1. Introduction

The class of English modal verbs have undergone a number of important changes in the history of English, and continue to change in Present-Day English (PDE). Studies on current change suggest that the modals are decreasing in frequency, becoming monosemous, and are facing possible competition from rival semi-modals which are increasing in frequency (see Krug 2000; Leech 2003; Smith 2003; Mair & Leech 2006; Mair 2006; Leech et al. 2009).

This paper investigates the variation between the core modal must and the semi-modals have to and have got to in the Diachronic Corpus of Present-Day Spoken English (DCPSE). Changes in the modal system affect both epistemic and root uses of must, although have to is only an active rival to root must; epistemic instances of have to (and have got to) are rare in the corpus. We suggest that a tendency to avoid expressions of strong commitment is the cause of the decline in root must. This is supported by similar falls in the frequency of should and ought found by Leech et al. (2009).
Spoken English (see Section 3.1). We use the label "semi-modal" for have to and have got to in order to highlight that these forms share some of the properties common to must, a member of the class of core modals.

The questions we address in this paper are: (i) is the core modal must decreasing in frequency? (ii) is there evidence for "competition" between must and the semi-modals have to and have got to? (iii) is must becoming monosemous?, and (iv) what is the motivation for the change(s)?

The variation between the three forms is a window onto the changing modal system and, while the results cannot necessarily be generalized to other modals, the study will offer an insight into areas of the modal system susceptible to change and identify possible motivating factors behind these changes.

This paper is organized as follows: Section 2 reviews some of the existing work on current change in the modal system; Section 3 presents the corpus and describes the data collection method, including decisions taken on which data to exclude from the current study; Section 4 discusses the main findings and investigates possible motivations for the changes that have occurred; Section 5 is the conclusion.

2. Current change in the modal system of English

2.1 Observing current change

Throughout the history of English, the modal verbs have undergone a number of significant changes, resulting in a class of verbs characterized by a number of syntactic properties which are not shared by main verbs (see Traugott 1989; Lightfoot 1991; Warner 1993). More recently, there has been a growing interest in current change in the modal system of English (Krug 2000; Leech 2003; Smith 2003; Mair 2006; Leech et al. 2009), as well as more generally. It is hoped that research into this phenomenon will lead to a greater understanding of the trigger(s) and pathway(s) of language change.

We might expect instances of current change to be subtle in comparison to changes measured over a longer period. While recent changes in the language may not appear as dramatic as some of the earlier changes such as the levelling of the English inflectional system from Old to Middle English, the shift from OV to VO or the appearance of do-support, they could be equally significant. There exist instances of historical language changes which involve a change in the underlying grammar of the language (see Kroch 1989; Lightfoot 1979; Warner 1993; Pintzuk 1995, among others). Current change has been linked to grammar change only very recently in this way. According to Leech (2003: 223), however, "if we understand such [grammatical] changes to include changes of frequency, significant grammatical changes do take place within a generation."

The nature of current change is such that it is more difficult to observe than a change which has occurred over a longer period of time, e.g. several centuries. In the study of a long-term change, the end-point of the change has typically been reached, and it is often possible to track the change through the period in which it occurred. A change measured over a shorter period of thirty years or so, however, will not necessarily be completed in the time period, and it is impossible to know how, when, or even if a particular change will complete. The danger of attempting to predict these is illustrated by the subjunctive which was believed to be decreasing to the point of extinction (Fowler 1965), but has been shown more recently to be undergoing a revival (Overgaard 1995; Hundt 1998; Leech et al. 2009). It is, of course, possible to track a change as it occurs, but it will often be necessary to observe the phenomenon at a later period (see Bauer 2002; Mair 2008).

2.2 Core modal frequency in Present-Day English

One of the observed changes in the modal system of Present Day English is a decrease in frequency of the core modals (see Krug 2000; Leech 2003; Smith 2003; Leech et al. 2009). Leech (2003) investigates modal usage in the Brown quartet of corpora. The term 'Brown quartet' refers to four comparable corpora: the Brown Corpus and Frown (Freiburg-Brown) Corpus from 1961 and 1991–2, respectively, and two matching corpora of British English, LOB (Lancaster-Oslo/Bergen) and FLOB (Freiburg-Lancaster-Oslo/Bergen), again from 1961 and 1991–2, respectively. These corpora each contain a million words in fifteen written text types. He observes that the decrease in modal usage is apparent in 13 out of 15 categories, ranging from a decline of 31.2 percent (D, Religion) to a decline of 0.5 percent (H, Miscellaneous). In the remaining two categories, there is a small and non-significant increase; in J (Learned) of 2.4% and L (Mystery Fiction) of 8.4 percent. Furthermore, the British and American corpora show a decrease over time (from 1961 to 1991) in the case of every modal (individual modals differ in frequency), except can and could which show an increase of 2.2 percent and 2.4 percent, respectively, in British English. Leech’s results also show that the infrequent modals
shall, ought to, and (in British English) need have decreased drastically, and a similar decline has taken place in the mid-frequency modals may and must, while would and should have decreased less drastically. Finally, will, can, could and might have not significantly changed. The results presented by Leech et al. (2009) also confirm that the modals which show the steepest decline are the less common modals.

2.3 Core modals vs. semi-modals

Mair & Leech (2006) point out that although many changes involve a competing construction or constructions, there is not necessarily a correlation between the form(s) losing ground and those gaining. On discovering a decrease in the frequency of the core modals in the Brown family of corpora, Leech (2003: 229) suggests that perhaps the semi-modals are "gradually usurping" the functions of the core modals, but concludes that this is not the case. The reason for his conclusion is that, although semi-modal usage is increasing overall, some semi-modals are actually declining (for example be to, (had) better, (have) got to and be going to in FLOB), and most semi-modals are much less frequent than the core modals (for example, will is about ten times more frequent than be going to). These results are supported by Krug (2000), and also by Smith (2003: 249) who states that "the rise of [have to] ... by no means makes up for the shortfall in must."

Mair (2006: 105) also investigates modal frequency using the Santa Barbara Corpus of Spoken American English and the spoken component of the British component of the International Corpus of English (ICE-GB). His results indicate that have to is the most common form in both varieties, followed by have got to and must in British English and need to and must in American English. On the possibility of have to taking over the functions of must, he comments that "epistemic must is secure in spoken British English, as have to in this function has a marginal status at best" (Mair 2006: 105).

It seems, then, that if there is competition between must and have to/have got to this is in the expression of obligation or necessity, i.e. root meaning. In their investigation of modality in British dialects, Tagliamonte & Smith (2006) find exactly this; their findings indicate that "[m]ust is obsolescent and there is an unanticipated resurgence of have to alongside pan-dialectal grammatical reorganization" (Tagliamonte & Smith 2006: 341).

2.4 Monosemy of modals

Leech (2003) carries out a semantic analysis of should and every third instance of may and must found in the Brown corpora to discover whether a decline in frequency can be attributed to one particular sense of a modal. He provides some evidence that the decline in frequency of the modals is linked to the tendency for modals to become "more monosemous", but points out that this is not always the case. In fact, a different pattern can be observed for each of the three modals investigated. Must, the modal we are interested in here, shows a decline in both root (event modality; obligation) and epistemic (logical necessity) senses between the 1960s and the 1990s, particularly in the SEU-mini and ICE-GB-mini corpora of spoken English, 3 but the root sense has shown the largest decrease in frequency. 4 Leech warns that the results of the study as a whole are tentative because of uncertainties in sampling and coding procedures. It is also important to bear in mind that comparing the results of semantic analyses across studies is difficult, due to the challenging nature of the task of semantic coding.

3. Corpus and data collection

3.1 Current change and the Diachronic Corpus of Present-Day Spoken English

There are a number of "pitfalls of anecdotal observation" as far as current change is concerned, most notably "[t]he spread of salient new uses is exaggerated, while the less salient persistence of older forms is not noted or [...] a diachronic trend is read into a situation which merely shows variable or fluctuating usage" (Mair 2008: 1111). For this reason, studies on current change are carried out more reliably using corpora.

One of the strengths of the methodology we have adopted is that it uses a corpus of spoken English. This is particularly important for the study of the semi-modals as "these forms, being typically colloquial, are not likely to show up in their true colours in the written language" (Leech 2003: 230).

The Diachronic Corpus of Present-Day Spoken English (DCPSE) contains 421,362 words from the British component of the International Corpus of English (ICE-GB) collected in the early 1990s and 464,074 words from the London-Lund 3. The SEU-mini corpus used by Leech (2003) contains 80,000 words (16 texts) from conversation, BBC discussions and news, sports and other commentaries, broadcast talks, etc., all dated between 1959–65. The ICE-GB-mini corpus contains 80,000 words from text categories chosen to match those of the SEU-mini corpus, the only difference being the date: texts are dated 1990–92.

4. Leech's (2003) results show that the epistemic reading of may has increased in the written corpora, but all other meanings have shown a decline. With should the root sense of "weak obligation" is shown to be gaining at the expense of other senses, particularly the epistemic sense of "weak inference."
Corpus (LLC) collected between the late 1960s and early 1980s (for more information about the LLC and ICE-GB see Svartvik (1990) and Nelson et al. (2002), respectively). The period of time between LLC and ICE-GB is within the range of what is considered ideal for studying current change. In designing the Brown family of corpora a decision was made to have an interval of approximately thirty years between the Brown and LOB corpora (1960s) and the Frown and FLOB corpora (1990s) because “the interval of one generation or so […] is usually considered the minimum sufficient to clearly identify and document linguistic change in real time” (Mair 1998: 140).

With over 800,000 words of spoken English, DCPSE is the largest available single collection of parsed and checked orthographically transcribed spoken material. All of the sentences in DCPSE have been grammatically analysed and have been given detailed parse trees which contain functional information (subject, direct object, noun phrase head, etc.), categorial information (part-of-speech, phrase, clause, etc.), and optional additional features (intransitive (verb), common (noun), main (clause), etc.).

The corpus can be explored by using the International Corpus of English Corpus Utility Program (ICECUP) software developed at the Survey of English Usage. ICECUP offers a facility called Fuzzy Tree Fragments (FTFs; see Aarts et al. 1998 and Nelson et al. 2002). An example FTF which searches for all verb phrases (VPs) in the corpus is shown in Figure 1.1. This FTF is a partial tree diagram, which can be constructed by users. FTFs are “fuzzy” in the sense that users can specify for themselves the level of detail that they are interested in. For example, if the user adds “intr” to the lower section of the FTF in Figure 1.1, the software will search for all intransitive verb phrases in the corpus. This is shown in Figure 1.2.

More complex FTFs can contain grammatical structures, words, lexical wild cards, etc. In the context of the present research, the FTF in Figure 2 searches the corpus for the string got to with the position for have left unspecified (indicated by the symbol ‘¤’). This FTF will find cases of ’ve/’d got to as well as have/has/had got to, and even cases where an adverb intervenes between have and got. This is because in Figure 2 the arrows between the nodes are set so that something may intervene between the nodes. This is an example of user choice. Users can change this setting if they wish to specify that the nodes should follow each other immediately.

3.2 Data

In order to ensure reliability of results, it is important to identify contexts in which the forms being investigated may alternate. In the case of have to, have got to, and must there are a number of syntactic environments in which there is only one option, and these have been excluded from the study (see Tagliamonte & Smith 2006; Depraetere & Verhulst 2008). All exclusions are listed below, and are not included in the statistical tests in Section 4.

First, negated forms were excluded because the meanings are not equivalent:

(1) a. You mustn’t go (the modal is outside the scope of the negation: ‘It is necessary for you not to go’).
   b. You don’t have to go (the modal is inside the scope of the negation: ‘It is not necessary for you to go’).

6. This FTF will only retrieve instances of got to which are preceded by an auxiliary verb (always have); cases of got to (gotta) will not be captured with this FTF. Cases in which got is a main verb followed by the preposition to would also not be retrieved using this FTF.

7. Depraetere and Verhulst (2008: 16) also exclude negative uses of must and have to based on the observation that “the scope of negation is different for have to (absence of necessity, ’not necessarily’) and must (prohibition, ‘necessarily not’).”
c. You haven’t got to go (the modal is inside the scope of the negation: ‘It is not necessary for you to go’).

Secondly, interrogative contexts were excluded because interrogative forms with must did not occur at all in the later period, and only one example occurred in the early period:

(2) Must Wordsworth speak for us in his intimations of immortality?

Finally, also excluded were infinitival have to (including future forms) because equivalent forms of must or have got to do not exist; and the past form had to because must cannot refer to past time, so would not be an option here.

It is important to point out that tokens of must have been or must have V-ed have not been excluded. Although there are no tokens of have (got) to have been or have (got) to have V-ed in the corpus, a search of the web using WebCorp illustrates that both of these forms are possible.8 An example of have to have been is given in (3):

(3) Just my tuppence worth, but 2007 has to have been the absolute worst X Factor ever.9

3.3 Semantic coding

A number of claims have been made in the literature about the frequency of the modals and semi-modals relating to their meaning(s). For instance, Coates (1983) states that have to and have got to are infrequent as epistemic modals and Leech (2003) claims that must is one of a few modals not becoming monosemous. In order to test these claims using DCPSE, each instance of must, have got to and have to was manually classified according to the type of modality that they express.

Modal meaning has been dealt with in a number of ways. The present study uses the coding system advocated by Leech & Coates (1980) and Coates (1983), in which modals are divided into two semantic classes, root and epistemic. In this approach modal meaning is dealt with in a gradience model where each class has both core and peripheral members. This can account for the fuzziness in modal meaning without the need for postulating additional classes.

According to Palmer (2001: 9) "with deontic modality the conditioning factors are external to the relevant individual, whereas with dynamic modality they are internal”. As outlined below, we do not classify the source of the obligation for the instances of must, have to and have got to. For this reason, we prefer the term root over deontic, as this does not imply a contrast with dynamic. Our approach to semantic coding is described in more detail in Sections 3.3.1–3.3.4.

3.3.1 Root modality

Coates argues that root modality is fuzzy with a cline from strong obligation (‘It is imperative/obligatory that x’) to weak obligation (‘It is important that x’), although the basic meaning of root must is ‘It is necessary for ...’. Examples of root meaning are given in (4):

(4) a. My boss had said you must read those books.
(DCPSE:DI-B12 #0171:1:E)

b. I’ve got to go, I’m afraid, in an hour.
(DCPSE:DI-B37 #0216:2:B)

c. Actually you have to be much more honest about what you’re doing.
(DCPSE:DI-A02 #0124:2:B)

3.3.2 Epistemic modality

Epistemic must “conveys the speaker’s confidence in the truth of what he is saying, based on a logical process of deduction from facts known to him (which may or may not be specified)” (Coates 1983: 41). Coates divides epistemic must into two semantic classes, root and epistemic. In this approach modal meaning is dealt with in a gradience model where each class has both core and peripheral members. This can account for the fuzziness in modal meaning without the need for postulating additional classes.

8. There are two plausible reasons why these forms are not present in DCPSE: (i) they are very infrequent, or (ii) they are a post 1992 innovation. It is impossible to determine which, if either, of these is correct.

3.3.3 Performative modality

Performative or speech act modals occur where the speaker is carrying out the action denoted by the verb. These occur frequently with verbs like admit, say, confess, as shown in (6).

(6) a. There’s a piece here called Spring Fire which takes my interest, I must say. (DCPSE:DI-D12 #0141:1:A)
   b. When you switched to the emphasis being on Architecture <,,> did you initially think that you wanted to go into that as a career or were you doing it just as a degree because you enjoyed the subject? (DCPSE:DI-A07 #0093:1:A)
   c. Pretty much yeah I’ve got to admit. (DCPSE:DI-A07 #0094:1:B)

Although performative modality is considered to be a type of root modality, these examples were coded and counted separately because of their specialized meaning.10

3.3.4 Ambiguity

Coates (1983: 47) asserts that “there is no overlap between the two fuzzy sets representing Root and Epistemic must” and “[c]ases where it is not possible to decide which meaning is intended are therefore ambiguous”, as illustrated in (7) taken from Coates (1983: 47, her example (35)):11

(7) And anyway, I think mental health is a very relative thing. I mean, mental health must be related to the sort of general mentality, or whatever other word you use of the community you’re living in. (S.2.14.73)

The root meaning here is ‘it’s essential that mental health is related to …’, while the epistemic reading is ‘it’s inevitably the case that mental health is related to …’. It might be expected that ambiguous cases would be relatively frequent. However, from the Lancaster and Survey corpora, Coates classes only 11 examples out of a total of 436 as ambiguous.12 In the ambiguous cases “syntactic features which could disambiguate such [ambiguous] utterances are either not present or are themselves ambiguous” (Coates 1983: 47).

10. Tagliamonte & Smith (2006) exclude these cases from their data based on the fact that they occurred exclusively with must, but in DCPSE have got to and have to can have performative meaning.
11. Coates’s original mark-up has been removed from the example as it is not relevant here.
12. This could be viewed as indirect support for the coding system chosen by Coates; we might expect that the better the coding system is, the fewer indeterminate examples there will be.

4. Results and discussion

4.1 Overall frequencies

In order to examine a possible trend for declining core modal usage and to investigate the theory of competition between core modals and semi-modals, the overall frequency of core modal must is compared with the frequencies of the semi-modal forms in DCPSE. As shown in Table 1, during the thirty-year period the frequency of must has declined by over 55% while the frequency of have to has significantly increased by nearly 32%.

<table>
<thead>
<tr>
<th>(Semi-) modal</th>
<th>LLC frequency</th>
<th>ICE-GB frequency</th>
<th>Change in frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>per 100,000 words</td>
<td>per 100,000 words</td>
<td>raw % χ² score</td>
</tr>
<tr>
<td>must</td>
<td>427</td>
<td>92.01</td>
<td>172 40.82 -55.64 36.29</td>
</tr>
<tr>
<td>have got to</td>
<td>187</td>
<td>40.30</td>
<td>156 37.02 -8.14 3.10</td>
</tr>
<tr>
<td>have to</td>
<td>188</td>
<td>40.51</td>
<td>225 53.40 +31.82 31.94</td>
</tr>
<tr>
<td>Total</td>
<td>802</td>
<td>172.82</td>
<td>553 131.24 -24.06 71.32</td>
</tr>
</tbody>
</table>

Table 1. Overall frequencies of must, have got to and have to in DCPSE (figures in bold are significant at p < 0.01)

<table>
<thead>
<tr>
<th>Source corpus</th>
<th>Epistemic</th>
<th>Root</th>
<th>Performative</th>
<th>Ambiguous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>LLC</td>
<td>43.96</td>
<td>47.79</td>
<td>36.63</td>
<td>39.81</td>
<td>9.48</td>
</tr>
<tr>
<td>ICE-GB</td>
<td>21.12</td>
<td>51.74</td>
<td>16.14</td>
<td>39.53</td>
<td>2.37</td>
</tr>
<tr>
<td>Total</td>
<td>65.08</td>
<td>48.99</td>
<td>52.77</td>
<td>39.73</td>
<td>11.85</td>
</tr>
</tbody>
</table>
Somewhat surprisingly, have got to decreases in frequency by 8%. It is impossible for us to be sure whether have got to has reached its peak and is showing a decline in the 1990s data prior to “levelling out” in the future, or whether the decrease is simply fluctuating usage in the corpus. To be certain, it will be necessary to measure the frequency of have got to at a point later than 1992. Unfortunately, the lack of available corpora makes this impossible at this point in time.

4.2 Root and epistemic modality

One of the aims of this study is to determine whether must is becoming monosemous. Using the semantic coding carried out on the data (see Section 3.3 above for details), the frequencies of epistemic, root and performative uses were calculated. The results are presented in Table 2.

To discover if the decline in root and/or epistemic must is related to the use of the semi-modals, root and epistemic uses of the three forms were compared. The results for root and epistemic uses are presented in Tables 3 and 4, respectively.

Table 3 illustrates that as expressions of root obligation, must, have got to and have to combined have decreased by 12.98%. Again, the decrease in must and the rise in have to are found to be significant, and have got to shows a decline.

Table 3. Frequencies of root must, have got to and have to in DCPSE (figures in bold are significant at p < 0.01)

<table>
<thead>
<tr>
<th>(Semi-)modal</th>
<th>LLC frequency raw per 100,000 words</th>
<th>ICE-GB frequency raw per 100,000 words</th>
<th>Change in frequency %</th>
<th>χ² score</th>
</tr>
</thead>
<tbody>
<tr>
<td>must</td>
<td>174</td>
<td>37.49</td>
<td>70</td>
<td>16.61</td>
</tr>
<tr>
<td>have got to</td>
<td>184</td>
<td>39.65</td>
<td>151</td>
<td>35.84</td>
</tr>
<tr>
<td>have to</td>
<td>185</td>
<td>39.86</td>
<td>208</td>
<td>49.36</td>
</tr>
<tr>
<td>Total</td>
<td>543</td>
<td>117</td>
<td>429</td>
<td>101.81</td>
</tr>
</tbody>
</table>

Results for epistemic use in Table 4 show that, although epistemic must has decreased by over 50% must is the still the preferred form for expressing epistemic necessity; epistemic have got to and have to are very rare in DCPSE.13

The general view in the literature is that the decline of the core modals cannot be attributed directly to an increase in the semi-modals (Krug 2000; Leech 2003; Smith 2003; Mair & Leech 2006). This conclusion was reached by studying frequencies in written language where, on the whole, core modals are more frequent than semi-modals. The situation with respect to the spoken data is quite different. In root contexts (see Table 3), have to is already more frequent than must in the 1960s (frequencies are 39.86 per 100,000 words for have to and 37.49 for must). By the 1990s, the frequency of have to is almost three times that of must (the frequencies are 16.61 and 49.36, respectively). This suggests that there may be a link between core modal decline and semi-modal increase.

4.3 Motivating factors

The frequency shift in the expression of root modality suggests a possible correlation between the decline of must and the rise of have to. The question, of course, is what is the motivation for the shift away from must and towards have to in root meaning? A number of suggestions to explain the decline in must have been made in the literature, many of which refer to the “authoritarian” nature of must. Myhill (1995: 202), for instance, attributes the decline in must (= ‘obligation’) and the rise of should (= ‘weak obligation’) around the time of the American Civil War to a growing tendency to avoid overt claims to authority by the speaker/writer. He calls this “democratisation”. He claims that the “old” modals were linked with people controlling the actions of other people while the “new” modals are more personal, and are used to give advice to an equal, and the like. Smith (2003) shares a similar view, and makes the following remark:

It seems probable that must is a casualty of a changing society where increasing emphasis is being placed on equality of power, or at least the appearance of equality of power, and the informality of discourse found in private conversation is becoming more acceptable, even usual, in official types of discourse. Just as these conditions are likely to disfavour the use of must, they should correspondingly favour other forms which express obligation less directly (Smith 2003: 259).

Table 4. Frequencies of epistemic must, have got to and have to in DCPSE

<table>
<thead>
<tr>
<th>(Semi-)modal</th>
<th>LLC frequency raw per 100,000 words</th>
<th>ICE-GB frequency raw per 100,000 words</th>
<th>Change in frequency %</th>
<th>χ² score</th>
</tr>
</thead>
<tbody>
<tr>
<td>must</td>
<td>206</td>
<td>44.39</td>
<td>91</td>
<td>21.60</td>
</tr>
<tr>
<td>have got to</td>
<td>2</td>
<td>0.43</td>
<td>4</td>
<td>0.95</td>
</tr>
<tr>
<td>have to</td>
<td>2</td>
<td>0.43</td>
<td>3</td>
<td>0.71</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>45.25</td>
<td>98</td>
<td>23.26</td>
</tr>
</tbody>
</table>

Smith 2003: 259). The frequencies for epistemic have to and have got to are low which may lead to questions about the reliability of the chi-square test here, but log likelihood calculations confirm low significance scores: must 0.19, have got to 3.05, have to 1.67 (total 4.92).

13 The frequencies for epistemic have to and have got to are low which may lead to questions about the reliability of the chi-square test here, but log likelihood calculations confirm low significance scores: must 0.19, have got to 3.05, have to 1.67 (total 4.92).
The problem with the suppositions by Myhill and Smith, however, is that epistemic must has also decreased, and this verb is not related to power and authority. Leech et al. (2009: 88) suggest that the “partial decline of epistemic must could be due to contamination by the dramatic fall of deontic must”. This is perhaps a questionable explanation because the root and epistemic meanings of must do not intersect, so it is not clear how a fall in one would cause a fall in the other (cf. Coates’s (1983: 170) treatment of the meanings of will which do intersect). In their data, root must declines more drastically than epistemic must, which Leech et al. suggest is because “neither have to nor any other form has become widely adopted as an alternative expression of strong epistemic necessity”. In the spoken data from DCPSE, however, the fall of epistemic must is almost equal to that of root must, although it is true that there is no rise in epistemic have to or have got to. It is, of course, possible that there are independent explanations for the fall of root must on the one hand, and epistemic must on the other. However, we suggest that the cause is the same.

The data from DCPSE cannot tell us which occurred first, the fall of root must or the rise of root have to. The figures for epistemic must suggest the former, otherwise it is difficult to explain why epistemic must has declined, but epistemic have (got) to has not increased.

As an explanation for the decrease in must, we appeal to what Huddleston & Pullum et al. (2002: 175) refer to as “strength of commitment” where “necessity involves a strong commitment”. We suggest that the decline in must is a result of a decline in forms expressing strong commitment. In the root sense, have to is favoured over must. The difference between the two forms is illustrated in (8) where the conjoined clause is not possible with must, because the commitment is stronger and does not permit resistance (example from Sweetser (1988: 54), quoted in Hopper & Traugott (1993: 79)).

(8) I have to? must get this paper in, but I guess I’ll go to the movies instead.

This explanation can be extended to epistemic must because this also expresses necessity (and hence involves strong commitment), although, as pointed out in Section 4.2, have to is not a rival to epistemic must.

If there is a move away from forms which express a stronger commitment, then we would also expect other forms which express necessity to show a decrease. This is in fact the case: should and ought to, both classified by Coates (1983) as modals of necessity and obligation, show a decrease in frequency in DCPSE and in written corpora (see Leech (2003) and Leech et al. (2009) for results from the Brown family of corpora).

5. Conclusion

This study has investigated variation between the core modal must and the semi-modals have to and have got to using the Diachronic Corpus of Present-Day Spoken English. By considering only syntactic environments in which the forms are variable, any possible competition between must and the “rival” semi-modal alternates can be reliably observed. The results from the study show that even in the 1960s data, the frequency of root have to has surpassed that of root must. The continued decline of must and the rise in have to in the 1990s data suggests that have to is being used in contexts where previously we would have found must. Surprisingly, have got to, the most recent marker of root modality, has decreased. This does not appear to be a reflection of the DCPSE sampling, as Tagliamonte (2006) and Tagliamonte & Smith (2006) found that this was also the case in a number of English dialects.

The semantic coding carried out on must, have to and have got to in DCPSE has led to a number of interesting results. Firstly, although both epistemic and root senses of must have declined, as proportions of the total number of instances of must they have remained fairly constant. This supports Leech’s (2003) claim that must is not becoming monosemous. Further study of the semantic senses of other modals in DCPSE is necessary in order to determine if this fact is peculiar to must. Secondly, have to is the most frequent marker of root modality, which is remarkable because we might expect the newer form have got to to be more frequent. And finally, the use of epistemic must has decreased, but the use of epistemic have to has not increased. This highlights the importance of using corpora to investigate language change, as simple “anecdotal observation” might have led to a prediction that this form is on the increase.

References


