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1. Introduction

The purpose of this paper is two-fold. First of all it is intended to deepen our insight into the auxiliarization process that the English modals underwent in their development from Old to Present-day English. Since it is especially Old English that is understudied in this respect I will present two sample studies based on material from the Toronto Microfiche Concordance to Old English to clarify some of the points I want to make.

Secondly I will present a Functional Grammar view of the kind of development that we find ourselves concerned with. The indefinite article is particularly significant since modality (and the modals) are largely unexplored territority in FG. The investigation presented here will help, I hope, to clarify FG insights into modality and the modals. At the same time it does not claim to be more than an interim contribution to a vast problematic area in linguistics where FG will have to proceed to extensive further work.

The structure of this paper is as follows. In the second section we first emphasize the differences between Old English and Modern English modals in view of a delimitation of the set with which we are going to be concerned. Having decided to define our set from a modern perspective, we consider in section 3 the transformational viewpoint as formulated in Lightfoot 1979 that the Old English 'premodals'[1] were recategorized as auxiliaries in the sixteenth century; summarizing some of the arguments from an earlier paper, we argue that Lightfoot's hypothesis is much too drastic to be empirically adequate.

Section 4 presents my tentative proposals to deal with modality and the modals as formulated in Goossens 1985a and b, with a slightly modified proposal for the Present-day modals in subsection 3.3.

In section 5 we then have a look at the Old English counterparts of the present-day English modals, considering in some detail two items that present us with two extremes in the Old English spectrum of pre-modals, cunnan and sculan. The analysis is based on two samples of 200 instances each from the Toronto Microfiche Concordance. It leads to a proposal as to how the insights gathered can be formulated within FG.

The general conclusion (section 6) reviews the foregoing first at the level of the FG model, then with respect to the general question concerning the auxiliarization of the modals from Old to Present-day English.

2. The Modals: Old and Present-day English

By way of a preliminary we have to make clear what we mean by 'the modals'. The set is comparatively easy to identify in Present-day English. It contains the verbal items which are characterized by the following features.

(i) Formally: the absence of non-finite forms; and the absence of -s in the third person sg. of their so-called present.

(ii) Syntactically: by the fact that they belong to the so-called 'anomalous finites' (otherwise formulated, by the fact that they exhibit the 'NICE-properties'), i.e. that they do not need do-support in a number of syntactic environments (Negation with not, Interrogative, repetition of the 'main verb' (Code), Emphatic affirmative); also by

the fact that they combine with the 'plain' infinitive of some other verb.

(iii) Semantically we find that the items that share these syntactic and formal properties cover a broad range of modal meaning (going from facultative to deontic and epistemic modality) plus a number of other meanings, including what are usually referred to as grammatical meanings.

Turning to Old English we find that the syntactic criteria do not apply. Do-support is a later development in English; and, though the combination with infinitives is not infrequent, it is not a generalized feature (as will appear clearly from our analysis of cunnan).

Formally, the situation is rather different as well: it seems that as a rule the pre-modals belong to the so-called preterite-presents (see for example Campbell (1959, §§ 726 and 767)). But then the classes of preterite-presents contain a number of other items besides the pre-modals. Moreover, there is one pre-modal that is not a preterite-present (even if the similarity with the pre-modals is considerable), namely willan, which Campbell classifies separately among the 'anomalous' verbs (see 768 (a)).

Semantically there are considerable differences as well. The details are beyond the scope of this paper, but will partially become clear from the two case studies in section 4. For a fuller discussion the reader is referred to Visser (1969).

The gist of all this is that a diachronic study of the modals will have to specify what the exact items are that one wants to concentrate on. In our case, we take the central Modern

English modals (can, could; may, might; shall, should; will, would; must) and their predecessors in Old English (cunnan; magan; sculan; willan; motan) as our focus of attention. As already pointed out, we will concentrate on two of the Old English items only (cunnan and sculan). The selection is such, however, that it brings out some essential points about the premodals in Old English.

3. Lightfoot 1979: Premodals Recategorized as AUX

Within the framework of Transformational Grammar, Lightfoot (1979) defends a 'transparency principle', which 'requires derivations to be minimally complex and initial, underlying structures to be 'close' to their respective surface structures, and [which] must be conceived as part of the theory of grammar, and not as a component of a theory of (syntactic) change' (1979: 121). His paradigm example for the radical reanalysis that can be occasioned by this principle is the change 'whereby the grammar of sixteenth-century English developed a new syntactic category of 'modal verb'' (1979: viii).

In outline his analysis of this change boils down to the following. The pre-modals belonged to the category verb, but became increasingly exceptional until in the sixteenth century a point was reached where this could no longer be tolerated (according to the transparency principle), so that within a short time span a radical restructuring took place which recategorized them from (anomalous) full verbs to become 'modals', members of the deep structure category AUX.

In an earlier contribution (Goossens 1984), a belated publication of a paper presented at the English Historical Lin-

guistics Conference held in the University of Durham 1979, I argued that the change in question is not purely syntactic, as Lightfoot would have it.[2] In outline, I pointed out that all the factors which for Lightfoot played a part in the change have a semantic dimension:

(i) the breaking up of the present-past relationship went hand in hand with an increase in the semantic divergence between the pairs;

(ii) the fact that the pre-modals lost their capacity to take direct objects directly correlates with the loss of what I called the non-operator-like meanings which the pre-modals could have;

(iii) the loss of the non-finite forms, itself a morpho-syntactic accident, is up to a point understandable if we consider the operator-like status of the modals. Especially in their epistemic and discourse-oriented meanings (where they have scope over the rest of the predication) they do not stand in need of non-finite forms;

(iv) the quasi-modals (have to, be able to etc.), which primarily arose out of morpho-syntactic needs, also fulfil a semantic function, in that they are as a rule unambiguous markers of the non-discourse oriented/non-epistemic modal meanings and hence do not exhibit the ambiguity of the real modals;

(v) the fact that can, may and will (which at the time when do-periphrasis was in the making still had their infinitives) were excluded from do-periphrasis in its initial stages can be accounted for on semantic grounds; indeed, periphrastic do derives from a pattern where it combined with action verbs only and appears to have been resistant for a long

time to a combination with the class of verbs to which the modals belong.

A second point which I want to add here is that Lightfoot's view of a change to the category AUX is made dependent upon factors which do not in my view justify the thesis of a radical short-term shift in the course of the sixteenth century, as he would have it:

(i) Among the factors that prepare the shift to AUX there are two which continue to be operative beyond the sixteenth century. One of those is mentioned and illustrated by Lightfoot himself (Lightfoot 1979 p. 101; see also the footnote there). It is the continued combination of can with NP objects as in (1).

(1) Yet can I Musick too; but such as is beyond all Voice and Touch (1649 Lovelace, Poems (1659) l 20)

A second factor is the supposed break in tense opposition between the modals. Here present-day can and could offer counterexamples, as e.g. in (2)

(2) I could jump a lot higher when I was a boy.

(ii) The operation of a category AUX in Negative Placement and Inversion, which is crucial for the adoption of the category AUX as conceived by Transformational Grammar, was not yet a fact in the sixteenth century. The establishment of do as an obligatory dummy auxiliary in questions dates from about 1700, and it takes until the late nineteenth century before dummy do is generalised as we know it nowadays in negative sentences.[3]

In sum, interesting though Lightfoot's discussion of the development of the English (pre-)modals may be, we can neither accept that it is a primarily syntactic matter, nor that it had a culminating point leading to recategorization within a short time span in the course of the sixteenth century. This conclusion will find further confirmation from an Old English viewpoint in our sample studies of cunnan and sculan. It will, of course, have to be taken into account in an FG view of the change, for one thing because, if possible, a semantic account should take precedence over a syntactic one in FG.

4. An FG view of the Modals in Present-day English

Before proceeding to a more detailed investigation of two Old English items, I will briefly summarize the (tentative) proposals in Goossens 1985a (4.1), and their reconsideration in Goossens 1985b (4.2). The presentation will be rounded off with some additional points that I think have to be borne in mind in an FG account of the modals, whether synchronic or diachronic (4.3).

4.1

If we try to account for the way in which modals can be integrated into the construction of predications three possibilities present themselves.

(i) Predicate operators.

Predicate operators are introduced to capture the uses of the modals in the formation of the future tense (shall, will; predicate operator Fut), in the conditional tenses (should, would; pred. Op. Cond) and in specific types of subclauses corresponding to subjunctives in older stages of

the language (such as should in clauses after main verbs reporting directives or may/might in purpose clauses; pred. Op. Subju)

(ii) Predicate formation

This is an option which is available to deal with the remaining uses of the modals (i.e. especially when they express epistemic, deontic or facultative modality). It must be weighed off against (iii).

If we opt for predicate formation, we get rules like (3):

(3) Input: $\varphi(x_1)\ldots(x_n)$

Output: $\left[\begin{Bmatrix} may_{mv} \\ must_{mv} \\ etc. \end{Bmatrix} \varphi\right] (x_1)\ldots(x_n)$

- φ stands for some predicate, x_1 and x_n for its associated arguments;
- mv stands for any modal verb, to be further split into mv 1 (epistemic modality), mv 2 (deontic modality) and mv 3 (facultative modality);
- the following restrictions on the input predications serve to distinguish (up to a point) the three modality types: (a) mv1 requires as a rule a 'situation' (i.e. states or some other type of SoA if it is prefixed by a Prog(ressive), Perf(ective), or Hab(itual) predicate operator (b) mv2 and mv3 typically combine with 'events' (i.e. non-progessive, non-perfective, controlled states of affairs);
- Subject assignment for the derived predicate works in the same way as for the input predication.

(iii) Predicates in their own right

The alternative to (ii) (but again excepting the uses under (i)) is a treatment of the modals as predicates in their own right. As such, they must be <u>states</u> with <u>zero</u>-role arguments. Again we distinguish between three modality types (as mv1, mv2 and mv3).

A further distinction which suggests itself is that epistemic modals are one-place predicates and that facultative modals are two-place. Deontic modals can be taken to be one- or two-place predicates, according to whether some (personal) entity is affected by the deontic modality (i.e. is 'under obligation' or is 'granted permission') or not.

The single argument in a one-place modal, as well as the second argument of the two-place modals, is an embedded predication, which is (as a rule) a 'situation' (for epistemic modals) or an 'event' (in the case of deontic and facultative modals). Hence we get predicate frames like the following:

(4) $\text{must}_{mv\ 1}\ (x_1: \left\{\begin{array}{l}\text{situation}\\ \text{(position)}\\ \text{(process)}\end{array}\right\})\ (x_1))$

(5) $\text{may}_{mv\ 2}\ (x_1: \text{event}\ (x_1))_{\emptyset}$

(6) $\text{may}_{mv\ 2}\ (x_1)_{\emptyset}\ (x_2: \text{event}\ (x_2))_{\emptyset}$

(7) $\text{will}_{mv\ 3}\ (x_1)_{\emptyset\ (\text{or Exp.?})}\ (x_2))_{\emptyset}$

Subject assignment is to an argument in the embedded predication (one-place predicates) or to the first argument in the case of two-place modals (with the proviso that x_1 must also be an argument in the embedded predication which remains unexpressed).

4.2

In Goossens 1985b I reconsidered these proposals from two angles. First I asked the question whether the differentiation into predicates in their own right, predicate formation position and predicate operator origin can be backed up by phonological, morpho -syntactic or semantic arguments. The conclusion was that the differentiation can partly be justified semantically. On the other hand, no such differentiation can be argued on phonological or morpho-syntactic grounds (for one thing pronominalization tests do not bring out the difference between one and two-place predicates).

Secondly, I looked at the proposal from the point of view of grammaticalization, an angle which has particular relevance for the auxiliarization question in the diachronic perspective. Making use of six parameters to test grammaticalization offered by Lehmann 1982 I had to conclude that on all of these parameters we get indications that the English modals are grammaticalized to some extent (but never fully). Moreover, it appeared that the degree of grammaticalization is not systematically differentiated except for those criteria that relate to the degree of desemanticization of the modals and which I claimed to be reflected in scale (8).

(8) Facultative < Deontic < Epistemic < Futurity
Conditional
etc.

In other words, the basis for the differentiation of the modals is the same as that for grading their grammaticalization.

Looking for a grammaticalization scale within FG, we find it in a scale like (9)

(9) full predicates < predicate formation < predicate operators

This naturally leads us to consider the possibility that scale (9) can be used to capture the differences in grammaticalization in scale (8). Accordingly, I tentatively proposed that facultative and deontic modals should be dealt with as full predicates, that epistemic modals would involve predicate formation, and that modals in future and conditional tenses and in certain types of subclauses could be taken care of by means of predicate operators. In the following subsection I would like to reevaluate that proposal, repeating one argument against it which I already raised in the 1985b paper, but also adding a few other points which I had not taken into account before.

4.3.

As I have pointed out in the 1985b paper, the proposal presented in 4.2. is at least partially objectionable in its application to the Present-day English modals in that it assigns full predicate status to the facultative and the deontic modals, which according to the non-semantic grammaticalization criteria exhibit the same (partial) grammaticalization as the other uses. A particularly important counterindication is the fact that it is impossible to pronominalize the arguments we assign to the different modality types. This should not lead us to discard schema (9), however. Rather, we feel inclined to place the Present-day modals at least in the predicate formation position, whereas independent predicate status will appear to be indispensable for (at least some of) the Old English pre-modals.

Secondly, desemanticization scale (8) is in its present form

no more than a first approximation. What will eventually be needed, I think, is something that reflects the diachronic shift in individual modals much more precisely, and such a scale will therefore be a lot more complex. At present I only want to remark that scale (8) does not imply that the transition from one point (e.g. Facultative) to another non-adjacent one (e.g. Futurity) necessarily involves the intermediary steps (in our example Deontic and Epistemic). For the purposes of this paper, however, I will not go beyond this simplified version.

A third observation concerns the status of predicate formation in schema (9). It is not fully clear to me yet that the kind of intermediate position on a grammaticalization scale between full predicate and predicate operator should be captured by predicate formation. As I have pointed out in Goossens 1985a, the suggestion to deal with certain modality types as instances of predicate formation comes from Vet 1981, but as yet the exact status of predicate formation within FG has by no means been completely explored. Since nothing else appears to offer itself within FG, I will stick to labelling this intermediary position as predicate formation. At the same time I will try to give a more precise account of the kind of shift that takes place when the modals move away from their status of full predicates in our discussion of the Old English data. In doing so, we will contribute to the clarification of predicate formation within FG, if at least shifts of this kind are to come under predicate formation in the model.

5. An FG View of two Old English Modals

5.1. Introduction

The next step is to see how the Old English modals would have to figure on scale (9). More specifically we want to find out what arguments can be found to locate them on this grammaticalization scale one way or another. To that end we shall have a closer look at two items which clearly illustrate that different Old English modals (i.e. cunnan and sculan) (may) require different locations on the scale. The choice of cunnan and sculan has been determined by the fact that they appear to me to represent two extremes within the Old Englishitems with respect to grammaticalization and auxiliarization.

The two samples studied in the following two subsections were taken from the Toronto Concordance of Old English. Each contains 200 instances from Ælfric and Wulfstan (Ælfric largely predominates, only a small minority coming from Wulfstan); the samples are therefore late Old English (the Old English from around the turn of the first millennium) and come from a homiletic corpus.

5.2. Cunnan

The sample includes practically all the Ælfric and Wulfstan instances in the Toronto Concordance (only a couple which I found it impossible to interpret from the context included were left out) for the following forms of the verb:
canst (which yielded 8 instances), cunnan (11 inst.), cunne (45 inst.), cunnon (43 inst.), cuþe (68 inst.) and cuþon (25 inst.)

To answer the question whether cunnan needs to be considered as an independent predicate or not, we have to decide whether we can find proof that it has its own argument structure (with associated subjectivalization and (possibly) objectivalization),

or not. Working from the sample sentences, this meant devoting special attention to the constituents that appear as subjects and especially whatever else the verb combines with besides the subject.

(a) Subjects

The subject of cunnan is always an NP denoting an animate entity (animate entitities). The only exceptions are the 14 instances where cuþe is not a past tense but an (adjectival) past participle. Obviously in those instances the active 'object' comes in subject position, cf. (10).

(10) his gebyrd and goodnys sind gehwær cuþe (ÆCHom I (Pref) 2.1.) (his quality and goodness are known everywhere)

As is to be expected, there are as a rule no agent phrases and if the 'active subject' is represented, it comes in an adjunct form which is not typical of agents (be, fram or þurh followed by an NP representing an animate entity), but in some other form.[4]

(b) Non-subject complements

Let us first give a survey. We include the subjects in sentences with the past participle cuþe between brackets, because as was pointed out under (a), these sentences are not real passives.[5]

1. The complement is an object NP		128
(a) denoting a person	26	
(b) denoting a language	12	
(c) denoting some other 'knowable' entity	90	
(2. Sentences with cuþe as an adjectival past participle		14)
3. The complement is an infinitive (possibly with its own complements)		38
4. The complement is zero		13
5. Other complementation types		7
	TOTAL	200

Examples of the five categories in the schema are given below. Brief comment is offered where necessary, and further interpretation will be offered globally on pp. 18-19.

1. (a) (11) Canst þu ðone preost þe is gehaten Eadzige (...) (ÆLS (Swithun) 21) (Do you know the priest who is called E.)

(12) God gescæop ða hæþenan þeah hi hine ne cunnon, ... (ÆLS (Forty Soldiers) 336) (though they do not know him)

(b) (13) Bide nu æt Gode þæt ic grecisc cunne (ÆLS (Basil) 514) (Now pray to God that I may know Greek)

(c) (14) Ælc Cristen man sceal cunnan his paternoster and his credan (ÆLS (Ash Wed) 261) (note that cunnan is infinitive) (every Christian must know his our Father and his creed)

(15) Twa lif sind soðlice. þæt an we cunnon. þæt oðer ... (ÆCHom I, 15 224, 14) (One we know, the other...)

(16) ... and eow læwedum mannum is ðis genoh. ðeah ðe ge ða deopan digelnysse ðæron ne cunnon (ÆCHom II, 35 267.228) (though you do not know the deep mystery thereof)

(17) ... and swa hraðe swa heo gehyrð þære burge naman þe heo ær cuþe ... (ÆLS (Christmas) 222) (and as soon as she hears the name of the town which she knew before)

2. (For examples, see (10) and fn. 4(a), (b) and (c).

3. (18) Ne canst þu huntian buton mid nettum (ÆColl 61)

(you cannot hunt except with nets)

(19) Forgif me wisdom. þæt ic mæge þin miccle folc gewissian. and ic cunne tocnawan betwux god and yfel (ÆCHom II, 45 336.28) (Give me wisdom so that ... I can/may discern between good and evil)

(20) ... ac hi næfdon ðone lareow. ðe him cuðe þa digelan lare geopenian... (ÆCHom II 29 233.107) (... that could expound to them the secret lore)

(21) And he leop sona cunnigende his feðes hwæðer he cuþe gan (ÆLS (Peter's Chair) 32) ('and he at once leapt up trying his gait whether he could walk')

4. (22) And gecnawe se þe cunne, nu is se tima ... (WHom 5 21) ('let him know that can') (examples of this type are all interpretable as exhibiting ellipsis of an infinitive; gecnawe se þe cunne = gecnawe se þe hit gecnawan cunne);

5. I illustrate the different subtypes, all of which occur with very low frequencies, as the number of occurrences (which I give between brackets) proves.

(23) Seþe wylle wacian and wurðian Godes halgan, wacie mid stilnysse and ne wyrcan nan gehlyd, ac singe his gebedu swa he selost cunne ... (ÆLS (Pr Moses) 81) ('as skilfully as he can'; <u>cunne</u> supplemented by <u>swa</u> and <u>selost</u>, but one might also argue that this is another instance of an ellipted infinitive) (one instance)

(24) ... þa þe on stane cunnon, and gecwemlice on treowe, þæt hi on Romanisce wisan arære his cynebotl (ÆLS (Thomas) 33) ('those that know about

stone and satisfactorily about timber, so that they may build his palace after the Roman fashion'). (the on-phrase indicates the entity that the subject knows about; 3 instances)

(25) Cristene men ne motan healdan nu ȝa ealdan. æ. lichamlice. ac him gedafenaȝ þæt hi cunnon hwæt heo gaslice getacnige (ÆCHom II, 15 151.36) ('... but it befits them that they know what it means spiritually') (the complement is a clause introduced by the 'conjunctive' hwæt; there is another example like it with hu as a conjunctive)

(26) þa ȝe bet cunnon and magon. sceolon gyman oȝra manna ... (ÆCHom II, 15 159.311) ('those that know and can [do] better must direct other men') (with an adverbial comparative; one instance)

The crucial point in these data is the predominance of instances with NP objects (64%, not including the cases with the adjectival past participle cupe in 2. of the table, which for that matter, though no real passives, have subjects that are of the same type as the NP objects in 1.). Note also that those NP objects can be pronominalized, as is illustrated in (12) and (17).

In all these sentences cunnan is clearly an independent two-place predicate. The SoA-type is state. According to Dik (1981) it should take two arguments, but it seems preferable (also to Dik, personal communication) to differentiate the two roles. My (tentative) proposal is Exp(eriencer) for x_1 and ø for x_2. The selection restriction for the first argument is that it must be [+human]; in a more refined formulation, employing categorizations that as such have not yet been introduced into FG, we can

describe the first argument as [+ cognizant], the second as some 'knowable entity',[6] in line with the fact that cunnan in all these instances is equivalent to MoE know. Notice also that this cunnan 'know' is frequently recorded in the infinitive (a non-finite form) in the Toronto Corpus as a whole (and in the Ælfric and Wulfstan entries in particular).

What to think of the remaining categories in the table? Those under 5., if anything, confirm the independent predicate status of the verb, possibly with reduction of two arguments to one,[7] but, of course, their number is too restricted to have anything but a marginal value in the characterization of the verb. More important are those under 3 and 4. These can be grouped together, because the instances under 4., as we have already pointed out, can all be interpreted as showing ellipsis of an infinitive. This would give us a portion of nearly 25% of our sample.

Among the infinitives combining with cunnan there is a clear predominance of predicates like tocnawan, asmeagan ('consider, investigate, think'), understandan (which are also the verbs that are typically ellipted). Besides there are also action predicates like huntian, temian ('tame'), secgan etc., all of which have an ingredient of (intellectual) insight. In all these instances cunnan is translatable as 'know how to' as well as 'can' or 'be able to'. In fact there is only one case where the 'ability' sense practically completely ousts the 'know how to' meaning, namely (21).

With respect to the independent predicate status, we can continue to consider cunnan as a two-place predicate with the infinitive, a nominal verb form, as the second argument.[8]

Alternatively we can look upon the combination of cunnan with infinitives as a first step away from the status of independent predicate: indeed, when cunnan combines with another predicate which brings along its own arguments, it shares its first argument with this combining predicate, which, moreover, imposes its additional argument structure (if it is two- or more-place) on the combination.

To capture the foregoing in FG terms we propose the following basic (independent) predicate structure for cunnan:

(27) $\text{Cunnan}_{v}\ (x_1\text{: human } (x_1))_{Exp}\ (x_2)_{\emptyset}$

- Further refinements for x_1 would be to restrict it to 'cognizant' entities, for x_2 that it must be some 'knowable' ('cognizable') entity
- Unmarked subjectivalization and objectivalization turns the first argument into the subject and the second into object.

If we decide to bring the combinations with infinitives in line with structure (27) we could adapt it as (28).

(28) $\text{cunnan}_{v}\ (x_1\text{: human } (x_1))_{Exp}$
$(x_2\text{: } [\varphi \ldots (x_1) \ldots](x_2))_{\emptyset}$

(28) receives the following specifications:

- x_1 is 'cognizant' and/or 'potent'
- x_2 is some predication whose first argument is indentical with the x_1 of cunnan
- x_2 is still objectivalized but takes the infinitival form of the predicate in question.

Alternatively, we can set apart the combinations of infinitives with cunnan as resulting from predicate formation in the following fashion:

(29) Input: $\varphi(x_1)\ldots(x_n)$

Output: cunnan $\varphi(x_1)\ldots(x_n)$

Where φ primarily stands for the class of predicates that involve some degree of 'cognizance' (understandan, asmeagan, cnawan and the like; but also action predicates involving 'cognizance'); accordingly x_1, which is to be subjectivalized, is, to some extent at least, 'cognizant'.

Examples like (21) would require us to relax the restriction of to 'cognizance' and of x_1 to 'cognizant': x_1 becomes merely 'potent'.

This second solution would account for a first step of cunnan towards grammaticalization. As the foregoing discussion should have made clear, I would hesitate as to whether anything more than the beginnings of this stage should be claimed for cunnan.

5.3. Sculan

The sculan sample can be said to be made up of two layers of 100, both in the great majority instances from Ælfric, again supplemented by a few from Wulfstan. The distribution is as follows: sceal (70 instances: 50 Ælfric, 20 Wulfstan), scealt (30 instances, all Ælfric); sceolde (50 inst.: 40 Ælfric, 10 Wulfstan), sceoldon (40 inst., all Ælfric), sceolden (10 inst., all Ælfric). Note that this represents only a selection (and obviously an arbitrary one) from the relevant material for the items in question in the Toronto Concordance. The two layers then are sceal/scealt on the one hand and sceold- on the other. As will be seen below, there are considerable differences between the two.

A first observation which holds for the whole 200-sample is that sculan is combined with an infinitive(phrase). There are only seven exceptions. The first of these is (30a), where we get a contracted relative as a direct object, which, however, anticipates the following infinitives.

(30a) ... þæt is þæt he sceal. ȝa flæslican lustas gewyldan: and his lichaman to godes ȝeowdome symle gebigean (ÆCHom I, 12 188.24) ('this is what he has to (do), control the lusts of the flesh ...')

There are three that are in combination with a directional constituent, with an 'ellipted infinitive' indicating movement (e.g. gan); an instance of this type is (38) (see p. 25). Finally, there are another three cases with an ellipted infinitive in a clause of comparison introduced by swa (swa). For an instance, see (61).

Notice also that we often find non-animate subjects for sceal/scealt/sceold- (22 in the whole sample), which we illustrate in (30b), (30c) and (30d)

(30b) He sæde þæt æfter þisum fæce gewurȝan sceall swa egeslic tima swa æfre næs syȝȝan þeos woruld gewearȝ (WHom 6 197) ('He said that after this period such a dreadful time will come about ...')

(30c) Ne cwæȝ na se symeon þæt cristes swurd sceolde þurhgan marian lichoman: ac hyre saule (ÆCHom I, 9 146.15) ('Simeon did not say that Christ's sword would pierce through Mary's body, but...')

(30d) ... And sceal beon gebodod on minum naman dædbot. and synna forgifenyss: on eallum þeodum (ÆCHom I, 15 220.20) ('and there will be announced

repentance and forgiving of sins in my name to all nations')

A second point, obviously not derivable from the sample, is that sculan (practically) does not occur in its non-finite forms in the whole Toronto Corpus. In the Ælfric and Wulfstan samples there is not a single instance of sculan as infinitive, of a past participle of any form, or of a present participle. A glance at the rest of the material revealed only one doubtful instance of an infinitive.[9] The conclusion then is that in this respect sculan is not a full verb (any more) in OE.

Sceal/scealt

For sceal/scealt we have looked at the distribution of the (semantic) opposition between a necessity or obligation meaning and the expression of futurity. We illustrate this in the following examples; (31) and (32) are instances of N(ecessity), (33) and (34) of F(uturity).

(31) Swa sceal don se gastlica sacerd. he sceal gerihtlæcan godes folc and þone ascyrian. and amansumian fram cristenum mannum þe swa hreoflig biþ on manfullum þeawum þæt he oþre mid his yfelnysse besmit (ÆCHom I, 8 124.27) ('So a holy priest must do. He must lead God's people ...') (N: obligation)

(32) Hit is awriten on þære ealdan æ. þæt nan mann ne sceal hine gebiddan to nanum deofelgylde. ne to nanum þinge buton gode anum ... (ÆCHom I, 11 174.4) ('It is written in the old law that no one must worship any image of the devil ...') (N: negative obligation or prohibition)

(33) ... and he ahof ðа eadmodan: swa swa crist sylf cwæð on his godspelle: ælc þæra þe hine onhæfð. he sceal beon geeaðmet (ÆCHom I, 1 202.29) (F; 'each of them who extols himself, will be humiliated')

(34) þus wæs gewriten be me. þæt ic þrowian scolde: and arisan of deaðe on ðam þriddan dæge: And sceal beon gebodod on minum naman dædbot. and synna forgifenyss: on eallum þeodum (ÆCHom I, 15 220.20) (F: 'and in my name penitence and forgiving of sins will be proclaimed to all people')

Obviously, if we want to assess the degree of grammaticalization of sceal/scealt it is important to see to what extent it loses its Necessity meaning and becomes a signal to express (mere) Futurity. In my sample it appears that the great majority of instances present us with a mixture of N and F. The distribution, which, of course, can only established somewhat tentatively, is as follows:

N 16	F 16	N/F 68

We conclude this subsection with a few illustrations of this mixed category.

(35) Crist ableow þone halgan gast ofer þam apostolan þa gyt wuniende on eorðan. for þære getacnunge. þæt ælc cristen mann sceal lufian his nehstan swa swa hyne sylfne (ÆC Hom I, 16 232.10) (N/F, N predominates '... as a sign thereof that each Christian man shall love his neighbour as himself')

(36) þonne færlice gewit he of þyssere woruld nacod and

forscyldgod: synna ana mid him ferigende. for ðam þe he sceal ece wite þrowian (ÆC Hom I, 4 66.12) (N/F 'then he suddenly departs from this world, naked and guilty: taking only sins with him; therefore he will/shall suffer eternal punishment')

(37) heo is ece. and næfre ne geendaþ. ðeah se lichoma geendige. þe sceal eft þurh godes mihte arisan to ecere wununge (ÆCHom I, 1 20.4) (N/F, F predominates:' ... though the body may end, which afterwards through God's might will(shall) arise to eternal dwelling (life)').

Sceold-

Turning to the sceolde/sceoldon/sceolden sample, we concentrate on two parameters that can be assumed to give indications about grammaticalization. The first, (a), is to what extent sceold- is still used as an indicative (to mark past necessity/ obligation); the second, (b), concerns the clause types in which they occur, with the additional question whether they act as a grammatical signal in any of the clause types in which they are used.

(a) Indicative or non-indicative[10]

A first important fact about sceolde/sceoldon/sceolden is that in our sample they almost exclusively occur in contexts where they have to be interpreted as non-indicatives. Notice that formally sceolde is both indicative and subjunctive; that sceoldon (the predominating plural form in our sample) is (at least in 'standard Old English') an indicative; and that sceolden is the standard subjunctive form. As is well-known, however, both -on and -en can be assumed to stand for [ən] in late Old English;

moreover, spellings in unstressed syllables tend to get confused.[11]

If we take factual contexts to require the indicative and non-factual contexts of various sorts to necessitate the use of the subjunctive or at least a non-indicative, we find the following distribution (the total of this subsample is 100):

Indicative	Non-indicative	?
3	96	1

For exempliflication of the non-indicatives we refer to the instances quoted under (b), which are all of this type. The three indicatives are (38), (39) and (40); the undecidable case is (41).

(38) god þa gegearcode ǽnne hwæl. and he forswealh þone witegan and abær hyne to þam lande. þe he to sceolde and hine þær ut aspaw (ÆCHom I, 18 246.12) ('... and [it] carried him to the land to which he had to [go] and spewed him out (up) there')

(39) On ðam getelde hi sceoldon þa godcundan lac symle geoffrian. for ðan ðe hi ne mihton on ðære fare cyrce aræran (ÆC Hom II, 12.1 114.160) ('In that tent they always had to sacrifice the divine offerings, because ...')

(40) Seo ealde æ bebead þæt gehwilc reoflig man gecome to þam sacerde: and se sacerd sceolde hine fram mannum ascyrian gif he soðlice hreoflig wære (ÆC Hom I, 8 124.5) ('... and the priest had to separate him from people if he were really leprous')

(41) Hit wæs gewunelic þæt ða magas sceoldon þam cilde naman gescyppan on þam eahtoþan dæge mid þære

ymbsnidenysse: ac hi ne dorston nænne oþerne naman criste gescyppan þonne ... (ÆCHom I, 6 94.22) ('It was the custom/the rule that the parents had to/should assign//assigned the child a name on the ...')

Notice that in the indicative instances sceold- retains its basic Necessity (obligational) sense. In (38) we get a combination with a directional constituent and an 'ellipted infinitive';[12] (41) can be interpreted in three ways: as a factual obligation (paraphrasable as 'it was the custom that the parents had to assign the child a name'), as a non-factual obligation (= 'it was the rule that the parents should ...'), as a grammatical marker of the subject clause after an expression of the type Hit wæs gewunelic (where Present-day English would use zero or would). The ultimate decision (if there is one) would have to rely on more elaborate investigation of constructions of this type.

The exceptionality with which sceold- functions as the past tense equivalent of obligational sceal/scealt/sculon indicates that, more than the latter, sceold- was used in functions which can (with varying degrees) be described als grammaticalized. To find out more precisely what this grammaticalization amounts to, we now turn to an analysis of the different clause types in which sceold- occurs.

(b) Clause types

Let us first survey the different clause types.

1. Main clauses		10
2. Relative clauses		5
3. Object clauses 48		
a. after verbs of 'will'	20	
b. after (other) verbs of communication	25	
c. after verbs of opinion	1	
d. after verbs of 'fear'	2	
4. Content clauses after nominal heads		10

a. after a noun expressing volition or command	6	
b. after other nouns	4	
5. Subject clauses		2
6. Clauses of consequence / purpose		20
7. Clauses of comparison		4
8. Other		1
TOTAL sample sceolde/sceoldon/sceolden		100

Next we consider each of these categories in some detail, giving at least one example and adding a brief discussion. We restrict ourselves to what we regard as relevant to the question of grammaticalization.

1. Main clauses (10 occurrences)

As a rule sceold- is paraphrasable as should/ought to. It occurs in combination with a hypothetical conditional subclause in 4 instances, e.g. (42); this is not the case in the other 4 instances, e.g. (43).

(42) Gyf hit ðonne mædencild wære: þonne sceolde heo hi forhæbban fram ingange godes huses hundeahtatig daga ... (ÆCHom I, 9 134.18) ('If it were a female child, then she should abstain (herself) from ...')

(43) æfter godes gesetnysse ealle cristene men sceoldon beon swa geðwære. swilce hit an man wære. for þi wa ðam men ðe ða annysse tobreco ('according to God's decree all Christian men should be so united as if it were one man, ...')

The other two cases are two indicatives, viz. (39) and (40).

2. Relative clauses (5 occ.)

Again most instances are paraphrasable as (obligational) should (e.g. 44), bordering on was to in (45).

(44) Hit getimaþ forwel oft þæt ða þwyran becumaþ to

micclum hade on godes gelaðunge. and hi þonne gastlice ofsleað mid heorå yfelnysse heora underþeoddan: þa ðe hi sceoldon mid heora benum geliffæstan ... (ÆCHom I, 28 412.20) ('those that they should endow with their services')

(45) ... þa gelamp hit þa ða hi on þære byrig betleem wicodon. þæt hire tima wæs gefylled þæt hio cynnan sceolde: ... (ÆCHom I, 2 30.5) ('that her time was fulfilled that she should/was to give birth')

There is one instance with an indicative past tense, see (38) above.

3. Object Clauses (48 occ.)

The table shows that this is a diversified category with two high frequency (sub)categories and two which are marginal.

3a After verbs of 'will' (20 occ.)

In this category sceolde/sceoldon/sceolden occur as a rule in þæt-clauses (there are four instances of hu-clauses, exemplified by (48)). Sceold- as it were echoes the obligational meaning in main verbs like hatan, (ge)neodan, bebeodan, gewissian and at the same time underscores the non-factual character of the predication in the subclause. As such it gets dissociated from the basic meaning of sculan and becomes a marker of a specific type of subclause. Note that the distinction with the following category, though not problematic on the whole, is not always as clearcut as one might wish, witness (49).

The following instances illustrate the category.

(46) þa ða Ioseph ðis smeade: ða com him to godes engel. and bebead him ðæt he sceolde habban gimene æigðer

ge ðære meder. ge ðæs cildes ... (ÆCHom I, 13 196.17) ('...and ordered him that he should take care both of the mother and the child...')

(47) Crist wolde æt manega witegan. and eac ða hæðenan sceoldon bodian his tocyme. ... (ÆCHom II, 1 10.267) ('Christ wanted that many wise men and also the heathens should proclaim his coming')

(48) &of ðam cynne æfter ðære wisan syððan wurdan manege, oð ðæt Crist eft astealde on oðre wisan hu bisceophad sceolde of manegan cynrynan syððan aspringan, swa swa ... (W Hom 17 21) ('... until Christ ordained in another way how bishophood should originate from a lot of families thereafter ...')

(49) ... swa swa Crist lærde ðæt man don sceolde ... (W Hom 17 65) ('as Christ taught that man should do'; if we take <u>læran</u> as 'imperative teaching' we have to classify it here)

3b. <u>After (other) verbs of communication</u> (25 occ.)

Whereas in 3a we considered subclauses after verbs reporting directives (and verbs of volition), we now turn to those after verbs rendering other speech act types, e.g. <u>cweðan</u>, <u>secgan</u>, 'say', <u>acsian</u>, <u>biddan</u> 'ask', <u>behatan</u> 'promise'. The clause is introduced by <u>ðæt</u> (or by some interrogative word after verbs reporting questions).

Notice that <u>sceold-</u> is paraphrasable as either <u>would/was</u>, <u>were to</u>, as in (50) and (51) (there are 14 instances of this type), or as <u>should</u> (10 instances in all, exemplified by (52) and (53)).

(50) God us forbead þæs treowes wæstm and cwæð. þæt

we sceoldon deaðe sweltan gif we his onbyrigdon (ÆC Hom I, 1 16.35) ('... and said that we would perish by death if we ate from it')

(51) And ða agunnan hi hine eft acsian dihlice hwænne þæt geweorðan sceolde, eac ...) (W Hom 2 30) ('and then they began to ask him secretly when that would/was to happen,...')

(52) þa men ðe beforan þæm hælende eodon ciddon ongean þone blindan ðæt he suwian sceolde (ÆCHom I, 10 152.17) ('the men that were walking in front of the Lord chided against the blind man that he should keep silent'; notice that ciddon acquires a directive meaning component through this occurrence of sceolde in the subclause)

(53) ðartogeanes gehælde petrus blinde and healte. and deofelseoce. and ða deadan arærde and cwæð to ðam folce þæt hi sceoldon forfleon þæs deofles drycræft ... (ÆCHom I, 26 376.6) ('... and said to (the) people that they should fly away from the witchcraft of the devil') (again the whole acquires a directive overtone)

Notice that the first group reflects the F and N/F uses of sceal/scealt discussed on p. 23-4): those in the second group reflect the N uses, but at the same time the combination reporting verb + subclause with sceold- exhibits a shift to directive.

In both groups there is an element of desemanticization and grammaticalization of sceold-, either as a signal of (or approaching) past future or as a marker of a clause which acquires a directive overtone.

3c. After a verb of opinion (1 occ.)

The instance is (54).

(54) Hwæt ðа fyrmestan þe on ærnemerigen comon wendon þa þæt hi maran mede onfon sceoldon. ðа underfengon hi ænlipige penegas. swa swa ðа oðre (ÆCHom II, 5 42.21) (And see, the first who (had come) at dawn thought that they would get more pay ...') (sceoldon expresses a past future)

3d. After verbs of fear (2 occ.)

We give one instance, (55).

(55) ðа com crist on þam timan þe seo cynelice mæg ateorode. and se ælfremeda herodes þæs rices geweold: þa weard he micclum afyrht. and anðracode þæt his rice feallen sceolde. þurh tocyme þæs soð-an cyninges (ÆCHom I, 5 82.3) ('...then he became much afraid and feared that his kingdom would/ might fall by the coming of the true king')

Sceold- is a marker of past futurity (and at the same time a grammatical marker of a subclause after a main verb expressing fear).

4. Content clauses after nominal heads (10 occ.)

4a. After a noun expressing volition or command (6 occ.)

These parallel category 3a; the head nouns are æ 'law', regol 'rule', hæs 'command' and the like. We give one instance:

(56) Feawa manna crist sylf gefullode, ac he forgeaf ðone anweald his apostolon. and eallum gehadedum mannum ðæt hi sceoldon fullian mid godes fulluhte. on naman ðære halgan ðrynnysse ... (ÆCHom II, 3

25.214) (onweald = 'power/command')

4b. After other noun heads (40 occ.)

In three out of the four instances, sceold- is paraphrasable by should (e.g. (57)); the other one, (58), is another instance of a 'past future'.

(57) ... and andwyrde him ȝurh ȝa anlicnysse. ȝæt hi him heora lac offrian sceoldon ... (ÆCHom I, 31 454.21) ('and [he] answered him through the parable that they should offer him their sacrifices')

(58) ... ȝa com him andswaru fram ȝam halgan gaste: ȝæt he ne sceolde deaȝes onbyrian ær ȝan ȝe he crist gesawe (ÆCHom I, 9 136.8) ('then came to him an answer from the Holy Ghost that he would not taste death before ...')

5. Subject clauses (2 occ.)

We have already had an instance of this low frequency category, viz. (40), where perhaps sceolde is a grammatical marker of the subclause in this context. The other instance has sceoldon paraphrasable as should.

6. Clauses of consequence/purpose (20 occ.)

This is the second most important category. Clearly sceold- is used to mark this type of adverbial clause. We give two instances; notice that consequence and purpose may be difficult to keep apart.

(59) Symon ȝa ȝa he ȝam folce ætwunden wæs. getigde ænne ormætne ryȝȝan innon ȝam gete ȝær petrus in hæfde ȝæt he færlice hine abitan sceolde (ÆCHom I,

26 372.33) ('... tied [up] an immense dog inside the gate in which [he] kept Peter so that it (he) might bite him fiercely')

(60) Ealle ȝa ȝing ȝe crist dyde for us, ealle hi wæron ær gefyrn gewitegode. ȝæt men sceoldon gelyfan ȝæt he is soȝfæst ... (ÆCHom II, 1 6.121) ('... all these were before prophesied so that men should/ might believe that he is trustworthy ...')

7. Clauses of comparison (4 occ.)

These are introduced by swa (swa) (3 times) or onne (after a comparative). The paraphrase is always should, as in (61).

(61) And se ȝe nele Godes bodan hyran mid rihte ne godcundre lare ne gyman swa he sceolde, he ... (WHom 17 47) ('And he that will not duly listen to God's messengers nor observe divine lore as he should, ...': sceolde is obligational and non-factual).

8. Others

The remaining instance is (62).

(62) Crist wolde ȝæt ... ȝæt mancynn wære ȝæs ȝe geleaffulre. and ȝæs ȝe gewisre on hwæne hi sceoldon gelyfan ... (ÆCHom II, 1 10.267) ('... so that man would be the more believing and the more certain as to whom they should believe [in]'; this is a clause introduced by a conjunctive dependent on a comparative adjective; sceoldon is obligational non-factual).

Since our interest is in the degree of grammaticalization that sceold- exhibits in this sample, we will summarize the foregoing

analysis from that point of view. We distinguish three 'degrees' of grammaticalization.

(a) Not grammaticalized: these are the instances where sceold- is the factual/indicative past tense equivalent of obligational sceal(t)/sculon. There are only three instances of this sort.

(b) Partially grammaticalized: Here we group the instances where sceold- retains its obligational sense, but in a non-factual context (it is equivalent to Present-day E. should/ought). There are 31 cases like this (8 in main clauses, 4 in relative clauses, 10 in object clauses after verbs of communication, 3 after head nouns (category 4b), 4 in clauses of comparison, one instance in a subj. clause, and the single instance in category 8).

(c) Grammaticalized: Here we get the remaining 66 cases, for which we can distinguish the following types:

- in object clauses after verbs of will or in content clauses after noun heads expressing an idea of will/command (20 + 6 = 26 inst.)
- in clauses of purpose or consequence (20 inst.)
- to express a 'past future' (once in a relative clause, 14 inst. in object clauses after 'other' verbs of communication, once after a verb of opinion, once after a noun head of the category 4b = 17 inst.)
- the two instances after verbs of fear, and the subject clause after hit is gewunelic (the latter instance might also be assigned to category (b) or even (a)).

What can we conclude about sculan as a whole?

(i) There are two general indications that it has lost its

status as an independent predicate already in (1)OE. One is the loss of its non-finite forms. The other is the fact that it combines as a rule with an infinitive (phrase) which imposes its argument structure on the resulting combination sculan+infinitive (in the few instances where there is no infinitive, the infinitive is anticipated by a pronoun or ellipted: see p. 22.

(ii) There are arguments for claiming that sceal/scealt/sculan are to be considered separately from sceold-. As appeared from our analysis, sceold- only exceptionally functions as the past tense of sceal/scealt/sculon. Moreover, the degree of grammaticalization is markedly higher for sceold- than for sceal/scealt/sculon. We therefore draw separate conclusions for the two.

(a) sceal/scealt (and there is little doubt that the plural exhibits a similar pattern) predominantly shows in its semantics a mixture of futurity meaning and the original necessity meaning (68% in our sample), which we could regard as weak grammaticalization. As it happened, the sample showed an equal destribution of the (fully grammaticalized) expression of futurity (16%) and the fully obligational (necessity) sense (also 16%).

(b) For sceold- the fully grammaticalized uses predominate (66%). The rest of the sample shows partial grammaticalization, if only because the instances are in a non-factual context (17%), with the exception of no more than 3 cases where sceold- retains its original meaning.

How can we account for the intricacies of sculan in FG? It seems no longer justifiable (at least for my late OE sample) to assign

to sculan the status of an independent predicate. It necessarily combines with an infinitive (which occasionally can be ellipted or anticipated by a pronoun); the argument structure of the combination is completely determined by that of the combining infinitive (notice that, unlike with cunnan, this also results in non-human subjects for the combination, see p. 22. On the other hand, the opposition between non-grammaticalized uses argues for a differentiated treatment. Since we have discarded the full predicate possibility, this amounts to a treatment in terms of predicate formation as well as in terms of predicate operators.

Given the present state of the art in FG our proposals are tentative; we give them in main outline only.

(i) As long as sculan retains (some of) its obligational meaning we may derive combinations with it by means of predicate formation rule (63)

(63) Input: $\varphi(x_1)\ldots(x_n)$

Output: sculan $\varphi(x_1)\ldots(x_n)$

Given that sculan has (some of) its obligational meaning we would expect restriction to what we have called 'events' in section 4, but this is only a strong tendency.

Subject assignment is to one of the arguments of (it is not restricted to x_1, cp. 30(d), where the infinitive is passivized). Obviously, it will have to be noted in the lexicon that sculan can only occur in a finite form.

(ii) For those instances where the obligational meaning is no longer present and which we have called fully grammaticalized, we propose an origin as predicate operators. The plural implies that we have to consider at least two

different predicate operators, namely Fut and Subju. Fut would trigger off the 'pure future' uses, with the proviso that Fut has other realisations in OE besides sculan. Subju is even primarily realised in a different way, namely by subjunctive marking on the verb; sceold- is an alternative realisation for the subjunctive in a number of specific subclauses, esp. clauses of consequence/purpose and clauses dependent on a predicate expressing an idea of will/ command.

Instances of the so-called past future would have to be taken care of by two combined predicate operators (Past and Fut).

(iii) Some of the possibilities uncovered in the sample analysis could be dealt with as blends between predicate formation and a construction of the predication by means of predicate operators:[13]

- the N/F cases, which predominate for sceal/scealt, present us with the blend between predicate formation and the Fut operator
- the non-factual obligational instances with sceold- can be treated as combinations of predicate formation and the Subju operator.

5.4. Conclusion: cunnan and sculan

The aim of this section has been to give an idea of how the Old English modals would figure on scale (9) in section 4. The approach chosen was to look at the case of cunnan and sculan on the basis of two late Old English samples.

It appeared that there are arguments to place cunnan and sculan in rather different positions. Cunnan is still pre-

dominantly an independent predicate with the beginnings of a shift to a usage which would come under predicate formation. Sculan is no longer a full predicate, but partially belongs under predicate formation, partially under predicate operator, with certain uses presenting us with blends between the two. Differentiating between sceal/scealt/sculon (represented by sceal) and sceold-, the following table summarizes the proposals introduced in this section:

FULL PREDICATE	PRED.FORM.	PRED.OPER
cunnan (cunnan)	(sceal) ((sceold-))	sceal (sceold-) (sceal) sceolde

(the unbracketed positions indicate the predominant use; positioning on an intersecting line points to a blend).

6. General Conclusion

6.1. Conclusions with respect to FG

(i) Our analysis of cunnan and sculan has proved, I think, the use of grammaticalization scale (9) within FG. It has also become clear that a three-point scale is not refined enough. Opting for blend positions between full predicate and predicate formation on the one hand, and between predicate formation and predicate operator on the other, gives us two additional points. Further research may reveal other and/or additional refinements.

(ii) When deciding about the choice between independent predicate status or predicate formation for a modal verb a crucial argument appeared to be whether the modal verb

brings along its own argument structure (in which case we take it to be an independent predicate) or whether a combining predicate, which in the case of the (pre)modals results in an infinitive (phrase), imposes its argument structure on the whole combination (this gives rise to a treatment under predicate formation). Cunnan and sculan showed up clear differences in this respect.

(iii) To assign predicate operator status to a given modal it should, in our view, in addition to the fact that it does not have an argument structure of its own, be used in specific grammatical functions, such as the expression of tense, the marking of certain types of subclauses and the like. What such grammatical functions may be is a matter for further investigation within FG.

(iv) Although I have not yet made this explicit, the reader may have inferred that I would view the shift of cunnan to can and of sceal/sceolde to shall and should on grammaticalization scale (9) as follows:

FULL PREDICATE	PRED.FORM.	PRED.OPER.
cunnan (cunnan) (can)	can	
	(sceal) sceal (shall)	(sceal) shall
	((sceold-)) (sceold-) (should)	sceold- should

This gives us only part of the picture, of course. For instance, it does not indicate that shall is very much regressive in Present-day English, especially in American English. Moreover, and more importantly, it does not reveal

to what extent a given predicate operator is expressible by a given modal (in Old English morphological marking on the verb is a comparatively much more important correlate of Subju than in Present-day English, whereas should is comparatively more important than sceold-).

(v) A final point with respect to grammaticalization scale (9) is that it appears to correlate with a decreasing specificity in the (semantic) combinatorial possibilities for the item that can be shown to develop from independent predicate to the other end of the scale.

We noted for cunnan that it had a specific argument structure in Old English in which we could characterize the first argument as cognizant and the second as a knowable entity. The transition to predicate formation involves replacement of the second argument by some SoA, originally one that involves a cognizant dimension, the next step being (as for MoE can) that this cognizant element no longer restricts the combining SoA.

Similarly for sceal the initial position in the schema involves a SoA which can be characterized as an 'event'. As we move along to a function as predicate operator that restriction is removed. A similar point can, of course, be made about the shift from ((sceold-)) to present-day English should.

6.2. Grammaticalization and Auxiliarization of the English Modals

In addition to the conclusions in 6.1., I would like to point out the following:

(i) The grammaticalization of the English modals (and hence their auxiliarization) is already a fact in Old English: to

some extent for sceal and predominantly for sceold-.

(ii) In a discussion of auxiliarization of the English Modals we must consider the different items individually, not globally. Even items that could be thought of as belonging to the same paradigm set may need to be investigated separately, as from the instance of sceal/sceold- /shall/should showed.

(iii) Cunnan and sculan present us with two extremes as regards grammaticalization in Old English. This is also the case with can and shall/should in Present-day English, with the proviso of a further shift on the grammaticalization scale away from the full predicate position for both items.

(iv) The directionality of the changes on the grammaticalization scale seems to be restricted to increased grammaticalization. A full detailed investigation of all the modals will still have to confirm this, but I am rather confident that this will be the case.

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Notes

1. This is Lightfoot's term for the ancestors of the Present-day English modals (see Lightfoot 1979: 101).

2. Both in his 1974 article, which was the basis for my Durham paper, and in his 1979 book (see p. 153).

3. See i.a. Closs Traugott (1972: 199) and Visser (1969), where ample exemplification is to be found

4. We list the relevant examples with a few words of comment:

   (a) Ac uton don swa swa god tæhte: ðæt ure goodan weorc beon. on ða [sic] wison mannum cuðe (ÆCHom I, ll 130.23) (on ða [R ðæm] wison mannum is a prepositional qualification of the adj. cuðe rather than an agent phrase)

   (b) and ge magon ðe cuðlicor to him clipian gif heora lifes drohtnunga eow ðurh lareowa bodunge cuðe beoð (ÆCHom I, 37 556.25) ('if the conditions of their life are known to you through the message of teachers')

   (c) ðær beoð cuðe ure ealra dæda eallum ðam werodum ... (ÆLS (Ash Wed) 172) ('There/then are known the deeds of all of us to all multitudes')

5. The brackets indicate that these instances do not really figure on a par with the others; the inclusion is based on the idea that what we get as the subject in real passive sentences corresponds to the (object) complements in their active counterpart.

6. Indeed, also the object NPs denoting persons and languages have to be interpreted with emphasis on their 'knowable' properties.

7. This could be captured in FG as an instance of predicate formation. In this case, however, predicate formation would not signal any increased grammaticalization.

8. Note that Old English has no gerund and that the (nominal) inflected infinitive only functions after prepositions taking a dative.

9. The instance is Ben RGl 26: [Haec complens expectat nec cotidie his suis sanctis monitis factis nos respondere debere] is gefyllende anbidia mid dædum we sculan. I suspect that sculan glosses debere, but I have not been able to check the edition referred to.

10. Non-indicative means as a rule subjunctive, although there are a considerable number of non-indicatives that are semantically different from the kind of grammatical meaning normally associated with 'subjunctive'. Hence the non-committal term 'non-indicative'.

11. See i.a. Campbell 1959, 379 and 735 (e) and (g).

12. See also 5.3.2.

13. Note that the acceptance of blends would be/is an innovation within FG.

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