

ENGLISH MODALS: EVIDENCE FOR A NEOPARAMETRIC THEORY OF PHRASE STRUCTURE

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1. Theoretical background

Since the early days of generative grammar, and more pointedly since the advent of the Principles-and-Parameters approach (Chomsky 1981), an important question in syntactic theory has been how much syntactic structures can differ from one language to another, or from one stage to another in the history of a single language.

In recent years, two positions have been salient. The first, which we term the strong cartographic approach, is stated most clearly by Cinque and Rizzi (2008: 45), as follows: “If some language provides evidence for the existence of a particular functional head (and projection), then that head (and projection) must be present in every other language, whether the language offers overt evidence for it or not.” Under this view, syntactic structures in all languages use the same syntactic heads, organized in the same order of dominance. Seemingly absent heads are present in the structure, but are syntactically and phonologically inert, in that nothing moves to their specifier position and they are not spelled out at PF. Any crosslinguistic variation in the surface order of constituents therefore arises through movement.

In principle, this is a strong claim about the universality of functional structure. But, as pointed out in a different context by Peters and Ritchie (1969), claims of this sort are difficult, and sometimes in principle impossible, to falsify. To refute Cinque and Rizzi’s (2008) claim, one must show not just that language Y shows no sign of a projection XP known to exist in language Z, but that Y *cannot* be analyzed as having XP.

The second position, which we refer to as neoparametric, follows Chomsky’s (2000: 100) assumption that each language selects a subset [F] of the universal set of features, making a one-time assembly of the elements of [F] into a lexicon. Under this approach, languages can differ both in which formal features are present in syntactic representations, and, within certain limits, in how these formal features are grouped into syntactic projections. As Cowper (2005) and Ramchand and Svenonius (2013) point out, intrinsic semantic entailments between features restrict both their combination into lexical items and the selectional requirements of those lexical items. This approach is consistent with the widely held view (Borer 1984; Chomsky 1995; Baker 2008) that parametric syntactic differences between languages derive from the (functional) lexicon.

If the set of grammatically active features is language-specific, then the semantic range of a head bearing a given interpretable feature in a given language depends crucially on the set of contrasts involving that feature in that language. This was argued in Cowper and Hall (2013) for viewpoint aspect in pre-18th century English. See also Manuel (1990) and Hall (2011) for the same phenomenon in phonology: the phonetic range of a segment bearing a given set of feature specifi-

cations is not determined solely by the phonetic content of the features themselves, but rather depends on the set of contrasts in which the segment participates in a particular language.

We use the term *neoparametric* as a way of highlighting both the continuity of this approach with the Principles-and-Parameters tradition and its departure from the view, common in earlier work in this tradition, of parameters as ‘switches’ provided by UG and set in different ways by various languages. The neoparametric approach, then, is ‘parametric’ in that it countenances the possibility of cross-linguistic variation in syntactic structure, within limits defined by the formal properties of UG, and it is ‘neo-’ in that it attributes this variation to the lexicon rather than to customizable components in the computational system itself. It contrasts with the structural invariability posited by the strong cartographic approach, but it does not preclude other aspects of cartography, such as richly layered functional projections. In particular, much recent work on ‘nanosyntax’ (e.g., Ramchand and Svenonius 2008, 2013) can be seen as both neoparametric and cartographic.

One argument for the neoparametric approach can be found in Bobaljik and Thráinsson (1998), which shows that several correlated typological properties of Germanic languages can be elegantly analyzed as following from differences in the number of projections in the Infl system. More recently, Cowper and Hall (2013) give a neoparametric treatment of diachronic changes in English voice and aspect, arguing that the replacement of the passival by the progressive passive (among other changes) is most elegantly explained by positing a reorganization of the features characterizing voice and aspect, from one head to two.

Here, we argue that the neoparametric approach, along with contrastive underspecification, offers an elegant account of the diachronic development of the English modals.

2. The phenomenon

Until the end of the Middle English period, English modals were essentially ordinary verbs that happened to have modal meanings (Lightfoot 1979; Roberts 1985; others). Following Lightfoot (1979), we refer to the verbs that became the Present-Day English modals as premodals. As shown in (1), premodals could take nominal arguments.

- (1) a. *Ne can ic eow.*
not can I you
‘I don’t know you.’ (OE Gosp., Mt. XXV 12; Visser 1963–73: 499)
- b. *Euerych bakere of þe town shal [...] to þe clerke of the town a peny.*
‘Each baker of the town shall pay to the clerk of the town a penny.’
(a. 1400 Usages of Winchester (Engeroff) p. 64; Visser 1963–73: 498)
- c. *He felle downe and myght no more.*
‘He fell down and could do no more.’
(c. 1450 Guy of Warw. (C.) 6947; Visser 1963–73: 502)

- d. *I wolle noon oþer medecyne ne lore.*
 I will no other medicine nor lore
 ‘I will have no other medicine or teachings.’
 (c. 1374, Chaucer, *Anel. & Arc.* 244; Visser 1963–73: 503)
- e. *I woulde rather one onely day of lyfe / then all the ryches of Roome.*
 ‘I would rather have one day of life than all the riches of Rome.’
 (1557 North, Gueuara’s *Diall. Pr.* 96; Visser 1963–73: 503)

Most of the premodals are attested in non-finite forms, as illustrated in (2).

- (2) a. *I shall not konne answeere*
 I shall not can answer
 ‘I will not be able to answer.’
 (c. 1386 Chaucer *Cant. Tales* B 2902: V 1649; Roberts 1985: 23)
- b. *Cynnyng no recour in so streit a neede...*
 can-ing no recourse in so desperate a need
 ‘Knowing no recourse in so desperate a need...’
 (c. 1439 Lydgate *Fall of Princes* 7, 1346: V 1650; Roberts 1985: 23)
- c. *if we had mought conuenient come together...*
 if we had might-en convenient come together
 ‘If we had been able to meet conveniently’
 (c. 1528 St. Thomas More *Works* 107, 86: V 1687; Roberts 1985: 24)
- d. *if he had wolde...*
 if he had will-en...
 ‘if he had wanted to...’
 (1525 Ld. Berners, *Froiss.* II, 402: V 1687; Roberts 1985: 24)

The premodals underwent inversion in questions, as in (3a), but so did ordinary main verbs such as *make*, as in (3b).

- (3) a. *What sholde I al day of his wo endite?*
 ‘Why should I spend all day describing his woe?’
 (Chaucer, *Canterbury Tales*; Fischer 1992: 279)
- b. *Why make ye youreself for to be lyk a fool?*
 ‘Why do you allow yourself to behave like a fool?’
 (Chaucer, *Canterbury Tales*; Fischer 1992: 278)

Apart from their modal meaning, the one property that distinguished the premodals in Middle English was that they belonged to the morphological class of preterite-present verbs. These verbs were morphophonologically identifiable in that they did not take the regular third-person singular present-tense suffix *-þ/-s*, but they did not constitute a distinct natural class semantically or syntactically (Lightfoot 1979).

The situation is very different in Present-Day English, where modals constitute a morphosyntactic category distinct from other verbs. As shown in (4), they no longer take DP objects:

- (4) a. * *I should £10 000.*
 b. * *I can no recourse.*
 c. * *I will no more medicine.*

Modals in PDE also generally lack non-finite forms, as can be seen in (5).

- (5) a. * *I won't can answer.*¹
 b. * *She is canning do that.*
 c. * *If we had could meet...*

As is described in Chomsky (1957) and virtually every introductory textbook in generative linguistics, modals occupy a fixed position in the auxiliary sequence, occurring before any other auxiliary verbs in the clause, and they are claimed either to spell out Tense or to be in complementary distribution with it.

- (6) a. *She might have been watching.*
 b. * *She had might be(en) watching.*
 c. * *She had been might(ing) watch(ing).*

Like PDE auxiliary verbs, modals invert in matrix questions, while other main verbs have lost that property, as shown in (7).

- (7) a. *Should they answer the questions?*
 b. *Have they answered the questions?*
 c. *Did they answer the questions?*
 d. * *Did they {shall, should} answer the questions?*
 e. * *Answered they the questions?*

3. What happened

We propose that all of the above changes in the behaviour of English modals derive from a single change in the featural content of the English Infl system, along with two independently attested changes that took place around (but not exactly at) the same time. Specifically, the interpretable feature MODALITY was added to the English T head, and as a result, the modal verbs were reanalyzed as T instead of V. Independently, the subjunctive was lost as a productive part of the English verbal paradigm, and verbs stopped moving to T.

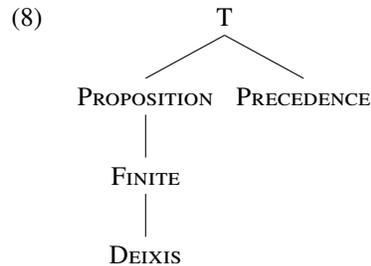
3.1 Features of T, past and present

We assume, for the purposes of this paper, that interpretable morphosyntactic features are privative. They participate in semantically determined dependency re-

¹For reasons of space, we set aside those varieties of contemporary English that permit modal stacking. Di Paolo (1989), noting the limited set of combinations of modals attested in these dialects, suggests that sequences such as *might could* are multi-word lexical items, similar to idioms.

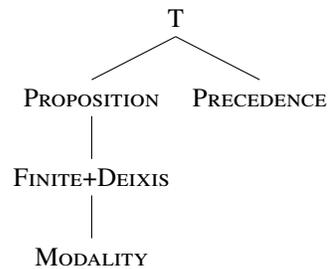
lations, which can be conveniently represented in tree form (Bonet 1991; Harley 1994; Cowper 1999; others). A given feature may or may not have the ability to project as a syntactic head in a given language.

Using the work of Cowper (2005) and Cowper and Hall (2007) as a starting point, we propose that the featural configuration of T in early Middle English was as shown in (8).



Two things happened to the representation of T between that time and Present-Day English. With the loss of the subjunctive, the features FINITE and DEIXIS came to be bundled, so that neither could ever occur without the other. In addition, the feature MODALITY was added to the system, as a dependent of FINITE+DEIXIS, giving the featural configuration shown in (9).

(9) Modern configuration:



The dependency relations in both structures follow from the denotations of the features, with the exception of FINITE, which has no semantic content; see Cowper (2005) for discussion of this point. Informal descriptions of the meanings of the various features, and their morphological realizations, are as follows:

PRECEDENCE marks a clause as temporally prior to its temporal anchor.

(This feature is spelled out by the past participle if the clause is non-finite, and by the simple past if it is finite.)

PROPOSITION causes a clause to denote a proposition (as distinct from a bare event).

(This feature has no overt morphological marking.)

FINITE is a purely syntactic feature, indicating the ability to assign structural case to, and agree with, a subject.

(This feature is spelled out by subjunctive verb forms in ME and, together with DEIXIS, by indicative verb forms in PDE.)

DEIXIS anchors the clause to the speech situation. A finite clause without DEIXIS is subjunctive.

(DEIXIS is spelled out by indicative verb forms.)

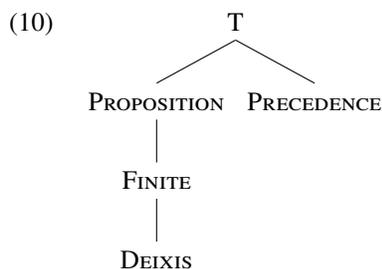
MODALITY introduces a marked relation (possibility or necessity) between the clause and the speech situation.² A deictic clause without modality is simply asserted to be true.

(This feature is realized by the future and conditional forms in French and Spanish, and spelled out by modals in PDE.)

The role played by contrast in the interpretation of these features can be seen by comparing the English tense system with that of Inuktitut (Hayashi 2011). In Inuktitut, PRECEDENCE has a dependent feature, HODIERNAL, spelled out by a special past-tense marker *-qqau*. Clauses with *-qqau* refer to past events that took place on the same day as the speech event. The general past-tense marker, *-lauq*, is thus contrastively non-hodiernal, and cannot normally be used for past events that took place on the day of the speech event. Hayashi (2011) argues, however, that *-lauq* cannot be specified as pre-hodiernal; when the speaker doesn't know when the event took place, *-lauq* is used by default.

A past-tense English clause, like an Inuktitut *-lauq* clause, does not have the feature HODIERNAL. The English past tense, however, is not interpreted as necessarily pre-hodiernal: because English makes no use of the feature HODIERNAL, its absence is never contrastive. English past-tense clauses can thus refer to any time prior to the moment of speech.

The features of early Middle English T are given in (10), repeated from (8):



At this stage, FINITE could appear without DEIXIS. That configuration was spelled out by the subjunctive form, and was used for reported speech (11a), clauses describing wishes (11b), *if*-clauses (11c), hypothetical events (11d), and questions (11e). Without FINITE, the clause would be infinitival.

²Cowper (2005) calls this feature IRREALIS; Cowper and Hall (2007) introduce the name MODALITY.

- (11) a. *Wulfstan sæde þæt he gefore of Hæðum*
 Wulfstan said that he went.SBJNCTV from Hedeby
 ‘Wulfstan said that he left from Hedeby’
 (Or 1 1.19.32; Traugott 1992: 240)
- b. *Forðy ic wolde ðætte hie ealneg æt ðære stowe wæren.*
 therefore I wanted that they always at that place were.SBJNCTV
 ‘Therefore I wanted them always to be there.’
 (CPLetWærf 73; Traugott 1992: 239)
- c. *Fed ðonne min sceap, gif ðu me lufige.*
 feed.IMPER then my sheep if thou me love.SBJNCTV
 ‘Then feed my sheep, if you love me.’
 (CP 43.4; Traugott 1992: 257)
- d. *For though I write or tolde yow everemo*
Of his knyghthod, it myghte nat suffise.
 ‘For even if I should write or tell you ever more of his knighthood, it
 might not suffice.’
 (Chaucer, *Canterbury Tales*; Fischer 1992: 248)
- e. *Lord! whyther thou yet thenke upon Criseyde?*
 lord whether thou yet think.SBJNCTV upon Cressida
 ‘Lord! Do you still think of Cressida?’
 (Chaucer, *Troilus and Cressida*; Fischer 1992: 279)

Under this view, the difference between a subjunctive clause and an infinitival clause is purely syntactic. A subjunctive clause, but not an infinitival clause, can have an internally licensed (nominative) subject, and its verb can agree with the subject. Semantically, infinitival and subjunctive clauses are both distinguished from indicatives by the lack of DEIXIS. The wide range of uses illustrated in (11) reflects this underspecified meaning. The subjunctive clauses in these examples have little in common semantically apart from the fact that they are not directly anchored to the speech situation, and many of the meanings associated with the subjunctive could also be expressed in other ways. Even in Old English, the use of the subjunctive was not fully consistent; various periphrastic options were available, including ones using the pre-modals.

In early Middle English, MODALITY was not yet part of the feature system, and verbs with modal meaning were true verbs. This situation is similar in some respects to that of modern French and Spanish, in which modal verbs are true verbs, with lexical modal meaning, appearing in the full range of tense forms. However, in those languages T includes MODALITY, which is spelled out not by modal verbs, but by the morphological future tense in the absence of PRECEDENCE, and as the condition when PRECEDENCE appears (Cowper 2005). In contrast, in Old English and early Middle English, as in Present-Day English, there was no morphological future tense. In Old English and early Middle English, the T system lacked MODALITY entirely, and the indicative tenses were thus **not** contrastively non-modal. The semantic range of the simple present was therefore broader than it is in Present-Day English, and it was used with future time reference more freely

than in Present-Day English. Some examples of futurate uses of the simple present that are no longer felicitous are shown in (13).³

- (13) a. *And wel I woot, as ye goon by the weye,
Ye shapen yow to talen and to pleye;*
‘And well I know, as you go on your way,
you will shape yourselves to tell stories and to play.’
(Chaucer, *Canterbury Tales*; Fischer 1992: 241)
- b. *& ic arise of deaðe on þam þridan dæge*
and I arise from death on that third day
‘and I will arise from death on the third day’
(ÆCHom I, 10 152.7; Traugott 1992: 182)

In early Middle English, any verb could move to T, and thence to C, as shown in (14).

- (14) a. *Hwæt getacniaþ ðonne ða twelf oxan [...]*?
what signify then those twelve oxen
‘What do the twelve oxen signify?’
(CP 16.105.5; Traugott 1992: 170)
- b. *Why make ye youreself for to be lyk a fool?*
‘Why do you allow yourself to behave like a fool?’
(Chaucer, *Canterbury Tales*; Fischer 1992: 278)

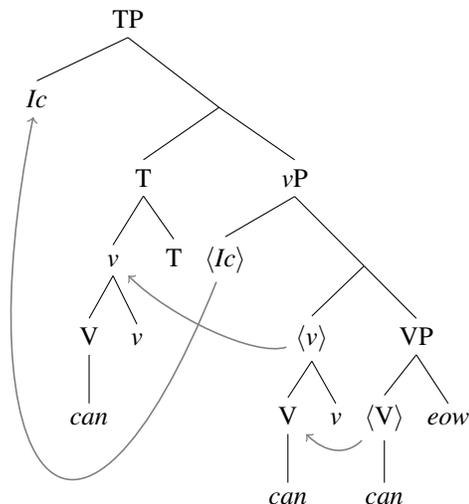
Modal verbs at this stage, then, were simply verbs. They originated in V, moved to T as all verbs could, and did not, as a class, spell out any particular feature of T. (15) gives the derivation of a simple clause containing the premodal *can*.

³Futurate readings of simple present clauses are still possible in PDE, but are much more restricted; they can occur in contexts where the future event is scheduled, or in *if*- and *when*-clauses, but are not generally felicitous as assertions of future events that cannot be scheduled:

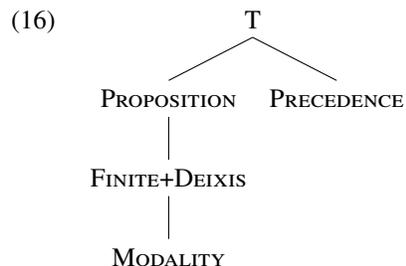
- (12) a. ✓ *The Halifax Mooseheads play the Sherbrooke Phoenix tomorrow afternoon.*
b. # *The Halifax Mooseheads defeat the Sherbrooke Phoenix tomorrow afternoon.*
c. ✓ *If the Mooseheads defeat the Phoenix tomorrow afternoon, they will celebrate.*
d. ✓ *When the Mooseheads defeat the Phoenix tomorrow afternoon, they will celebrate.*

Cutrer (1994: §4.1.5.1) notes that non-schedulable future events are modal in a way that scheduled future events (and past and present eventualities) are not; in her terminology, the distinction is between FACT and PREDICTION. Crucially for us, the simple present in PDE cannot be used with the modal sense intended in (12b). In (12c), the modality is presumably supplied by *if*, and in (12d), the future event is presupposed rather than predicted.

(15) *Ic can eow.* ('I know you'; cf. (1a))



Contrast this with the PDE system shown in (16), repeated from (9).



Three changes took place in the time between early Middle English and Present-Day English that are relevant to the behaviour of modals. First, FINITE and DEIXIS are now bundled. The subjunctive was lost as a productive part of the system, existing only in certain frozen constructions or highly formal, archaic usage. Thus, essentially all finite clauses are deictic. Second, MODALITY is now part of the T system, and is spelled out by the modals. Since modals spell out a formal feature of T, they realize T directly, rather than moving from V to T. Futurity in English now arises from the presence of MODALITY in T, spelled out by *will/would*. Finally, V-to-T movement has been lost. Main verbs no longer move to T, and auxiliary verbs are inserted directly in T, as proposed by Cowper (2010); see also Bjorkman (2011).

3.2 The path of change

How did these changes come about? The bundling of FINITE and DEIXIS appears to have been triggered at least in part by the erosion of the morphological contrast between the indicative and the subjunctive. Fischer (1992: 246) notes that

“[t]he three moods [indicative, imperative, and subjunctive] are still formally differentiated in Middle English but this becomes less and less so in the course of the period.” The loss of the subjunctive was at least partially due to phonological reduction and deletion of unstressed vowels in the inflectional suffixes (see, e.g., Lass 1992).

As the subjunctive became less morphologically distinct, it also became less frequent. Fischer (1992: 247), citing Mustanoja (1960: 453), reports that “by the fifteenth century the ratio between the periphrastic and inflectional subjunctive was nine to one in non-dependent clauses,” and that “[i]n Middle English we see a very rapid increase in the use of periphrastic constructions especially of the so-called perfect and future ‘tense’, and in the use of modals where Old English had the subjunctive” (250). Fischer (2003) notes that in OE, although the subjunctive could convey modal meanings, it was already beginning to be reinforced or replaced by modal verbs, as in (17).

- (17) a. Subjunctive in deontic context:

And micel is nydbearf manna gehwilcum þæt he Godes lage gime
 and much is necessary of men for each that he God’s law heed.SBJNCTV
 ‘And it is necessary for each man that he should heed God’s law.’
 (*The Homilies of Wulfstan*, quoted in Fischer 2003: 21)

- b. Subjunctive reinforced by deontic modal:

Forþon us is nydbearf, þæt þa mynstru of þære stowe moten
 therefore us is necessary that the monasteries from that place must.SBJNCTV
beon gecyrrede to oþre stowe.
 be changed to other place
 ‘Therefore it is necessary for us that the monasteries be moved from that place to another.’
 (*Gregory’s Dialogues*, quoted in Fischer 2003: 21–22)

- (18) illustrates the use of *should* as a replacement for the subjunctive:

- (18) *And manie gon nakede; and bidde þæt sum man heom scholde biweue*
 and many go naked and ask that some one them should clothe
 ‘And many go naked and ask that someone clothe them’
 (ca. 1300, quoted in Fischer 1992: 315)

With the decline of the subjunctive–indicative distinction, learners had less reason to posit a separation of FINITE from DEIXIS. For some speakers, the features may have come to be bundled, and spelled out by indicative verb forms; for others, the underlying featural distinction may have been retained, but with syncretic realizations for the almost all verbs. In the spirit of the Contrastivist Hypothesis (Hall 2007, Drescher 2009), we speculate that in the absence of evidence to the contrary, learners treat features as bundled together rather than separately active.

The loss of a distinct subjunctive led to an increase in the use of the premodals to express the meanings previously expressed by the subjunctive. As a periphrastic substitute for the subjunctive T head, premodals would have been used

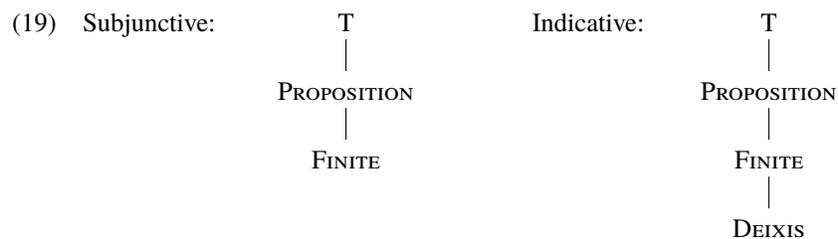
more frequently in their finite forms as the first element in the verbal sequence. Warner (1993: 145) notes that there are no instances of non-finite *mōt*, *sceal*, and *þearf* by the late Middle English period, and that the non-finite uses of *can*, *may*, and *will* declined through the 1400s.⁴ By 1500, only *will* retained any non-finite use, and even that was extremely rare in the 16th century. The premodals were also morphologically distinct from other verbs: as preterite-presents, they lacked the third-person singular agreement marking (Lightfoot 1979).

At around the same time, in the early 16th century, the infinitival suffix *-en* was lost. According to Roberts (1993: 310f), also cited in Roberts and Roussou (2003: 41), this suffix was the only evidence that the complement of a premodal was a TP rather than simply a verb phrase. With the loss of *-en*, learners reanalysed modal clauses as monoclausal rather than biclausal, with the modals occupying a functional head.

The increasing use of the premodals to express what was previously encoded by the subjunctive, and the decline in their nonfinite uses, led to a reanalysis of the features of T. MODALITY, a dependent of DEIXIS, was added to the features of T, and was spelled out by the premodals. Since MODALITY is a semantic dependent of DEIXIS, all English clauses bearing this feature are necessarily finite.

The addition of MODALITY to T provided a productive means of expressing epistemic modality. According to Traugott (1992: 197), in OE the premodals either had no epistemic uses at all, or “show only marginal epistemic colouring” in impersonal constructions. “Even the subjunctive mood does not express doubt (low probability) in main clauses; it does so only in subordinate clauses” (ibid.). Epistemic modality was expressed lexically, either by a few adverbs like *gewene* ‘possibly’, *æfæstla* ‘certainly,’ or *forsop* ‘truly,’ or by higher clauses like *wen is þæt* ‘hope is that.’ Roberts and Roussou (2003: 45), citing Lightfoot (1979) and Roberts (1985), note that epistemic interpretations of premodals emerge in Middle English, and the number of epistemic modal examples in Visser (1963–73) jumps dramatically after the mid-15th century.

The subjunctive–indicative contrast in (19) was replaced by the functionally similar but formally distinct indicative–modal contrast in (20):



⁴Some of the premodals diverged into modal and non-modal verbs; the latter can still occur in non-finite forms (e.g., *con* as in “I have hardly had time to con over your examination papers” (1835); *will* as in “’Tis yours, O Queen! to will/ The Work, which Duty binds me to fulfil” (1697)). It is thus not always clear, for any given non-finite form in the transitional period, whether the verb should be considered an instance of the earlier premodal, or of its non-modal reflex.

The narrowing of the interpretation of the simple present, so that it now excludes (non-scheduled) futurate readings like those in (13), suggests a change in the system of contrasts. On neither side of the change is the simple present itself specified either as having or lacking future time reference. What changed is that the modals came to spell out a feature MODALITY that had not previously been part of the morphosyntactic system of English at all. Prior to this development, the simple present was vague as to modality; now it is contrastively non-modal.

Our account of these changes is crucially neoparametric, in that it depends on the assumption that it is possible for different stages of a language (or, by implication, different languages or different dialects) to employ different sets of morphosyntactic features. It is also crucially based on the notion of contrast, in the tradition of Saussure (1916), Trubetzkoy (1939), Hall (2007), Dresher (2009), Wiltschko (2009), and many others: linguistic representations are interpreted as members of a set of contrasting possibilities.

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