevalent presence of *magan* (cf. 4.1) in the corpus, and only slightly higher than the one for *cunnan*, which displayed a total of 615 examples. Moreover, there is a considerable difference between *cunnan* and *motan* when we take into account the incidence of infinitives selected as complements. *Motan* in the YCOE appeared in 809 cases in this configuration (i.e. ca. 93% of cases). Out of the total of infinitives, 77 were instance of (the cognates of) ‘have’ and 45 of the infinitives were of ‘be’. The original meaning of *motan* may have been ‘have something measured out’, as is hypothesized by the OED via reconstruction. As in the case of *cunnan*, when the item is used as a modal, most readings are easily construed as circumstantial:

(24) *þa he hit for manna teonan begrecaþ ne **moste**,*

then he it form en-of anger break not could

When **he was not able**, on account of men’s anger, to break it,...

(Blick.Hom.Morr. XVIII: 221)

Unlike in the case of *cunnan*, a narrowly restricted circumstantial modal base is not the only interpretive option. First, while the example above had a circumstantial reading, it was not about a necessarily intellectual ability (or lack thereof due to negation). Second, the range of meanings is not limited to clearly circumstantial cases. Consider (25), in which the modal by itself seems to be ambiguous between a circumstantial and a deontic reading. The latter is

prevalent due to the embedding under a lexical item that explicitly indicates permission, viz. the noun *leafnesse*, ‘leave’, taking a CP which in turn contains the modal:

(25) *þæt wif he onfeng fram hyre yl drum þære arednesse, þæt hio his leafnesse*

that woman he took from her parents the condition that she his leave

*hæfde þæt heo þone þeaw þæs Cristenan geleafan & hyre æfestnesse*

had that she the custom the-of Christiana belief and her religion

*ungewemmedne healdan **moste** ....*

unhindered hold might

‘That woman he took from her parents under the condition that she would have his permission to keep unhindered the practice of Christian belief and her religion [...]’

(cobede, Bede: 14.58.13.544)

A clear deontic reading for *motan* in a matrix environment is shown in (26), from Ælfric, where permission in the context is granted for certain actions (and not for others):

(26) *Ealra þæra þinga þe on neorxna-wange sindon þu **most** brucan. ... buton anum treowe*

all.of the things that in paradise are you may eat except one tree

Of all the things that are in paradise you may eat (except one tree)

‘Of all the things which are in Paradise thou mayest eat, ... save one tree ....’

(Ælf.Hom.Thorpe I: 12)

On closer inspection, it appears that there was even a potential for epistemic readings to arise:

(27) *Ða blissode heo micclum þæt heo hit beon **moste**.*

then rejoiced she much that she it be might

‘Then she greatly rejoiced that she might be it.’ (Ælf.Hom.Thorpe II: 42)

(27) is ambiguous between a deontic, a circumstantial, and potentially an epistemic reading. The context is one of Mary having received the news that she might bear a child. The hear-say evidence of the news, which is explicitly mentioned, could give rise to an evidential reading. Of course, the joy expressed in the sentence could also be about the permission to become the chosen one (deontic), or simply about the relevant circumstances.

Another type of context which could induce evidentially colored modality with *motan* are verbs of saying as illustrated in (28):

(28) *Sægd is þæt se ilca wiperwarda þe him ær þa sinna lærde þæt se hi*  
said is that the same adversary that them before the sins taught that he them  
*mote eft mid mycclum witum wítnian, buton hie hit ær gebeton willon.*  
must after with great pain punish except they it before amend want  
‘It is **said** that the same adversary that previously instructed them to sin **will**  
afterwards torment them with great suffering, unless they previously amend their  
ways.’ (B.Hom.Kelly 42; similarly Morris p. 60)

Standing alone, the modal *will*, which is used in the two translations, does not seem to be sufficient to indicate epistemic modality. Although, it could indicate some sort of epistemic uncertainty. The key point here is that it is under a verb that indicates reportative evidence. Here, the narrator takes precaution in reporting on the devil and sinners. They do not claim direct evidence, rather they contend this originates from an unspecified source.

To conclude the section, the three premodals inspected allowed infinitival complements, but *cunnan* displayed this option only as a minority pattern, while for *magan* and *motan* it was prevalent. *Magan* also shows the clearest examples that could give rise to

epistemic readings (*cunnan* virtually never does). The potential for epistemic readings may have been enhanced by a series of factors including CP-complementation (as has been previously proposed), as well as the sheer predominant frequency of the modal and the availability of a range of co-occurring expressions of uncertainty. All three items when used as modals in Old English are incompatible with perfective *ge*-prefixation. The latter fact is predicted if we assume that the modals were merged under *Asp*<sup>o</sup> themselves.

### 10.5 Modal force

In this section I will discuss potential oscillations of modal force of the same items, which is especially relevant in the case of *motan*. Although its modern cognate, *must*, has clear universal quantificational force, *motan* has a less clearer status with respect to modal force, i.e. often as an apparent existential modal as pointedly observed in the philological tradition (cf. e.g. Ono 1958; see Bech 1951 for a history of the German modals, where a similar phenomenon has been attested for *müssen*, and more generally van der Auwera and Plungian 1998 for typological considerations).

The oscillation displayed by *motan*, the cognate of ‘must,’ in Old (and partly Middle) English is fundamentally and genuinely one of modal force. There are cases that may be translated systematically by *may* (or other exponents of existential modal force), and yet other examples that are best rendered by a modal of universal force in Modern English. I do not have a general method for translations and I am not suggesting anything new by noting this variation. Nonetheless, I will ultimately seek to determine two points: (i) to what extent did *motan* show variation in the texts under consideration; (ii) in a general sense, how does the variation relate to other parameters of variation? In the course of the inquiry, I will test to what extent Yanovich’s (2013) proposal made for Alfredian prose can account for the current data.

The key point of variation is easy to illustrate. For instance, out of the 35 instances of the modal *motan* counted for the Blickling Homilies, only two are translated by *must* and a further one by *should* in Kelly's edition. A total of 22 cases are translated by using a clear expression of existential modal force (*may, can, be able to*). Interestingly, the translations of 10 examples (all of which are in the past tense) have no clear modal force in their Modern English counterparts (e.g. the following items are utilized in the translations: *to, will, -ing* and *let*). Such translation-based quick facts are not semantic arguments. However, they indicate that the modal shows variation, when viewed from the perspective of modal force of Modern English. *Motan* is clearly not an ideal exponent of a modal of possibility throughout. Furthermore, examples translated with the universal counterpart *must* exist. Consider (29) and (30).

(29) *Gif him mon þonne hyran nelle, þonne mot se mæssepreost hit wrecan,*  
*if him someone then listen not.will, then mot the mass priest it avenge*  
*swa hit her bebodan is.*  
*so it here commanded is*

But if anyone will not listen to him, the priest **must** punish him as it is here decreed.

(B.Hom.Kelly IV: 30/32)

(30) *þæt se Godes man ne sceolde be þan morgendæge þencean, þylæs þæt wære þæt he*  
*þurh þæt ænig þara goda forylde, þe he þonne þy dæge gedón mihte, ond ða wéninge,*  
*hweðer he eft þæs mergendæges gebidan **moste**.*

'The man of God should not be concerned about tomorrow, lest it should happen that he thereby put off any of the good things that he might do on that present day, and **must** then await the expectation of the next day.'

(B.Hom.Kelly XVII: 146)

It is likely that in these examples, the universal *must* is appropriate. In principle, (29) could also be a case of granting permission (to the priest) to enforce punishment, but given the command referred to, this is less likely, and the requirement for the priest to act seems to be the much more probable reading. Somewhat similar considerations may hold for (30) and make the universal an appropriate rendering in these cases.

In regards to recent research on modality in non-Indoeuropean languages, an idea that offers itself to consideration for an analysis of variation in modal force is that one may be dealing with a *bona-fide* variable-force modal. Since a recent explicit proposal exists for *motan*, as it was attested in Alfredian prose (Yanovich 2013), I will begin by discussing it and then test if it can be transferred to the texts under current attention. Traditional research characterizes *motan* as a modal which diachronically changes from possibility to necessity. Yanovich (2013) takes a substantial body of philological literature into consideration and, by analyzing Old English Alfredian (i.e. King Alfred's) prose, he offers a proposal that is distinct from the previous literature on English. This research is close in spirit to the analyses of variable-force modals as in Rullmann et al. (2008) and others for languages of the Pacific Northwest. In this paper, I will not discuss proposals for variable-force modals in other languages (see Yanovich 2013: 4.3.2 for a comparison with the ultimate argument that they do not carry over). Instead I will directly address the fresh proposal made by Yanovich.

In essence, *motan* is analyzed by Yanovich as a modal conveying a possibility with a distinctive flavor of inevitability. As shown below, the entry suggested distinguishes between a crucial presuppositional layer and the assertive contribution of *motan*. Informally, *motan*(p) asserts that p is an open possibility. More importantly, it presupposes that if p is given a chance to be actualized, it will. The latter technical part achieves the collapse of possibility and necessity. The two parts of the formalized definition are given below (Yanovich 2013: 155-157):

- (31)  $[[\text{motan}]]^{w,t}(p)$  **presupposes** that  $(\exists w': R_{\text{met}}(w, w', t) \wedge AT(p, w', [t, \infty))) \rightarrow$   
 $(\forall w': R_{\text{met}}(w, w', t) \rightarrow AT(p, w', [t, \infty)))$ , where  $p$  is a property of events;  
 $R_{\text{met}}(w, w', t)$  holds iff  $w$  and  $w'$  are identical up until time  $t$ ;  
and the interpretation of  $AT(p, w', [t, \infty))$  depends on whether  $p$  is stative or  
eventive: for a stative  $p$ ,  $AT(p, w', [t, \infty))$  holds iff there is a  $p$ -event the running time of  
which intersects with  $[t, \infty)$ , and moreover, includes  $t$ ; and for an eventive  $p$ ,  
 $AT(p, w', [t, \infty))$  iff there is a  $p$ -event whose running time is included into  $[t, \infty)$ .
- (32)  $[[\text{motan}]]^{w,t}(p)$  **asserts** that  $\exists w': R_{\text{met}}(w, w', t) \wedge AT(p, w', [t, \infty))$ ,  $R_{\text{met}}(w, w', t)$  holds  
iff  $w$  and  $w'$  are identical up until time  $t$ .

This is not the place to engage in all the details of the proposal (cf. also Condoravdi 2002 for some of the background and technicalities on which Yanovich's interesting suggestion rests). However, a number of points are relevant from a descriptive vantage point. I will organize the rest of the discussion by considering what advantages such a proposal would have over an analysis of *motan* as an existential modal, while keeping in mind that the majority of the examples in the homilies seem to have been possibility expressions.

Yanovich's (2013) conclusions integrate a range of interesting observations culled from Alfredian prose and earlier literature. However, there are reasons not to adopt it for the data I have considered. What I claim instead is that we are dealing with a modal of possibility – presumably at the beginning of a competition with a modal of necessity in the sense of Kroch (1989). The view is motivated by the fact that Yanovich's arguably strongest argument for Alfredian prose cannot be transferred to the data at hand.<sup>17</sup>

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<sup>17</sup> Yanovich lucidly points out that none of the arguments offered enforces the conclusions drawn on its own. I believe the scope restriction relative to negation observed holds. What I take to be the strongest argument, is the

First, unlike in the Alfredian prose, there is no evidence for inevitability in the homilies I have considered. On the contrary, *motan* is used in contexts that indicate quite avoidable courses of events. One example was e.g. (26) above, where – a priori – there was both a possibility to eat and not to eat (of all the fruits except for the forbidden one). Another example that brings out non-determinism even more explicitly is the following:

- (33) *Se Ælmihtiga Scyppend gesceop englas þurh his godcundan mihte,*  
the almighty creator created angels through his divine power  
*and for his micclan rihtwisnysse forgeaf him agenne cyre,*  
and for his great righteousness granted them own free-choice  
*þæt hi **moston** ðurhwunian on ecere gesældæ ðurh gehyrsumnysse,*  
that they might continue in eternal happiness through obedience  
*and mihton eac ða gesælda forleosian, na for gewyrde, ac for ungehyrsumnysse.*  
and might also that happiness lose not for destiny but for disobedience  
‘The Almighty Creator created angels by his divine power, and in his great  
righteousness gave them their own choice, that they **might continue in eternal  
happiness** through obedience, and **might also lose that happiness**, not through  
destiny, but for disobedience.’ (Ælf.Hom.Thorpe VII: 110)

The examples and the passages surrounding them make clear that Ælfric did not intend to convey a sense of inevitability in such cases involving *motan* – but rather possibility and free will.

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semantics of inevitability captured in the presupposition. We will see, however, that it cannot be upheld in the homiletic texts (Yanovich does not make the claim that his semantics should hold for all Old English texts).

A second argument is that if the ‘Alfredian’ entry is adopted for the homilies discussed here, then the consequent and the conditional, in examples such as (34), should be non-informative and partly misplaced, since the sequence ‘the devil MOT slay us’ should – according to the presuppositional semantics – express exactly that the devil will slay the relevant first person plural entity including the speaker/writer, if he can do so.

(34) *God us fett and gefrefrað, and deofol us wile ofslean, gif he **mót**;*

God us feeds and comforts and devil us will slay if he may;

‘God feeds and comforts us, and the devil will slay us if he may;’

(Ælf.Hom.Thorpe XIX: 270)

Thirdly, while I could not find clear-cut scaling effects between the modals (confirming Yanovich on this), there are cases of *motan* occurring in negative conjunction with *magan* and disjunction with *sculan*, ‘shall’:

(35) *we **ne magon ne ne motan** na furðor embe þis smeagan,*

we not may nor not must no further about this reflect

*gif we nellað us sylfe forpæran.*

if we not-want us selves lose

‘[W]e may not, and we must not, enquire further concerning this, if we would not lose ourselves.’ (coelive,+ALS\_[Christmas]:72.59 –translation from Skeat (1881: 15))

(36) *Ac ic þe bidde, þæt þu me secge, hwæðer he **sceolde oððe moste***

but I you ask that you me say whether he should or must

*forlætan þa broðro, þe he æne underfeng.*

let.go the brothers that he once accepted (cogregdH,GD\_2\_[H]:3.108.23.1080)

Finally, and somewhat more generally, there may be conceptual and practical reasons not to posit a complex entry on the basis of a dead language alone (given that e.g. the presupposition can hardly be tested in it). Instead, I suggest, on the basis of the data I have considered, that *motan* is a possibility modal in the grammar(s) that produced the homiletic texts. The mechanism by which such an entry began to widen its quantificational domain may well be plurigenetic, and presuppositions may have played a role in it as well. Nonetheless, the semantics offered cannot be endorsed for the data inspected. In the next section, I will offer an additional general argument – drawing on the connection to actuality entailments – why the very precise entry proposed by Yanovich for Alfredian prose cannot capture the semantics of *motan* for Old English.

If a universal meaning can arise from an existential, so that two meanings can compete over time, then this tendency should be observable in more cases. As mentioned, other Germanic languages such as German underwent a similar trajectory. Furthermore, what about the other elements under scrutiny in this study? I was unable to find examples of *cunnan* that could possibly be re-interpreted as universal (keeping in mind that in the majority of instances, this item lacks a modal meaning altogether). However, there was one example of *magan* in the data I considered that allows an alternative interpretation as a universal.

Consider (37), from Blickling:

(37) *Forþon hine mæg nu ælc mon oforswīpan.*

therefore him may now every man overcome

‘Every one of us **must** now overcome him.’

(B.Hom. Kelly III: 20)

Kelly’s translation suggests a universal meaning (as indicated), while Morris’ (generally more archaically rendered translation) renders the modal as *may*. A priori, the sentence could refer either to the possibility or necessity of humans to overcome evil. The particular context is that

Jesus has overcome evil, and everyone else should do so or would be able to do so, too. On one reading, a translation via *may* appears plausible, but given that the task is not presented as an easy one, the alternative reading as a(n appropriately restricted) universal cannot be excluded entirely either (i.e. that everybody should follow the example and do likewise). While such examples that are open to interpretation seem to be very sporadic with *magan*, changing the restriction of the modal quantifier contextually should not be too surprising. Additionally, two more ingredients are also likely to have been conducive to a change in modal force in the space occupied by the modals in the paradigm. On the one hand, *sculan* itself (the more standard universal in Old English) started to be used in non-deontic cases (e.g. to mark the future later on, but also potentially epistemic meanings as early as in Old English; cf. Denison 1993). The potential deontic space vacated could not be filled by *cunnan* since the item was not used deontically. On the other, *Magan* was a very frequent modal, as we have seen. Winning a competition on this territory would have been much costlier for a universal meaning. Consequently, *motan* appears to have been just the best choice from the series that was susceptible to a change in meaning. It was frequent enough with modal meanings, but not quite as broadly established as an existential as *magan*.

## **10.6 Event (non-)realizations under modals**

If the connection between aspect and modality is as strong as it is sometimes claimed to be when it comes to the realization of events in the scope of modals (cf. Haquard 2006), then this yields an additional area from which to cull more specific evidence for the categorial status of the modals in relationship to aspect. Depending on the results of the interaction in Old English, a potential argument for aspectual properties of the modals could be derived. This section hence discusses the status of event realizations under modals in the actual world, which are also known as actuality entailments. I begin by briefly introducing the generally assumed mechanics of the phenomenon in aspect-marking languages, to then make the

observation that Germanic modals can show actuality entailments even though the modals are not marked for aspect. I draw on German to illustrate this point. Subsequently, I will report on how Old English modals behaved in this respect, as well as show that they had a broader range of variation than their German cognates in this area.

In languages that mark aspect morphologically, modals with perfective morphology have been observed to induce an interpretation, which favors the realization of the event in their scope (so-called actuality entailments) in conjunction with perfective morphology on the modal. For observations, especially with respect to languages, that make use of aspectual morphology see, e.g., Bhatt (1999); Laca (2005); Haquard (2006); Soare (2008); Gergel and Cunha (2009). The basic correlation usually observed is quickly told. While a modal in the past perfective induces actuality entailments, one in the past imperfective does not. The latter fact is usually attributed to a generic operator that can be conveyed by imperfective morphology. Bhatt claims the reading implying event realization to be a reading close to ‘manage to’ in the case of ability modals. However, Haquard points out that the phenomenon is more general in the sense that it applies to more items than just the ability modals (focusing on French and Italian). I am not aware of a systematic investigation of this phenomenon in German(ic). Since e.g. German does not mark aspect overtly in the morphological paradigms of (modal) verbs (at least not as inflectional morphemes), this may perhaps seem unsurprising.

Bhatt’s work already shows that the phenomenon of actuality entailments is worth investigating beyond aspect-marking languages. It can be tied to more than morphosyntactic correlates. It can also appear, e.g., with the semi-modal *be able to* in English, which does not encode any aspectual morphology (cf. Gergel 2009b for effects in English in connection with the modality of *rather*). By this I mean, investigating it in the case of German(ic) modals may turn out to be no less interesting. While this is not the space to engage in a fuller investigation

of the phenomenon, it is important to point out that actuality entailments are easy to observe with the modals of the language. Consider the possibility modals in (38)-(39) first.<sup>18</sup>

- (38) *Tatsächlich durfte ich einmal beobachten, wie der Professor*  
indeed was.allowed.past I once observe how the professor  
*eine Dose Ölsardinen durch bloßes Nachdenken geöffnet hat.*  
*a can sardines.in.oil through sheer thinking opened has.*  
(# *aber ich habe das nicht beobachtet.*) (DWDS-Corpus; continuation added)  
'I was indeed once allowed to observe how the professor opened up a can of sardines through his sheer thinking. (...but I didn't observe that)

- (39) *Die Feuerwehr konnte den Brand unter Kontrolle bringen.*  
the fire department could the fire under control bring  
(# *sie hat es aber nicht getan*) (adapted from DWDS-Corpus; continuation added)  
(she has it but not done)  
'The fire department could bring the fire under control (but it didn't do so).'

The events under *durfte* and *konnte* above are interpreted as realized in the actual world and relevant situation, i.e. as actualized. Retracting the realization is infelicitous. Furthermore, epistemic modals – expectedly from the perspective of aspect-marking languages – do not induce actuality entailments; cf. e.g. *mochte* on an epistemic use below (which incidentally has genuine past tense reference):

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<sup>18</sup> I introduce possibility modals to stay closer to the focus set up for the Old English modals. However, a necessity modal such as *müssen*, 'must' can show the effect as well. It is less clear to what extent *sollen*, 'shall' can show such effects. It has several limitations. One of them is, for instance, that its preterite coincides with the second subjunctive form (also known as the past subjunctive or the so-called *Konjunktiv II*).

(40) *Dr. Kerner mochte so um die 50 sein.* (after M. Suter, *Der Koch*)

Dr. Kerner might around at the 50 be

‘Dr. Kerner might have been in his 50s (but he later turned out to be younger).’

What we could conclude from such examples is that non-epistemic modals in the past tend to come with actuality entailments in German.<sup>19</sup> If the correlation posited by Haquard is on the right track, then we could claim that such examples involve a silent perfective on the modal in the language.

Returning to Old English: did the language induce obligatory event realization in the scope of a modal? I suggest that eventualities in the scope of a modal could be conveyed as factual, but they could also appear as counter-to-fact. Unlike in modern Germanic languages such as English or German, the latter type of reading did not require the introduction of specific counterfactual constructions (cf. *might have*, *could have* etc. which developed in Middle English, or the counterfactual construction with reverse linearization that developed in German, i.e. the subjunctive past *hätte* + modal). Rather, I maintain that in Old English, a modal in the past by itself could convey (non-)realization, depending primarily on the context. By this I mean, Old English modals behaved differently from (Modern) German modals. Examples of actualized and counterfactual Old English modals are shown in (41)-(42) below (the latter example is repeated from the previous discussion):

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<sup>19</sup> I point out the availability of the relevant entailments, but can certainly by far not fully address the extent to which the phenomenon is available in German within this paper and leave it to further research. For instance, the form *sollte*, ‘should’ (in which the past indicative and subjunctive also coincide) is clearly less likely to induce the entailments. Similarly, the interaction e.g. with certain adverbs (such *eigentlich*, ‘actually’) and particles (e.g. the positive polarity particle *schon* ‘indeed’) can interestingly produce modalized non-epistemic readings without the entailments.

(41) *and þancode georne Gode þæt he hine geseon **moste**.*

and thanked fervently God that he him see could

‘and thanked God fervently God that he could see him’ (Ælf.Hom.Thorpe IX:136)

(42) *Sprecan he **mihte** \_, gif he wolde;*

speak he might if he wanted

‘He could have spoken, had he been willing.’ (Ælf.Hom.Thorpe IX:142)

Such possibilities are available for all three modals under consideration (as well as for others).

Relevantly, *motan* seems to be infrequently found with counterfactual meanings (a point which would confirm Yanovich’s prediction towards realization of events as a tendency in Old English). Nonetheless, counterfactual examples exist in Old English, as the following token retrieved from the YCOE corpus illustrates:

(43) *And gif Petrus **moste** þone man fulslean , þonne ne hete*

and if Peter must/may(past) the man kill then not commanded

*Crist hine behydan þa sweord.*

Christ him hide the sword

‘If Peter had been allowed to kill the man, then Christ wouldn’t have asked him to put his sword back.’ (colwstan1,+ALet\_[Wulfstan\_1]:197.267)

To summarize the section: Old English modals are not tied to actuality entailments when used in the past. Rather, they display the whole gamut of variation. The event in their scope can be presented as realized, left as open, or as counter-to-fact. This distinguishes Old English modals from Modern German, where modals can entail realization of the event, but do not convey counterfactual meanings by themselves. This means that we can assume neither

a perfective nor an imperfective silent morpheme to invariably combine with the Old English modals. This is compatible with the conclusion that the Old English modals occupy a position at the height of aspect themselves in term of structural height.

## 10.7 Concluding remarks

Functional status and readings: comparison of some facts investigated for Old English:

Table 10.1: INSERT TABLE HEADING

	<i>Cunnan/can</i>	<i>Magan/may</i>	<i>Motan/must</i>
Infinitive complements	✓ (minority pattern)	✓	✓
CP complements	–	✓	–
Licensing of VPE of the complement	✓	✓	✓
Attachment of perf. <i>ge-</i> (to the modal forms of the item)	*	*	*
Epistemic readings	–	✓	(possible)
Variation in modal force	–	(sporadic )	✓
Perspective on event realization	Open/factual/ counterfactual	Open/factual/ counterfactual	Open/factual/ counterfactual

The table above summarizes some of the observations made in the course of the investigation.

The categorial status argued for is that of a functional head in the area of aspect noting the incompatibility of the early modals with perfective prefixation. Semantically, we have observed the prevalent use of circumstantial readings. While much research has focused on the transition from deontic to epistemic, as well as circumstantial modal could give rise to epistemic readings directly, e.g. via some uncertainty contexts. In terms of modal base, complementation and readings do not correlate one-to-one. Nominal argument structure

seems independent of the modal base insofar as all modals could show non-propositional argument patterns (in their original, non-modal uses), but only *cunnan* shows a clearer lack of epistemic readings. It remains remarkable that (i) *cunnan* still had the broadest use of non-propositional arguments in the Old English inspected, and (ii) *magan* shows epistemic readings, as well as CP complements (in addition to nominal and infinitival complements – even if epistemic readings could arise in conjunction with infinitival complements as well, i.e. the CP complementation pattern was not required for the readings).

From the modals inspected, only *motan* has been a good candidate to have shown broader effects of variation in terms of modal force in Old English. Sporadic oscillations may appear in more cases, but – whether this is simply noise of the data considered and e.g. the translations or not – it cannot be too surprising if the dimension of modal force can change diachronically. Moreover, we have only considered possibility modals and such possibilities are not unique; cf. Bech (1951); van der Auwera and Plungian (1998). Regarding *motan*, I have suggested to extend the framework of grammar competition, in the sense of Kroch (1989), to the area of meaning. The competition was between the still primarily possibility reading shown in the texts I have considered and the emerging widening use of necessity. This eliminates issues that arise if one tries to import the entry suggested for different types of Old English texts by Yanovich (2013). At the same time, it is fair to state that the notorious actuation problem of language change (i.e. the question of when exactly and why a new form arises; cf. Weinreich et al. 1968) remains here, as in general. Finally, I have argued that in the data considered, actuality entailments were not enforced with *motan* and generally, event realization under Old English modals is not particularly prominent compared e.g. to Modern High German.

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