Current Changes in the English Modals –
a Corpus-Based Analysis of Present-Day
Spoken English

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1. Introduction: Scope and aims of the analysis

This study presents the first detailed corpus-based analysis of ongoing changes in the modal auxiliaries based on real-time data of spoken British English. Previous research has identified the English modal auxiliaries\(^1\) as a category undergoing rapid change in present-day English. These changes are the focus of this study. There are a number of studies dealing with the long-term development of English modal verbs, using them as paradigm cases of grammaticalisation both with regard to their syntactic development and categorisation, and with regard to their semantic development and modality.

The English language has got two groups of verbs for the expression of modality: There are the so-called central modals (must, needn’t, shall, should, can, could, may, might, will, would) and periphrastic expressions, which will in the following be referred to as semi-modals (have to, (have) got to, need to, be able to, be allowed to, be going to, want to, be supposed to, ought to). The group of central modals is historically older than the semi-modals, which have developed more recently.

Modal verbs fall into three semantic groups: While must, needn’t, should, have to, have got to, be supposed to and ought to express a necessity or obligation, can, could, may, might, be able to and be allowed to express an ability, a possibility or a permission and will, shall, be going to and want to express a volition or intention. Each of these groups has got root and epistemic meanings (the latter expressing a logical conclusion).\(^2\)

A few more recent studies focus on ongoing changes and therefore face the problem of untangling the long-term drifts of grammaticalisation and the effect of additional short-term factors in the sometimes drastic shifts of frequency, which are observed in (mostly written) corpora over a period of merely 30 years.

Comparing the frequency of central and semi-modals in British and American English in the 1960s and the 1990s, Leech (2003) detects significant shifts in both varieties: While some central modals are drastically declining in

\(^1\) The terms modals or modal auxiliaries will be used as a superordinate term subsuming central modals and semi-modals.

\(^2\) For easier reference, these three semantic groups will in the following be summarily referred to as modals of volition, modals of possibility and modals of obligation respectively, subsuming all central and semi-modals of each semantic domain.
frequency, semi-modals are either on the increase or remain relatively stable. The modals of necessity and obligation in particular display interesting changes.

Apart from shifts in frequency of use, there are also semantic changes. According to typological studies of modality in the framework of grammaticalisation, epistemic meanings arise out of root meanings; thus, modals with epistemic semantics often display a later stage of grammaticalisation than modals with root meaning only. Comparing the semantic profiles of central modals and semi-modals, studies of selected modals by Leech (2003) and Smith (2003) among others have shown that epistemic uses are much more common among the central modals; some of them even display post-modal meanings; some semi-modals, in contrast, are only beginning to be used with epistemic readings.

These previous studies show that the modal auxiliary domain is a promising research area for studying ongoing changes; in spite of the large amount of previous works in this domain, three areas are still to be explored in more detail: First, previous studies mainly focus on written English; a detailed analysis of the ongoing changes in spoken English is still missing. Second, there are only a few in-depth investigations of modal auxiliaries in varieties of English other than British or American English. Third, a study of more recent developments is required to complement observations based on corpus data from the early 1990s.

The focus of the present investigation will be on the first research desideratum; it will explore changes in the modal auxiliaries in present-day-spoken British English. The aim is to complement the studies mentioned above in order to see if the changes observed in written English are visible in the spoken data, too. It will use newly available corpora such as the DCPSE, the Diachronic Corpus of Present Day Spoken English, which contains spoken texts of various genres from the 1960s and the 1990s; this corpus also includes social information on individual speakers. By means of the DCPSE, it will be possible to analyse the changes in spoken English and compare them to Leech’s and Smith’s (2003) studies based on the Brown Family of corpora, which contains written British and American data of the same period. With the DCPSE providing the main source of data, the

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3 When Leech (2003) and Smith (2003) conducted their analyses of written English, the DCPSE had not been completed; they use small subparts of the DCPSE to compare their results with the spoken data; these subparts, however, are too small to be representative so that these results will be complemented by the present analysis using the complete DCPSE. In their subsamples, spoken English already shows more drastic changes than written English.
focus of the study is on Standard English. Nevertheless, the results of some apparent-time studies of modal expressions of obligation in English dialects and varieties (e.g. Tagliamonte/Smith 2004, Tagliamonte 2007, Jankowski 2004) will be considered for comparison.

One important assumption of the present investigation is that in core grammatical domains such as modality language change usually starts in spoken language before it spreads to written registers. Therefore, the changes are expected to be even more advanced in the spoken data. If the changes are parallel in written and spoken language, we can speak of overall or comprehensive structural changes. But what about those changes which manifest themselves only in either spoken or written language? The corpus analysis will show that it is possible to distinguish structural change, which proceeds at different rates in speech and writing, from discourse change, which primarily has to do with genre and medium-based expectations such as politeness or indirectness.

In sum, the present analysis will be the first detailed real-time analysis of ongoing changes in present-day spoken British English, combining quantitative and qualitative analyses of the DCPSE data in a search for a principled language-historical explanation. It will be structured as follows:

Chapter 2 will introduce the theoretical background and summarise previous works on the categorisation and current changes in the modal auxiliary domain. Chapters 3-6 will present a number of different corpus-based analyses: First of all, the study will complement research mentioned above and give an overview of discourse frequencies and semantic changes of central modals and semi-modals; the aim is to analyse to what extent spoken English represents a more advanced stage of development (chapter 3); this analysis will take into account all three semantic groups referred to above. The remaining chapters will focus on the modals of necessity and obligation because recent developments are particularly evident among these forms. Chapter 4 will begin with a semantic and syntactic analysis, comparing British and American English; according to previous studies, spoken American English often shows an even more advanced stage of development than spoken British English. This analysis will be complemented by a variation analysis based on British English in chapter 5; it will explore language-external and -internal factors influencing change and variation in this domain. Finally, a discourse analysis (chapter 6) will investigate individual modals
of obligation in their larger discourse context in order to consider the role of pragmatic factors on change and variation in spoken British English.

The present analysis will show that the English modals do not only show grammaticalisation processes in their long-term development of syntactic (categorisation) and semantic properties (modality) but also with regard to ongoing changes. The very difficulty of categorising modals and semi-modals will be viewed as the continuing drift of ongoing grammaticalisation. Looking at corpus data of a thirty-year period only, this corpus-based real-time analysis of current changes will show that – when viewed from close-up and in the short term – grammaticalisation does not proceed smoothly but interacts with stylistic (written vs. spoken language), regional (British vs. American English), social and pragmatic factors (e.g. discourse context, speaker role).

2. Theoretical background and methodology

This part will introduce the theoretical background and methodology of the present analysis. It will start with the classification of modal auxiliaries in previous research with respect to their syntactic as well as their semantic characteristics. It will continue with a brief overview of the concept of current language change and introduce methods (real-time vs. apparent-time analysis), explanatory factors (Americanisation, colloquialisation and democratisation) and the data (spoken language corpora) relevant for the present analyses. The chapter will then discuss previous research and conclude with the most important research questions arising from previous studies.

2.1 Classification of modal auxiliaries in present-day English

2.1.1 Syntax: categorisation

Verbs expressing modal meanings (cf. 2.1.2) in English fall into two syntactically distinct categories: On the one hand, there is the category of verbs which will in the following be referred to as core or central modals. This group consists of must, may, might, can, could, needn’t, shall, should, will and would. On the other hand,
there is a group of verbs which will be summarily referred to as semi-modals.4 The semi-modals analysed in the present study are be going to, have to, want to, have got to, be able to, need to, used to, be supposed to, be allowed to, and (‘d) better. Terminology, in particular regarding the second group, is by no means uniform in recent studies and major reference grammars of present-day English. The main lines of thought distinguishing these two categories of modal verbs will be summarised in this section. This summary will illustrate that the difficulty of categorising the English semi-modals can be viewed as indicative of ongoing grammaticalisation processes.

The development of the central modals has long been recognised as a clear instance of grammaticalisation (Hopper/Traugott 2003: 55).5 A large amount of research has been devoted to the historical analysis of the modal auxiliaries (e.g. Warner 1993, Denison 1993: 292ff., 1998: 164ff.); Heine (2003), Kuteva (2002), Fischer (2003) among others discuss the development of core modals in the framework of grammaticalisation. The main idea of this development is that former main verbs, in a process of grammaticalisation, take on the characteristics of modal auxiliaries. At one stage in this process, from the late Middle English period onwards, one originally quite homogeneous single category of verbs was reanalysed as two: main verbs and auxiliaries. This process is summarised by Hopper/Traugott (2003: 55-58) as follows: In Old English, all verbs, including the precursors of the core modals and do, shared similar syntactic properties (e.g. negation by preceding ne, inversion to clause-initial position in questions). The pre-modals and the be-verbs, however, formed a morphologically distinct class of verbs, for example the negative form fused with the main verb (ne wille > nille, =’not intend’) and many of the pre-modals were originally preterit present verbs. In Middle English, several syntactic changes occurred: for example, the negative form was formed with not following the verb, and the past-tense forms would, might, could, must were used with present tense meaning. By the early sixteenth

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4 Some researchers refer to this group of verbs as quasi-auxiliaries or quasi-modals (e.g. Bolinger 1980, Heine 1993, Hopper/Traugott 2003, Collins 2009) or periphrastic modals (Westney 1995). The present paper will use the term semi-modals and will resort to the remaining terms only when quoting from others.

century, further quite radical syntactic changes occurred in the verb system: most verbs except the pre-modals were decreasing in negative and interrogative sentences without *do*; by the eighteenth century, *do* and *did* had become obligatory in interrogative sentences and were favoured in negative sentences for all verbs except for the auxiliaries. Thus, main verbs and auxiliaries, originally forming one category of verbs, had been reanalysed as two syntactically distinct verb classes in a gradual process of grammaticalisation: “Grammaticalization was involved at all stages: erstwhile lexical items (premodals that were main verbs and *do*) in certain linguistic constructions acquired grammatical status as auxiliaries. The changes involved reanalysis of constituent, hierarchy, and category status. To some extent, they also involved analogy” (Hopper/Traugott 2003: 58).

Thus, a cluster of factors set the scene for this development; the whole process of changes took place gradually and the changes in different verbs occurred at different times. Hopper and Traugott also point out that some of the changes are still ongoing because some “quasi-modals” (Hopper/Traugott 2003: 57) such as *be to, dare to, need to, ought to* require *do* in negatives and questions while others don’t. They quote the following examples among others: *You needn’t go, Do you need to go, *Need you go, *You don’t ought to leave, ?You oughtn’t to leave, Ought you to leave* (Hopper/Traugott 2003: 57). Krug (2000) further elaborates on the idea of still ongoing changes and points out that a similar process to the grammaticalisation of core-modals can be observed for some semi-modals “under our very eyes” (Krug 2000: 4). Before discussing Krug’s categorisation, the focus will be on the categorisation of the semi-modals in major English reference grammars. They deal with the unclear membership of some central modals and semi-modals differently.

Major reference grammars of English agree on a general distinction between main/lexical verbs and auxiliaries. Huddleston/Pullum (2002), for example, summarise the major syntactic differences between lexical and auxiliary verbs in present-day English using the acronym NICE (‘Negation’, ‘Inversion’, ‘Code’, ‘Emphasis’).
Table 2.1: Huddleston/Pullum: Nice properties to distinguish lexical from main verbs (Huddleston/Pullum 2002: 93)⁶

<table>
<thead>
<tr>
<th></th>
<th>auxiliary verb</th>
<th>lexical verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>a. <em>He has seen it.</em></td>
<td>b. <em>He saw it.</em></td>
</tr>
<tr>
<td>ii.</td>
<td>a. <em>He has not seen it.</em></td>
<td>b. <em>He saw not it.</em></td>
</tr>
<tr>
<td></td>
<td>[Negation]</td>
<td></td>
</tr>
<tr>
<td>iii.</td>
<td>a. <em>Has he seen it?</em></td>
<td>b. <em>Saw he it?</em></td>
</tr>
<tr>
<td></td>
<td>[Inversion]</td>
<td></td>
</tr>
<tr>
<td>iv.</td>
<td>a. <em>He has seen it and I have too.</em></td>
<td>b. <em>He saw it and I saw too.</em></td>
</tr>
<tr>
<td></td>
<td>[Code]</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>a. <em>They don’t think he’s seen it but he HAS seen it.</em></td>
<td>b. <em>They don’t think he saw it but he saw it.</em></td>
</tr>
</tbody>
</table>

The modal auxiliaries are treated as a subcategory of auxiliaries. Table A2.1 (appendix) illustrates the twelve syntactic characteristics of auxiliaries as opposed to main verbs, four of which apply to central modals (*can*, *may*, *must* etc.) in particular according to Quirk et al. (1985).

However, modal meanings are not only expressed by this syntactically distinct category of central modals but also by verbs such as *have to*, *have got to*, *need to* and *be going to*, which the present study refers to as semi-modals. These verbs are syntactically closer to main verbs but share the modal meanings of the central modals; their terminology in major reference grammars and previous studies on modal auxiliaries still varies. This lack of consistent terminology illustrates that the system of English modals is very dynamic. In his 1993 analysis of modal auxiliaries, Heine states:

One might also add to the list of “quasi-auxiliaries” what Matthews (1978) refers to as “half-way verbs” or what Palmer (1983: 208ff.) calls the “semi-modals” of English, like *be able to*, *have (got) to*, and *be going to*, which differ from their “fully modal” counterparts, *can*, *must*, and *will*, respectively, for example, in that they may co-occur with the modals, while modals never co-occur with each other. Are they verbs, or auxiliaries, or do they constitute a category of their own, intermediate between verbs and auxiliaries (cf. García 1967; Palmer 1974: 194-209), or is it indeed justified to refer to them as a distinct group in the first place” (Heine 1993: 15f.)?⁷

Thus, the semi-modals differ in their syntactic characteristics from the central modals but share their meanings. In order to account for their partial category membership, Quirk et al. (1985) place auxiliaries on a gradient scale with central modal auxiliaries (such as *must*, *may*, *will* etc.) at one end and lexical verbs with non-finite verb construction (*to*-infinitive/*-ing*-participle) at the other end.

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⁶ There are further differences between the two groups of verbs, e.g. differences in word order; moreover, only auxiliaries inflect for negations and have reduced forms. Cf. Huddleston/Pullum (2002: 93ff.) for details.

⁷ For references cf. Heine (1993: 146ff.)
The following figure illustrates this gradient scale. The auxiliaries which will be investigated in this study are indicated in bold print: Central modals will be compared to semi-modals, subsuming some of Quirk et al.’s marginal modals, modal idioms, and semi-auxiliaries. The focus of this study will be on those semi-modals which are semantically closest to the central modals. These are indicated in bold print.

| one-verb phrase | (a) central modals | can, could, may, might, shall, should, will, would, must |
| (b) marginal modals | dare, need, ought to, used to |
| (c) modal idioms | had better, would rather/ sooner, be to, have got to |
| (d) semi-auxiliaries | have to, be about to, be able to, be bound to, be going to, be obliged to, be supposed to, be willing to, etc. |
| (e) catenatives | appear to, happen to, seem to, get + ed-participle, keep+ing participle etc. |
| two-verb phrase | (f) main verb + hope+to-infinitive, begin+ing participle etc. |
| non-finite clause |

Figure 2.1: The auxiliary – main verb scale (adapted from Quirk et al. (1985): 137, Fig 3.40a), emphasis added.

In Quirk et al.’s (1985) analysis, Hopper/Traugott’s (2003) quasi-modals, which can be used with either main verb or auxiliary syntax (cf. above), are categorised as marginal modals and are placed in between the two focal points. In the classification of Biber et al. (1999) and Huddleston/Pullum (2002) in contrast, the marginal modals need and ought to are dually categorised, belonging both to the category of modal auxiliaries as well as to the category of lexical verbs. The present study will also regard the two uses of need as two separate verbs and analyse needn’t as a central modal and need to as a semi-modal (cf. 2.3.4; cf. also Leech et al. 2009: 94; Seggewiß 2008). Ought (to), having become very marginal in the

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8 Huddleston/Pullum (2002) do not use any auxiliary subcategories comparable to Quirk et al.’s (1985) gradient scale. Similar to Quirk et al., they establish a set of criteria distinguishing (modal) auxiliaries from main verbs (cf. also the NICE criteria discussed above). Their category of auxiliary verbs falls into two groups, modals and non-modals: under the category modals, they subsume can, may, will, shall, must, ought, need and dare (including their respective preterite forms could, would, should, might), and non-modals be, have, do and use. In their analysis, need, dare, have, do and use are dually categorised, belonging both to the auxiliary and to the lexical verb classes (cf. e.g. Need I bother? vs. Do I need to bother?). As a consequence, those verbs which will be regarded as semi-modals in this study, are discussed as special uses of the auxiliaries be, do and have or as lexical verbs. For example, have to and have got to are formulaic uses of have, and need to is categorised as a lexical verb.
present data, will also be counted as a central modal because it only differs from the core uses in its use of *to-* instead of bare infinitive (cf. Leech et al. 2009: 93 in contrast to Biber et al. 2002: 484).

This study will to a large extent follow the selection of central modals and semi-modals by Leech (2003, Leech et al. 2009) and the Longman Grammar of Contemporary English (Biber et al. 2002). Most of Quirk’s modal idioms will not be analysed in this study because they are either only very infrequent (*be willing to, be obliged to*) (cf. Leech et al. 2009: 96) or semantically different from the central modals (*be due to*). In contrast to Leech et al. (2009), however, *be allowed to* will be included in the analysis because it is semantically close to the central modal *may*. Biber et al.’s (2002: 483f.) category of the nine central modals corresponds with Quirk et al.’s (1985) list. Their group of semi-modals consists of the marginal modals *need (to), ought to, used to,* and fixed formulaic phrases, which have functions similar to the modals, namely *(had) better, have to, (have) got to, be supposed to and be going to.* “Relatively fixed expressions with meanings similar to the modal auxiliaries” such as *want to, be able to, be obliged to, be likely to, be willing to* are not included because their component parts contribute independently to the overall meaning of the phrase (cf. Biber et al. 2002: 484, 718ff.). The present analysis, however, will include *want to* in the analysis because it is increasingly displaying modal characteristics other than its core sense of volition (Krug 2000) and *be able to* will be included because of its semantic similarity with *can*.

The central and semi-modals analysed here can be grouped according to three different categories of meanings (cf. Biber et al. 2002: 485, with additions):¹⁰

a) permission/possibility/ability (*can, could, may, might, be allowed to, be able to*)

b) obligation/necessity (*must, should, (had) better, have (got) to, need to, ought to, be supposed to, needn’t*)

c) volition/prediction (*will, would, shall, be going to, want to*)

These meanings will be discussed in 2.1.2.

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¹⁰ *Used to* does not easily fit into one of these categories; it will therefore only be analysed in frequency so that the counts are comparable with previous works by Leech (2003).
Biber et al.’s (2002) grammar not only describes the grammar of present-day English, but also adds a large number of corpus-based data to depict the distribution of individual forms across different genres and registers. The frequency findings in the modal auxiliary domain provide important insights for the present analysis (Biber et al. 2002: 486f.). For example, there are great differences in overall frequencies of individual modals. While will, would and can are very common, occurrences of shall are comparatively rare. With the exception of shall/should, the past time uses of the central modals (might, could) are less frequent than their present tense equivalents.\footnote{\textquoteleft Real	extquotefrak{a} past tense uses of these modals are comparatively rare as opposed to hypothetical uses; this issue will be further investigated in the semantic analysis of chapter 3.} Semi-modals in general are considerably less common than modal verbs. Both central and semi-modals are most common in conversation and least common in news and academic prose. These register differences are striking if we look at the semi-modals: they are five times more common in the spoken data.

These findings are particularly important for the present analysis because they show that language change often establishes itself in conversation before it spreads to written registers (cf. 2.3). The smallest amount of semi-modals is therefore found in the most conservative registers such as academic prose. This is due to the fact that the group of semi-modals developed later than the group of central modals. First uses of individual semi-modals have been attested in the period between 1400-1600 according to the OED (Biber et al. 2002: 487).\footnote{Need to, ought to, used to were first attested before 1400, had better, have to and be going to between 1400 and 1659, and better and have got to were first attested after 1800 (Biber et al.2002: 487).}

Thus, the difficulty of categorising semi-modals and the frequency differences show that the English modal system is very dynamic and still in the process of grammaticalisation. Krug (2000) views the difficulty of categorising English semi-modals as indicative of ongoing grammaticalisation; he argues that a new category of emerging modals with want to, have got to, be going to and have to as its prototypical members has started to develop in the middle of the 19\textsuperscript{th} century (cf. 2.3.2).

To conclude, there are two broad categories of modal auxiliaries. First, the category of (central) modals, which forms a distinct category of verbs in present-day English; the development of this category started in Middle English in a grad-
ual process of grammaticalisation and has been completed. The development of
the second category of verbs, the semi-modals, started about two centuries later;
some verbs are still in a process of changing their categorical status. As a result,
there are two – to some extent competing – groups of verbs for the expression of
modal meanings in present-day English. While, according to previous research
(cf. 2.3.2-2.3.6), some central modals show a dramatic decrease in frequency at
least in written English, some semi-modals are on the increase. However, the
situation is apparently much more complex than just semi-modals replacing the
central modals. Thus, the present investigation of modal auxiliaries will analyse
this competition between central and semi-modals. It will investigate in how far
individual modals of both groups of verbs are used for the same or for different
functions, and whether there are any significant differences in their distribution
between the 1960s and the 1990s in spoken British English.

However, this study is not only going to analyse syntactic changes and
shifts in frequency, but also semantic changes; therefore, the next section will
introduce the concept of modality providing the background for the semantic
analysis.

2.1.2 Semantics: modality

This section is going to show that the modal auxiliaries feature as paradigm cases
of grammaticalisation not only with regard to their categorisation and syntactic
development but also with regard to their semantic development.

Each modal verb has got a set of different meanings and is used for differ-
ent semantic and pragmatic functions; these different meanings belong to the do-
main of modality. It is hard to find an exact definition of the term modality since
in the vast amount of literature on the issue, as Krug states, “agreement is largely
confined to acknowledging the difficulty of this undertaking” (Krug 2000: 39).
Bybee et al. (1994: 177) even point out that “it may be impossible to come up
with a succinct characterization of the notional domain of modality”. For a short
and comprehensive survey on mood and modality research in English, the reader
is referred to Depraetere/Reed (2006); De Haan (2006) provides an overview of
crosslinguistic works on modality. Depraetere/Reed define mood and modality as
follows:
In what follows, we shall work on the basis that all modal utterances are non-factual, in that they do not assert that the situations they describe are facts, and all involve the speaker’s comment on the necessity or possibility of the truth of a proposition or the actualization of a situation. (…) Modality may be coded in various ways, including verbal inflections, auxiliary verbs, adverbs and particles. (…) The principle means of expressing modality in English, however, is the set of modal auxiliary verbs (Depraetere/Reed 2006: 268f.).

This study is going to group the modal auxiliary verbs into the three categories ability/possibility/permission, necessity/obligation and volition/prediction (cf. 2.1.1). All of these three categories have got epistemic and non-epistemic uses. The following six examples illustrate the contrast between prototypical root and epistemic uses for each of the three categories (cf. 3.2. for further distinctions). While root meanings express a necessity/possibility/volition (intention) to do something, epistemic uses refer to “the speaker’s judgment of the likelihood that the proposition underlying the utterance is true” (Depraetere/Reed 2006: 274).13

Root uses of must express either a necessity or an obligation to do something and can be paraphrased by ‘it is necessary for... to do something’ (1). Epistemic uses, in contrast, express a logical conclusion and can be paraphrased by ‘it is necessarily the case that’ (2).

(1) John must be at home at ten (says his mother).
(2) John must be at home (because I see his bike in front of the house).

Root uses of can describe a person’s ability or option to do sth. as represented by example (3); epistemic possibility, in contrast, can be paraphrased as ‘it is possible that’ and describes a logical conclusion (4).

(3) She can swim quite well (because she learnt it as a child).
(4) It can be dangerous to swim in the sea.

Will in example (5) can be paraphrased by ‘is willing to/wants to’ and expresses a volition or intention to do something; will in example (6) conveys a prediction. It has been coded as epistemic because sentences like this express a logical conclusion with future reference. They can be paraphrased by ‘it will be the case that’.

(5) John will invite all his friends and have a big birthday party.
(6) John will turn 18 this year.

13 Depraetere and Reed (2006) regard necessity and possibility as major paradigmatic variants of modality while the present investigation adds volition as a third domain of meanings, cf. discussion below for further details.
<table>
<thead>
<tr>
<th></th>
<th>root necessity</th>
<th>root possibility</th>
<th>ability</th>
<th>obligation</th>
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<th>willingness or volition</th>
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<td>agent-oriented</td>
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<td>Quirk et al. (1985)</td>
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<td>n/a</td>
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<td>Bybee and Fleischmann (1985)</td>
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<td>evidential</td>
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<td>Palmer (2001)</td>
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<td>participant-internal</td>
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<td></td>
<td>n/a</td>
<td>Van der van der Auwera and Plungian (1998)</td>
</tr>
</tbody>
</table>

Table 2.2: Classification of (analytical) modal meanings (Depraetere and Reed 2006: 280)
Previous research in general agrees on this division into epistemic and non-epistemic modality. Table 2.2\(^\text{14}\), however, which summarises the classification of modal meanings in some recent works on modality, shows that the boundaries between root and epistemic meanings are not always consistent. Still, with the exception of Quirk et al. (1985), who use the categories extrinsic and intrinsic, and Palmer (2001), who uses subsumes evidential and epistemic modality as propositional modality, there is general agreement on the distinction between epistemic and non-epistemic modality; non-epistemic modality is also called root modality or falls into further subcategories. Some studies use the term deontic. However, as some use deontic modality as equivalent to root modality (e.g. Coates 1983, Krug 2000) but others for obligation and permission readings only (e.g. Huddleston/Pullum 2002, Van der Auwera/Plungian 1998), the present analysis will use the term deontic only while quoting from others in order to avoid misunderstandings and refer to the term root meaning instead. The term dynamic is applied in different ways, too. While some use this term to subsume ability and volition (e.g. Palmer 2001), others use it as equivalent to non-deontic (meaning obligation) readings (e.g. Huddleston/Pullum 2002). In order to avoid confusion, this term will also be restricted to references to previous works.

The table also illustrates that the boundaries between possibility, necessity and volition are by no means clear-cut either. For example, there is an ongoing debate on how to deal with the notions of volition and ability. Van der Auwera/Plungian (1998), for instance, restrict their analysis to necessity and possibility as the major modal meanings; Depraetere/Reed (2006) also regard necessity and possibility as major paradigmatic variants of epistemic and non-epistemic modality. Furthermore, a few studies argue that some uses of *will* should be solely regarded as future marker rather than as modal meaning. With regard to *can*, there is an ongoing debate whether its ability meaning can be included under the notion of possibility (cf. Depraetere/Reed 2006: 281 for a short summary of different uses of *can* and *will*). The present study, however, will follow those typological studies which include the notion of ability as a source form for possibility. Moreover, as mentioned above, it will regard the notion of volition as a third modal domain. *Will* and *be going to* will be categorised as epistemic uses of this volition.

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\(^{14}\) The table is adapted from Depraetere/Reed (2006); cf. ibid. 277ff. for short summaries of the different approaches.
domain because they express a prediction; this prediction is considered to be a logical conclusion comparable to that in the other modal domains.

As mentioned above, the individual modal auxiliaries coexist in a number of different uses. To some extent, central and semi-modals express the same or very similar meanings. *Must* in examples (1) and (2) could be substituted by *have to* without a substantial difference in meanings; *can* in (3) could be replaced by *be able to* while this replacement would not be possible in the epistemic context in (4). However, examples (5) and (6) could contain *be going to*. In short, individual modals have got a variety of different meanings, and some modals share some meanings with other modals. To some extent central and semi-modals are exchangeable.

The present investigation is going to view the coexistence of different uses of modal verbs as layering, which is a typical by-product of grammaticalisation. It will follow typological approaches of modality such as that by Bybee et al. (1994) and Van der Auwera (1998) with regard to categorisation and development of modal meanings though not necessarily in terminology. Their approach and the terminology used here will be briefly illustrated.

There is general agreement in typological literature on modality that historically, epistemic meanings derive from root uses (e.g. Sweetser 1990: 49, Bybee 1994, Traugott 2006: 107). Talking about the difficulty of defining notions of mood and modality, Bybee et al. (1994) state that “the category of mood is best viewed as a set of diachronically related functions (…), and a real understanding of modality would emerge from a study of these diachronic relations” (Bybee et al. 1994: 167). For that reason, instead of providing an exact definition of the categories mood and modality, they study the different meanings of this domain as regards their progression on certain diachronic paths in order to analyse why and how particular grammatical meanings arise in this domain (Bybee et al. 1994: 167.). From their analysis, three paths of change result for the expression of modality. (Bybee et al. 1994: 240). Two of these paths of change are used as a starting point for the study of Van der Auwera and Plungian (1998), who connect and extend them in a semantic map, which they explain as “a geometric representation of meanings or, if one likes, uses, and of the relations between them” (Van der Auwera/Plungian: 86). Their research is based on the hypothesis “that associates grammaticalization with meaning change and polyfunctionality, and it is these
diachronic and synchronic links that constitute the paths of the map” (Van der Auwera/Plungian 1998: 87). It sketches the development from premodal to modal and then to postmodal meanings for the notions of both necessity and possibility, assuming that this development shows a grammaticalisation chain (Van der Auwera/Plungian 1998: 91). The ovals represent the individual meanings of verbs in the modal domain and the arrows the grammaticalisation paths (cf. De Haan 2006: 47f.).

Figure 2.2: Semantic map (Van der Auwera/Plungian 1998: 111)

Van der Auwera and Plungian’s terminology differs from that of most other studies, as their non-epistemic uses fall into the categories ‘participant-internal’ and ‘participant-external’ possibility and necessity. The present analysis will use

15‘Participant-internal modality’ refers to a “kind of possibility/necessity internal to a participant engaged in the state of affairs” (Van der Auwera/Plungian 1998: 80). Thus, it includes meanings expressing the participant’s internal need or ability. The term ‘Participant-external modality’, in contrast, is used to refer to “circumstances that are external to the participant, if any, engaged in the state of affairs and that make this state of affairs either possible or necessary” (ibid.), thus subsuming possibility and necessity. The third domain, ‘deontic modality’, is a specific case/hyponym of participant-external modality. It “identifies the enabling or compelling circumstances external to the participant as some person(s), often the speaker, and/or as some social or ethical norm(s) permitting or obliging the participant to engage in the state of affairs” (ibid.: 81). Thus, permission and obligation count as deontic possibility/necessity. The last domain, ‘epistemic
these paths of change as a starting point for analysing the semantic development but will use more widespread terminology and add paths of change for the domain of volition/prediction; this is in line with Krug (2000: 41), Traugott (2006: 118), Bybee et al. (1994) among others. Though differing in terminology, Collins (2009) uses a tripartite classification system as well, distinguishing between epistemic, deontic and dynamic modality.\(^\text{16}\) A similar classification but different terminology will be used as a basis for the present investigation.

Apart from the uses depicted in these paths of change, there are some occurrences which will be regarded as formulaic uses. Examples are ‘I must say’, ‘I should think’ among others. In these uses, the actual source meaning, in these instances necessity, is reduced to a pragmatic function.\(^\text{17}\) As this meaning most typically occurs with the ‘older’ central modals, it will be discussed to what extent these uses can probably be interpreted as displaying a later stage of grammaticalisation (cf. 3.2 for details).

Thus, leaving pre-modal and post-modal meanings aside for the moment, the three paths of change in figure 2.3, based on Bybee et al. (1994: 194, 199), Van der Auwera/Plungian (1998: 111) and Krug (2000: 184), will serve as a basis for the semantic analysis.

Chapter 3 is going to apply these paths of change to the semantic analysis of modal auxiliaries in the DCPSE and compare the distribution of different meanings in the 1960s and the 1990s. The underlying hypothesis is that the layering of different modal meanings is indicative of ongoing grammaticalisation. Interesting issues for investigation will be how far individual modals have progressed along these grammaticalisation paths, assuming that the older central modals have progressed further than the more recently-developed semi-modals. One question will be in how far the semi-modals are replacing the central modals semantically. Are they currently developing the same semantic functions, thus the same distribution into root and epistemic uses as the central modals? Furthermore, those central modals which decline in frequency most drastically will be of par-

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\(^\text{16}\) His dynamic category consists of ability, volition and non-deontic root meanings, thus largely corresponds with Van der Auwera/Plungian’s (1998) categorisation; however, he includes the domain of volition.

\(^\text{17}\) Close/Aarts (2010) code uses like this as ‘performative modality’ as a third category alongside root and epistemic modality (Close/Aarts 2010: 174).
ticular interest. Is their decline in frequency also reflected in their semantic development, thus, can we observe a decline across the board, in all of their uses, or in specific functions only? Do they maybe even display any post-modal meanings?

**Possibility** *(can, could, may, might, be able to, be allowed to):*

- ability \(\rightarrow\) (root) possibility \(\rightarrow\) epistemic possibility
  - permission

**Necessity** *(must, should, have to, (have) got to, needn't, need to, ought (to)):*

- (root) necessity
  - epistemic necessity
  - obligation

**Volition/Intention** *(will, shall, be going to, want to):*

- volition \(\leftrightarrow\) intention \(\rightarrow\) prediction (future)
  - obligation

Figure 2.3.: Paths of semantic change analysed in the present study: possibility, necessity and volition.

Even though a thirty-year period is comparatively short for analysing ongoing semantic change, the distribution into root and epistemic meanings will still provide important insights into ongoing changes in the modal auxiliaries. This broad classification into root and epistemic uses is meant to give a first overview of the layering of different meanings and to sketch major differences between individual verbs. It will be used as a first reference point. Of course there are a number of more subtle differences between the uses of individual modals; these differences will be discussed by means of examples but will not be submitted to quantitative analysis in chapter 3; for example, there are differences between strong and weak obligation, and between subjective and objective modality. Coates (1983) categorises modal meanings in terms of fuzzy sets with a prototypical core meaning and meanings in the periphery. For example, she arranges the modals of necessity on scales ranging from weak to strong obligation. However, the corpus analysis
shows that in the actual data, even distinctions between ‘need’ (or participant-internal) and necessity or between necessity and obligation are in some cases hard to make (cf. 3.3.2). This indeterminacy does not make these classifications invalid but rather shows that the system of modal meanings is very flexible and that the pragmatic context leads to contextually enriched meaning of the semantic base.

However, in order to track ongoing language change and grammaticalisation quantitatively, a clear-cut terminology is necessary. As the distinction between root, epistemic and formulaic uses is one that can be made quite succinctly, it will serve as a first basis for the analysis. Further subcategories of meanings will be discussed by means of examples in the individual sections of chapters 3 and 4 but not analysed quantitatively. A more detailed quantitative analysis, taking into account Coates’ (1983) scale of obligation will follow in the variation analysis of modals of obligation in chapter 5, and more detailed qualitative analyses will follow in the discourse analysis presented in chapter 6.

Differences between subjective and objective modality, which have often been discussed by previous research, will not be analysed quantitatively either. This distinction has often served as a semantic differentiation between central and semi-modals, and it has been argued that must is more subjective than have to, for example (cf. Depratere/Verhulst 2006: 3 for a short summary of previous works on distinguishing must and have to as subjective/objective respectively). However, closer investigations by Depraetere/Verhulst (2006) show that this distinction no longer holds for present-day English. Viewing the semantic development as progress on diachronic grammaticalisation paths might help explain differences between modals and semi-modals. In the framework of grammaticalisation, semantic change has been claimed to involve an increase in subjectification (cf. e.g. Traugott 2003). But as the ‘more recently developed’ semi-modals are undergoing grammaticalisation, the distinctions between subjective and objective readings have become increasingly hard to make. In the present analysis, no quantitative subjective-objective distinction will be made as it is hard to establish concrete, reliable criteria for classifying an example as either objective or subjective.18

18 Previous research does not agree on a clear-cut-definition of subjective vs. objective modality; Depratere/Verhulst (2008) establish criteria to distinguish between have to and must in corpus-based analysis. Analysing must and have to with regard to these criteria, they come to the conclusion that traditional distinctions categorising must as ‘subjective’ and have to as ‘objective’ no longer hold for present-day English. Collins (2009), too, points out that because of the great num-
2.2 Approaches to current language change

Grammaticalisation theory provides the framework for the overall, long-term development of modal auxiliaries. Analysing language change in the framework of grammaticisation means talking about a gradual development; this development can take centuries. The focus of the present investigation, however, is not on the long-term development but on current changes in particular. It will follow Mair and Leech (2006), defining “current” changes in English as those developments for which there has been a major dynamic since the beginning of the twentieth century (Mair/Leech 2006: 318). It will be shown that even though grammaticalisation processes develop gradually in a long period of time, manifestations of these changes can be observed within a period of thirty years which displays a number of significant shifts. The coexistence of different forms and meanings of modal expressions will be viewed as layering, a typical principle of grammaticalisation.

This chapter is going to provide the theoretical background of current changes and will explain the most important methods, stress the relevance of spoken corpora and introduce the corpora used in this study. Three explanatory factors of current change will be explained at the end of this section.
2.2.1 Methods: real time vs. apparent time

Language change in progress can be analysed by means of two different approaches, analyses in real time or in apparent time. While real-time studies investigate language at two different points in time, apparent-time studies consider language variation among different age-groups, assuming that language change can be observed in the spoken language of younger, lower-class speakers from where it spreads into formal and written registers and will finally be used by educated middle-class speakers (Mair 2006: 29).

Ideal real-time studies are follow-up studies of sociolinguistic communities after an appropriate amount of time, which Labov (1981: 177) defines as “from a minimum of a half generation to a maximum of two” for phonetic change, and which will have to be shorter for observing lexical but longer for observing grammatical changes (cf. Mair 2006: 21). Direct real-time studies, however, face the researcher with a number of organisational difficulties, which is the reason for the relatively low number of follow-up studies (cf. Mair 2006: 21 for a list of follow-up studies, referring to Labov 1994). Electronic language corpora, spanning a longer period of time, provide a good alternative and a more easily accessible way of studying language change in progress in real time. For this reason, the Brown family of corpora, consisting of four corpora (Brown/ Frown and LOB/ F-LOB, cf. Mair 2006: 24) of 1 million words each representing British (LOB/ F-LOB) and American (Brown/ Frown) English of the 1960s and the 1990s respectively, served as foundation for a number of studies of ongoing changes. Among these studies there are the investigations of English modality by Leech (2003) and Smith (2003), which will be introduced in sections 2.3.3. and 2.3.4. The only drawback of using the Brown family of corpora is that they contain only written language data even though previous research mainly agrees on the fact that language change actually initiates in spoken language (2.2.3) Thus, the changes Leech and Smith observed in these corpora still have to be compared with spoken data in detail as they had only a small amount of spoken data (samples of roughly 80,000 words of what later became the DCPSE) available.

In order to complement these corpora of written English with spoken data, the DCPSE (Diachronic Corpus of Present-Day Spoken English) has been compiled as a spoken equivalent to LOB and F-LOB by Bas Aarts and colleagues at
the University College London. This corpus, which will be introduced in more
detail in section 2.5.2, provides the unique opportunity of conducting a corpus-
based real-time analysis of present-day spoken British English. Therefore, most of
the analyses of the present study are based on the DCPSE. Unfortunately, there is
no equivalent corpus of American English, so that investigations of spoken
American English will have to be based on synchronic data and the apparent-time
method.

The alternative approach of studying language change in progress is the
apparent-time approach, which means looking at variation across different age-
groups of sociolinguistic communities; provided that social and linguistic factors
remain constant, Labov put forward the hypothesis that linguistic differences be-
tween different generations of a language community mirror ongoing language
change (Bailey 2006: 313); language variation among different age groups can
mirror ongoing language change, assuming that the speech of each generation
more or less represents the stage of the language at the time the generation has
learnt the language (Bailey 1991: 241).

The advantage of apparent-time studies and the reason why they have be-
come a favoured method is that they are more convenient than real follow-up
studies; furthermore, they are mainly based on spoken language20, which, as stated
above, is regarded as starting point for spreading language change. This approach,
however, has got drawbacks as well. Age-grading, which means that certain
changes are correlated with a certain phase in life, are a problematic issue (Bailey
2006: 324). For example, the language of adolescence often displays non-standard
uses which are contemporary (cf. Mair 2006: 30 for a list of lexical items most
characteristic of different age-groups of speakers in spoken British English). Still,
there are quite a number of grammatical changes that can be deduced from diffe-
rences in frequency among age-groups. One example is the higher frequency of
contractions of wanna among younger speakers (cf. Mair 2006: 33; cf. also Krug
2000: 174f. for apparent-time distributions of going to, got to, want to and their
contractions; in these studies, the younger age-groups show the highest contra-
ction rates; this is regarded as indicative of ongoing language change). After pro-

20 “Apparent-time studies in a wider sense can also be based on other digitized textual sources –
for example, electronic newspaper archives from the same year but different regions – or even on
regionally stratified selections of web texts” (Mair 2006: 30).
viding some case-studies illustrating the disadvantages and advantages of apparent-time studies, Mair (2006: 33) concludes:

In sum, such exploratory studies show that it is possible to construct apparent-time analyses of ongoing change on the basis of generically stratified corpora such as the BNC. However, the greatest part of age-based and social variation that can be observed involves stable stylistic and social contrasts or is affected by age-grading, so that “apparent time” is not a suitable methodology to be used on its own. Its main use is to serve as a complement to corpus-based real-time studies, and to provide clarification in those cases in which there are strong independent grounds to assume that a change is underway (Mair 2006: 33).

In the domain of modal auxiliaries, there are some apparent-time analyses of the modals of necessity/obligation by Tagliamonte et al., who study variation of modal auxiliaries across different English dialects. These studies will be introduced in section 2.3.5. These are the only detailed investigations that have so far been made for spoken language. Still, as they don’t deal with standard British or American English but rather with selected modal expressions in British dialects (Tagliamonte/Smith 2006) or Canadian English (Tagliamonte/D’Arcy 2007), and as the reliance on apparent time evidence is limited, these studies provide important insights but will have to be compared with more detailed analyses of variation in the modals of obligation based on real-time data.

2.2.2 Explanatory factors: Americanisation, colloquialisation and democratisation

While grammaticalisation theory can explain the long-term changes, there are additional factors to consider when studying ongoing changes at close range, mostly of sociolinguistic or discourse-pragmatic nature. Americanisation, colloquialisation and democratisation consider regional, stylistic and social explanations in the process of language change (cf. Mair 2006, Leech et al. 2009).

The concept of Americanisation covers the idea that American English norms influence usage in other Anglophone communities through the demographic weight and global exposure of this variety. Note that not every occurrence of American forms in British English is due to Americanisation in this sense. Sometimes it merely indicates that both varieties develop into the same direction at different speed. The notion of colloquialisation takes into account that in the last few centuries written language has become increasingly colloquial. Finally, democra-
tisation theory relates ongoing language change with social developments. The three concepts, which are closely related with each other, will be further explained in the following section:

The concept of democratisation was adapted by Leech (2003), Smith (2003) among others, who relate shifts in the use of modals of obligation to changing attitudes in society. The first study to link changes in the modal auxiliaries with changes in society was Myhill’s (1995) analysis of modals of obligation in American post-civil-war English. He believes that people increasingly prefer to use less authoritative means of obligation than must (cf. 2.4. for a discussion of Myhill 1995).

The idea of democratisation is echoed by critical discourse analysts such as Norman Fairclough (e.g. 1992, 2006). In his work “Discourse and Social Change” (1992) he illustrates how changes in language are linked to social and cultural processes and argues in favour of connecting social change with language change. Fairclough describes a number of different changes that recently influenced discourse in society and explains the following two processes of change among others:

Let me illustrate the sorts of issue one might investigate within studies of change in orders of discourse by referring to two related types of change which are currently affecting the societal order of discourse. (…) One is an apparent democratisation of discourse which involves the reduction of overt markers of power asymmetry between people of unequal institutional power – teachers and pupils, managers and workers, parents and children, doctors and patients which is evident in a great many different institutional domains. The other is what I have called ’synthetic personalization’ (Fairclough 1989a), the simulation of private, face-to-face, discourse in public mass-audience discourse (print, radio, television). Both tendencies can be linked to a spread of conversational discourse from the private domain of the lifeworld into institutional domains (Fairclough 1992: 98, emphasis added).

At first glance, there are obvious links between the two social processes explained by Fairclough and changes in the modal auxiliaries as suggested by Myhill (1995) and others. The democratisation of discourse is exactly the phenomenon which, according to Myhill, is reflected in the decline of authoritative modals of obligation such as must; Myhill’s idea was adapted by a number of studies in the modal auxiliary domain (cf. 2.3.4 for details). However, it will be difficult to analyse analytically how processes of democratisation influence language change. For an empirical linguistic analysis of democratisation in language, corpora with a much larger amount of social information and background knowledge of speakers would
be necessary. By means of the available corpora, it is possible to observe tendencies only. Therefore, one has to be careful in linking language and social change and I would agree with Mair (2006), who states that Myhill’s link is suggestive but probably too direct, and concludes:

(…) it is in contextualised discourse, in parole, that the social context most directly shapes language. Therefore, we need the analytical categories of textlinguistics and discourse analysis in order to describe how context shapes usage and, through conventionalization of usage, ultimately also the underlying system (Mair 2006: 182).

The variation and discourse analyses (cf. chapters 5 and 6 for details) will build on these ideas and analyse some internal, external and pragmatic factors influencing change and variation in the modal auxiliaries.

Fairclough’s second idea, that of ‘synthetic personalisation’, however, has considerable potential for the study of recent change: it subsumes a number of individual changes which have been interpreted as representative of a general trend towards informality in written registers. A number of corpus-based studies have demonstrated that the style of most written English registers is becoming increasingly closer to spoken language (cf. e.g. Mair 2006, Biber 2003, Westin 2002, Mair/Hundt 1997); thus, what we see is a colloquialisation of written discourse. Mair, who introduced the term (Mair 1997: 203-205) in order to bring works of critical discourse analysts such as Fairclough, cultural historians and historical corpus-linguistics together, defines “colloquialisation” as a linguistic term covering

- a stylistic shift in twentieth-century English
  - away from a written norm which is elaborated to maximal distance from speech and towards a written norm that is closer to spoken usage, and
  - away from a written norm which cultivates formality towards a norm which is tolerant of informality and even allows for anti-formality as a rhetorical strategy” (Mair 2006: 187).

Against the background of this concept, it will be important to compare shifts in the modal auxiliaries in written and spoken language and to analyse whether the shifts already investigated in written language will be found in the spoken data as well. The changes are expected to be even more pronounced in the spoken data.

Comparing grammatical change in British and American English, for example in the modal auxiliaries, spoken American English is often regarded as “the powerhouse for language change“ (Leech 2003: 237); thus, possible Americanisa-
tion processes serve as one explanation for the origin and spread of change. By comparing the use of British and American English based on the Brown family of corpora, Hundt (1997) also points out that ongoing morphological and syntactic changes are often further advanced in American English, which can therefore be regarded as the “centre of gravity” (Hundt 1997: 147). Explaining language change by means of Americanisation, however, it is important to keep in mind that “popular discussions hopelessly overemphasize the influence of American English on the development of the language as a whole” (Mair 2006: 193). Thus, not all uses for which British English follows American English practice necessarily represent a direct American influence. Rather, a strong synchronic US influence needs to be differentiated from an American lead in a long-term historical drift affecting all varieties. Leech et al. (2009: 252ff.) identify five patterns of change and find out that most changes proceed along the “follow my leader” (Leech et al. 2009: 253) pattern of change. According to this pattern, both varieties move into the same direction with one of them taking the lead. In most instances, e.g. the decline of the core modal auxiliaries, American English is taking the lead; examples with British English on the lead are rather rare. Examples of direct dialect contact hardly occur and Leech et al. observe only a few instances of convergence, where a change is smaller or does not take place at all in one variety (Leech et al 2009: 254f.).

These different developments need closer investigation and show that it is necessary to analyse spoken data in more detail in order to investigate the interrelation between possible colloquialisation and Americanisation processes (cf. chapter 4).

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21 According to their analyses, the five patterns of change in AmE and BrE are called “regionally specific change”, “convergent change”, “divergent change”, “parallel change”, “different rates of change” and “follow my leader.” Cf. Leech et al. (2009: 253) for further explanations and examples; they also state that these five patterns are not mutually exclusive but often occur in combination.

22 The use of the mandative subjunctive has been increasing in British English; in this respect, British English is becoming closer to American English.
2.2.3 Data: Spoken language corpora – a source for studying ongoing developments

As stated above, there is quite a lot of corpus-based research on ongoing grammatical change, which is mostly restricted to the analysis of written English. However, it is generally recognized that most language change initiates in spoken language. There are different models of the spread of innovations. Chafe (1984) for example establishes a model showing that innovations are present in speaking first; writing, however, finally “begins to catch up” (Chafe 1984: 96f., quoted by Krug 2000: 195) and innovations are significantly used in both genres (Krug 2000: 195). Krug (2000) further refines Chafe’s model based on observations of *have to, have got to* and *want to* in written and speech-based genres in the ARCHER corpus and refines the same development by means of several s-shaped curves (Krug 2000: 196). According to this model, changes from below are first observed in informal speech, and while innovations are still arising in informal speech, they spread to other genres in the typical order drama, formal spoken, and finally fiction and journalistic genres. Of course this model is rather simplified; for example, there can be intersections between individual curves and not all changes will eventually spread to all genres (Krug 2000: 196ff.); nevertheless, the central conclusion for the present study is that important changes in the modal auxiliary domain apparently start in informal spoken language. Therefore, the increasing number of newly available corpora of spoken language can provide additional insights into the origin and spread of changes. Discussing new opportunities arising from the availability of spoken corpora, Halliday (2002) points out:

I think that the spoken language corpus is a crucial resource for theoretical research: research not just into the spoken language, but into language in general. Because the gap between what we can recover by introspection and what people actually say is greatest of all in sustained, unselfmonitored speaking, the spoken language corpus adds a new dimension to our understanding of language as semiotic system-process (Halliday 2002: 26).

Due to the lack of appropriate corpora of spoken language, previous studies on ongoing changes in the modal auxiliary domain had to a large extent to be based on written data. However, as Miller (2006: 67f.) points out, even though the last thirty years have seen an interest in spoken language, works on spoken language often focus on non-standard varieties while detailed analyses of spoken British and American English are rare. This is true for research on English modals, too,
since, as stated before, the only in depth investigations of spoken language are the investigations of selected modals of necessity/obligation in different English dialects by Tagliamonte et al. (cf. 2.3.5).

The accessibility of spoken corpora provides new research areas: Wichmann (2007) argues that important insights can be gained by looking not only at the transcribed texts, but also at the sound files because stress patterns and reductions can give important evidence for ongoing grammaticalisation. Furthermore, corpora such as the DCPSE make it possible to analyse not only spoken English as a whole but also to distinguish between different genres of spoken language. In order to analyse spoken language, it is important to make distinctions between different spoken genres, in which innovations spread at different speed (cf. Miller 2006: 671f. with reference to Biber et al. 1999). In his analysis “Modal use across register and time,” Biber (2004) analyses the distribution of central and semi-modals across four different registers (conversation, fiction, news and academic prose). While there are some patterns of change occurring across all registers, some patterns display important differences across different registers (Biber 2004: 210). Assuming that innovations spread from colloquial to formal contexts, the distribution into formal and informal spoken genres will provide additional insights into the direction of changes in the modal auxiliaries.

The following section will introduce the corpora used in the present analysis and discuss their advantages and disadvantages for this study.

2.2.4 Corpora used for the present analysis

DCPSE

The DCPSE (Diachronic Corpus of Present-Day Spoken English), released in unique and valuable source for the present analysis, being “the biggest single and checked orthographically transcribed spoken material anywhere” (http://www.ucl.ac.uk/english-usage/projects/dcpse/). It was compiled by Gerald Aarts and Sean Wallis as part of the Survey of English Usage at the UCL and material from two modern British English corpora: 400,000 words from the (with material from the late 1960s to the early 1980s) and 400,000 from ICE GB (International Corpus of English – Great Britain, collected in the early 1990s) so

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23 She provides the example of sorry which – if used as a discourse marker – typically occurs as shortened and reduced form and is unstressed (cf. Wichmann 2007: 81f.).
that both periods can be compared in a real-time study. The texts consist of a variety of different genres, which are displayed in table 2.3.

The first chapter, providing an overview of overall frequencies and semantics of modal auxiliaries, will look at the corpus as a whole without making any distinction between individual genres. The following chapters, in contrast, will resort to the distribution of modals across different text categories. The face-to-face conversations provide a good source for comparison with American conversation based on the CSAE. The variation analysis will distinguish between formal and informal genres and the discourse analysis will resort to different text categories in the analysis of modal expressions of obligation. Both the DCPSE and ICE GB (cf. 2.5.2) are fully tagged and parsed and can be searched with ICE CUP, providing a variety of different search strategies; they also contain background and sociolinguistic information on texts and speakers such as speaker age, gender, education and speaker role which proved to be very useful for the present study (cf. Nelson et al. 2002).

Even though the individual genres are not distributed evenly and the corpus as a whole might be relatively small as compared to other corpora of British English such as the BNC, it provides a valuable source for a corpus-based real-time analysis of English modal auxiliaries.

<table>
<thead>
<tr>
<th>Face-to-face conversations (154) 494,000 words</th>
<th>Formal (28) 90,000 words</th>
<th>Informal 403,000 words</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone conversations (14) 47,000 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broadcast discussions (28) 89,000 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broadcast interviews (14) 43,000 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spontaneous commentary (32) 95,000 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parliamentary language (7) 21,000 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal cross-examination (3) 9,000 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assorted spontaneous (7) 21,000 words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepared speech (21) 63,000 words</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2.3: Corpus text categories DCPSE rounded down to the lower thousand of words

(source: http://www.ucl.ac.uk/english-usage/projects/dcpse/, last accessed 8/2014)

*ICE GB, ICE Corpora*
The ICE corpora consist of a range of million-word corpora of different varieties of English, representing native and official-language national varieties. Their structural design aims at achieving comparability between the different corpora; each one is constructed from 500 (300 spoken and 200 written) 2,000 word samples to produce a 1,000,000 word corpus for each variety of English covered. While ICE Canada, East Africa, Great Britain, Hong Kong, India, Ireland, Jamaica, New Zealand, Nigeria, The Philippines, Singapore, Sri Lanka (written) and the USA (written) are already available, further corpora such as ICE Australia have been completed but are not yet publicly available, or are still under construction (Bahamas, Fiji, Ghana, Gibraltar, Kenya, Malaysia, Malta, Namibia, Pakistan, South Africa, Scotland, Tanzania, Trinidad and Tobago and Uganda, cf. http://ice-corpora.net/ice/index.htm, 8/2014).

As mentioned above, the 1990s data of the DCPSE consists of spoken data from the British component of the ICE corpora. ICE GB will therefore be used as a reference point for written English in the frequency analysis of chapter 3 and selected texts will be analysed as part of the discourse analysis in chapter 6; the soundfiles of ICE GB proved to be a useful tool for this kind of analysis. Apart from the British component, ICE New Zealand and Ireland will be used in order to compare modal frequencies in present-day English.

Santa Barbara Corpus of Spoken American English (CSAE)
Data of the Santa Barbara Corpus (in the following abbreviated as CSAE), the first widely-available large electronic corpus of spoken American English as used by adults, will be used as a reference point for present-day spoken American English. This corpus was compiled by John W. Du Bois, Wallace L. Chafe, Charles Meyer, Sandra A. Thompson and Nii Martey at the University of California at Santa Barbara and is also going to form the basis of the American ICE component. It consists of four parts containing approximately 249,000 words. The text samples of varying length represent different kinds of naturally occurring speech such as spontaneous dialogues, monologues, speeches, task-related interaction, radio broadcasts etc. and also contains sound files. Information about individual texts and genres are provided in the corpus manual but cannot be analysed as systematically as in the DCPSE.
(cf. [http://www.linguistics.ucsb.edu/research/sbcorpus.html](http://www.linguistics.ucsb.edu/research/sbcorpus.html), last accessed 8/2012). The CSAE will be used for a comparison of modal frequencies in present-day British and American English conversation in chapter 4.

**ARCHER**

Covering a variety of different genres and registers across four centuries, the ARCHER Corpus (A Representative Corpus of English Registers) offers a valuable resource for grammaticalisation studies. It is particularly interesting for the study of modal auxiliaries since the important changes took place during the time covered by the corpus (Krug 2000: 31). The corpus was compiled in order to allow investigations into diachronic relations of English written and speech based registers for the period from 1650 until 1990 with nine subcorpora of fifty years, which contain texts of ten registers and a total of about 1.7 million words. Three registers are speech-based (fictional conversation, drama, sermons-homilies) and the remaining are written (journals-diaries, letters, fiction, news, legal opinion, medicine, science). The texts are mainly British English; for three of the periods American English texts are available as well (Biber et al. 1993: 2ff.). These three periods will provide insights into the long-term development of central and semi-modals in these two varieties.

The accessibility of texts across centuries and the distinction between speech-based and written resources makes it possible to analyse and detect grammaticalisation in progress. The disadvantage of a corpus spanning such a variety of historical periods and different genres is that each sub-corpus, containing approximately 20,000 words per register, is rather small for a given genre so that the results will have to be interpreted with caution (Krug 2000: 37).

### 2.3 Current changes in the English modals: Previous research

Modal auxiliaries have been the subject of a vast number of studies. Previous research either focuses on their present-day semantics (e.g. Coates 1983, Palmer 1979) or their historical development (e.g. Warner 1993, Denison 1993, 1998). Since the development of modal auxiliaries has been explained in the framework of grammaticalisation (e.g. Heine 1993, Krug 2000, Kuteva 2002), there are a range of crosslinguistic, typological studies on modality, too (e.g. Bybee et al.
The steadily increasing availability of English language corpora is also reflected in studies of modal auxiliaries since a large amount of research on modal auxiliaries is based on corpus data; the following sections are going to introduce the major corpus-based or corpus-informed studies of the English modals.

### 2.3.1 Overview of corpus studies

A large amount of research on modal auxiliaries is based on data from synchronic and diachronic corpora of the English language. Table 2.4 summarises the majority of the complex corpus-based and corpus-informed research on English modal auxiliaries. The idea and some information of this table were adapted from Tagliamonte/D’Arcy (2007: 54) but extended by a further column ‘modals studied’; moreover, quite a large number of additional – partly more recent – studies have been added.

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24 Some studies have been published after completing this work in 2012 and have not been included in the present study: Two anthologies contain articles on current change, working with electronic resources and on current changes in the domain of modality: Aarts et al. (eds.) (2013), The Verb Phrase in English – Investigating Recent language Change with Corpora (with two articles by Aarts et al. and one by Stig Johansson among others) as well as Marín-Arrese et al. (eds.) (2013), English Modality – Core, Periphery and Evidentiality (with relevant articles by Bowie et al., Leech and Collins, among others). Adolphs & Carter (2013), Spoken Corpus Linguistics – from Monomodal to Multimodal, provides an overview of working with different kinds of spoken corpora. The articles by Diaconu (2012), Lorenz (2013b), Tagliamonte & Derek (2014) contain information on individual modals or modals of obligation and Aarts, Wallis & Bowie (forthcoming) analyse modal verb phrase patterns in the DCPSE.
<table>
<thead>
<tr>
<th>Research</th>
<th>Modals studied</th>
<th>Corpus</th>
<th>Style/register</th>
<th>Variety</th>
<th>Time period analysed (circa)/date of release</th>
<th>Words (ca.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berglund (2000)</td>
<td><em>gonna, be going to</em></td>
<td>BNC</td>
<td>spoken</td>
<td>BrE</td>
<td>1995</td>
<td>10m</td>
</tr>
<tr>
<td>Biber et al. (1999)</td>
<td><em>will, would, can, could, may, should, must, might shall; have to, (had) better, (have) got to, need to, (be) supposed to, ought to, be going to, used to</em></td>
<td>Longman [in part, BNC]</td>
<td>written and spoken, multi-genre</td>
<td>BrE, AmE</td>
<td>post 1980</td>
<td>40m</td>
</tr>
<tr>
<td>Biber (2004)</td>
<td><em>will, would, can, could, may, should, must, might shall; have to, (had) better, (have) got to, need to, (be) supposed to, ought to, be going to, used to</em></td>
<td>ARCHER</td>
<td>written</td>
<td>BrE, AmE</td>
<td>1650-1990</td>
<td>1.7m</td>
</tr>
<tr>
<td>Biewer (2009)</td>
<td><em>should, have (got) to, must, need to, ought to, supposed to, need</em></td>
<td>ICE BrE, AmE, NZE, FijE, SamE, CookE</td>
<td>written (press sections)</td>
<td>BrE, AmE, NZE, FijE, SamE, CookE</td>
<td>1990s onwards</td>
<td>2m</td>
</tr>
<tr>
<td>Coates (1983)</td>
<td><em>must, need, have to, have got to, should, ought, can, could, be able to, may, might, will, shall, would, be going to</em></td>
<td>LOB</td>
<td>written, multi-genre</td>
<td>BrE</td>
<td>1961</td>
<td>1m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SEU spoken</td>
<td>(spoken and unprinted written data)</td>
<td>BrE</td>
<td>1960s</td>
<td>545 000</td>
</tr>
<tr>
<td>Source</td>
<td>Phrases</td>
<td>Corpus</td>
<td>Varieties</td>
<td>Date</td>
<td>Size</td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>Collins (2005)</td>
<td>must, should, need, need, to, have to, have got to, ought to, had better, may/might as well</td>
<td>C-US</td>
<td>spoken</td>
<td>1990s</td>
<td>200 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frown</td>
<td>written</td>
<td>1992</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Collins (2009)</td>
<td>must, should, ought to, need, have to, have got to, need to, had better, be supposed to, may, can, might, could, be able to, will, shall, would, be going to, want to, be about to</td>
<td>C-US</td>
<td>written and spoken</td>
<td>AmE</td>
<td>1990s</td>
<td>150 000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICE Aus, ICE GB, ICE NZ</td>
<td>written and spoken</td>
<td>AusE</td>
<td>early 1990s</td>
<td>1m each</td>
</tr>
<tr>
<td>Depraetere/Verhulst (2008)</td>
<td>have to, must</td>
<td>ICE GB</td>
<td>spoken and written</td>
<td>BrE</td>
<td>1990-1992</td>
<td>1m</td>
</tr>
<tr>
<td>Deuber (2010)</td>
<td>can, could, will, would</td>
<td>ICE Trinidad and Tobago (still under compilation)</td>
<td>spoken</td>
<td>T&amp;T</td>
<td>2006 onwards</td>
<td>120 000</td>
</tr>
<tr>
<td>Diaconu (2011)</td>
<td>have to, have got to, must, need to</td>
<td>CSAE (complete version)</td>
<td>spoken</td>
<td>AmE</td>
<td>2005</td>
<td>249 000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICE JA</td>
<td>written and spoken</td>
<td>JA</td>
<td>2008</td>
<td>1m</td>
</tr>
<tr>
<td>Dollinger (2008)</td>
<td>can/could, may/might, must, have to, shall, will, should, would, ought to</td>
<td>Corpus of Early Ontario English (post Confederation) CONTE-pC</td>
<td>written</td>
<td>CanE</td>
<td>1776-1849</td>
<td>125 000</td>
</tr>
<tr>
<td>Source</td>
<td>Words Used</td>
<td>Corpus Type</td>
<td>Language</td>
<td>Date</td>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
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<td></td>
</tr>
<tr>
<td>Ehrman (1966)</td>
<td>can, could, may, might, will, would, shall, should, must, ought to, dare, need</td>
<td>Brown written</td>
<td>AmE</td>
<td>1961</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Facchinetti (2002)</td>
<td>can, could</td>
<td>ICE GB spoken and written</td>
<td>BrE</td>
<td>1990-1992</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Gotti et al. (2002)</td>
<td>can, could, may, might, must, shall, should, will, would</td>
<td>Helsinki written</td>
<td>BrE</td>
<td>850-1710</td>
<td>1.6m</td>
<td></td>
</tr>
<tr>
<td>Hermerén (1978)</td>
<td>shall, should, will, would, can, could, may, might, must</td>
<td>Brown written</td>
<td>AmE</td>
<td>1961</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Jankowski (2004)</td>
<td>must, have to, have got to, got to</td>
<td>Jankowski Corpus written</td>
<td>BrE &amp; AE</td>
<td>1900-1999</td>
<td>74 plays</td>
<td></td>
</tr>
<tr>
<td>Krug (2000)</td>
<td>have to, have got to, want to, be going to</td>
<td>ARCHER written and speech-based</td>
<td>BrE and AmE</td>
<td>1650-1990;</td>
<td>1.7m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BNC written and spoken</td>
<td>BrE</td>
<td>1995</td>
<td>90m written 10m spoken</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brown written</td>
<td>AmE</td>
<td>1961</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frown written</td>
<td>AmE</td>
<td>1992</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Helsinki written</td>
<td>BrE</td>
<td>850-1710</td>
<td>1.6m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOB written</td>
<td>BrE</td>
<td>1961</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>F-LOB written</td>
<td>BrE</td>
<td>1992</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Kytö (1991)</td>
<td>can, may, shall, will</td>
<td>Helsinki written</td>
<td>BrE</td>
<td>850-1710</td>
<td>1.6m</td>
<td></td>
</tr>
<tr>
<td>Leech (2003), Leech et al. (2009)</td>
<td>can, could, may, might, shall, should, will, would, must, ought (to), need(n't), be going to, 'd better, have got to, have to,</td>
<td>Brown written</td>
<td>AmE</td>
<td>1961</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frown written</td>
<td>AmE</td>
<td>1992</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LOB written, multi-genre</td>
<td>BrE</td>
<td>1961</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>need to, want to, used to</td>
<td>F-LOB</td>
<td>written</td>
<td>BrE</td>
<td>early 1990s</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
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<td>-----</td>
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<td>----</td>
<td></td>
</tr>
<tr>
<td>ICE GB-mini-sp</td>
<td>spoken (news)</td>
<td>BrE</td>
<td>1990-1992</td>
<td>80 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEU-mini-sp</td>
<td>spoken</td>
<td>BrE</td>
<td>1959-1965</td>
<td>80 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>[from the Survey of English Usage]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leech et al. (2009)</td>
<td>can, could, may, might, shall, should, will, would, must, ought, 'd better, have got to, have to, need to, want to, used to</td>
<td>BNCdemog</td>
<td>spoken</td>
<td>BrE</td>
<td>1995</td>
<td>4.5m</td>
</tr>
<tr>
<td>Longman Corpus of Spoken American English (LCSAE)</td>
<td>spoken</td>
<td>AE</td>
<td>1990s</td>
<td>n/a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lorenz (2013)</td>
<td>have got to/gotta, be going to/gonna, want to/wanna</td>
<td>COHA</td>
<td>speech-based written (drama and movie)</td>
<td>AmE</td>
<td>1810-2009</td>
<td>400 m.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CSAE (complete version)</td>
<td>spoken</td>
<td>AmE</td>
<td>2005</td>
<td>249 000</td>
</tr>
<tr>
<td>Mair (2006)</td>
<td>must, need to, needn’t, have to, have got to</td>
<td>CSAE (first release)</td>
<td>spoken</td>
<td>AmE</td>
<td>2000</td>
<td>70 000</td>
</tr>
<tr>
<td></td>
<td>must, shall</td>
<td>ICE GB</td>
<td>spoken</td>
<td>BrE</td>
<td>1990s</td>
<td>400 000</td>
</tr>
<tr>
<td>Millar (2009)</td>
<td>can, could, may, might, shall, should, will, would, must, ought (to), need(n’t), be going to, be to, 'd better, have got to, have to, need to, want to, used to</td>
<td>Time Magazine Corpus</td>
<td>written</td>
<td>AE</td>
<td>1923-2006</td>
<td>100m</td>
</tr>
<tr>
<td>Author</td>
<td>Must, have to, got to, should, ought, better, may, can, shall, gonna, will, would, could, might</td>
<td>Corpus of nine American plays, collection of Doonesbury comics</td>
<td>speech-based written</td>
<td>Language</td>
<td>Date Range</td>
<td>N/A</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
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<td>----------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Myhill (1995)</td>
<td>have to, gotta, should, oughtta, be supposed to</td>
<td>Corpus of three plays</td>
<td>written English dialogue</td>
<td>AmE</td>
<td>1970s/80s</td>
<td>n/a</td>
</tr>
<tr>
<td>Myhill/Smith (1998)</td>
<td>need to</td>
<td>COLT</td>
<td>spoken</td>
<td>BrE</td>
<td>1993</td>
<td>500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F-LOB written</td>
<td>BrE</td>
<td>early 1990s</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LLC spoken</td>
<td>BrE</td>
<td>1958-1977</td>
<td>400 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LLC written</td>
<td>BrE</td>
<td>1961</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Palmer (1979)</td>
<td>must, be bond to, have (got) to, will, might, would, should, can, shall, ought to, be able to, need, had better, will, shall, be going to, be to, dare, be willing to, were to</td>
<td>SEU spoken, written material [private letters, diaries]</td>
<td>BrE</td>
<td>1959-1965</td>
<td>1m</td>
<td></td>
</tr>
<tr>
<td>Schulz (2011)</td>
<td>would, used to, had to, had got to</td>
<td>FRED spoken</td>
<td>BrE dialects</td>
<td>1961-2000</td>
<td>2 493 645</td>
<td></td>
</tr>
<tr>
<td>Seggewiß (published as Müller) (2008)</td>
<td>needn’t, need to</td>
<td>ARCHER written and speech-based</td>
<td>BrE</td>
<td>1800-1990</td>
<td>1.7m</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OED written</td>
<td>BrE</td>
<td>1800-2000</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Author (Year)</td>
<td>Description</td>
<td>Corpus</td>
<td>Language</td>
<td>Date</td>
<td>Size</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
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<td>--------</td>
<td>----------</td>
<td>------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Smith (2003), Leech et al. (2009)</td>
<td>have to, (have) got to, need to, must, need</td>
<td>F-LOB</td>
<td>written</td>
<td>BrE</td>
<td>early 1990s</td>
<td>1m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICE GB-mini-sp</td>
<td>spoken (news)</td>
<td>BrE</td>
<td>1990-1992</td>
<td>80 000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SEU-mini-sp [from the Survey of English Usage]</td>
<td>spoken</td>
<td>BrE</td>
<td>1959-1965</td>
<td>80 000</td>
</tr>
<tr>
<td>Szmrecsanyi (2003)</td>
<td>be going to, will/shall</td>
<td>BNC spoken component</td>
<td>spoken</td>
<td>BrE</td>
<td>1995</td>
<td>10m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CSAE (first release)</td>
<td>spoken</td>
<td>AmE</td>
<td>2000</td>
<td>70,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CSPAE</td>
<td>spoken</td>
<td>AmE</td>
<td>1994-1998</td>
<td>2m</td>
</tr>
<tr>
<td>Tagliamonte (2004)</td>
<td>must, have to, have got to</td>
<td>York English Corpus (92 speakers, aged 15-91)</td>
<td>spoken</td>
<td>BrE</td>
<td>1997</td>
<td>1.2m</td>
</tr>
<tr>
<td>Tagliamonte/d'Arcy (2007)</td>
<td>must, (have) got to, got to, need to</td>
<td>Text samples drawn from Toronto English archive (152 speakers, aged 9-92)</td>
<td>spoken</td>
<td>CanE (Tor)</td>
<td>2003-2004</td>
<td>1.5m</td>
</tr>
<tr>
<td>Tagliamonte/Smith (2006)</td>
<td>must, have to, have got to</td>
<td>Archive of synchronic dialect data from England, Scotland, Northern Ireland,</td>
<td>spoken</td>
<td>BrE dialects</td>
<td>1997-2000</td>
<td>155 speakers of oldest living generation</td>
</tr>
<tr>
<td>Trousdale (2003)</td>
<td>can, may, 'ld, 'll</td>
<td>Tyneside</td>
<td>spoken</td>
<td>BrE</td>
<td>late 1990s</td>
<td>20 people, 14-24, 44-60</td>
</tr>
<tr>
<td>Westney (1995)</td>
<td><em>must, have (got) to, need (to), be bound to, should, ought to be supposed to, had better, can, be able to</em></td>
<td>Corpus of English Conversation (+ some written material from journalism, fiction)</td>
<td>spoken</td>
<td>BrE</td>
<td>1959-1965 1990s</td>
<td>1m</td>
</tr>
</tbody>
</table>

Table 2.4: Overview of previous corpus-based research of modal auxiliaries
The majority of previous research is based on British and American English. The table contains corpus-informed or corpus-based studies which provide an overview of all modal auxiliaries, and studies which focus on selected modals or groups of modals. Let’s look at large-scale synchronic investigations first: Earlier works, beginning in the 1960s (Ehrmann 1966, Herméren 1978) use corpus-data in order to explain the range of the different uses of modal auxiliaries in written British and American English without using frequency information. Coates (1983) explains the different uses of modal auxiliaries in British English not only by means of examples but also by means of quantitative information. Biber et al. (1999) distinguishes between central modals and semi-modals in British and American English, and also provides information about frequency differences across genres. Collins (2009), the most recent overall study of English modal auxiliaries, uses examples and frequency data from British, American, Australian and New Zealand English in order to explain the range and distributions of central and semi-modals (called modals and quasi-modals) in present-day spoken and written English.

Of course, research is not restricted to synchronic investigations. For example, there are studies of the long-term diachronic development of selected modals, e.g. Kytö 1991, Krug 2000, Gotti et al. 2002. They are based on the Helsinki or the ARCHER corpus. Biber (2004) contrasts the overall frequency of central modals with the frequency of semi-modals across genres using the ARCHER corpus. Leech (2003) and subsequent studies (Leech et al. 2009, Mair/Leech 2006) focus on a period of thirty years only and investigate current changes by comparing discourse frequencies of modals and semi-modals in written British and American English. These changes are the focus of a number of subsequent studies, e.g. Millar (2009) based on written American English. The modals of necessity/obligation turned out to be particularly interesting research objects in order to study these changes, as the number of investigations beginning with Smith (2003) illustrate. There are investigations of modals of obligation across varieties (Collins 2005, Biewer 2009, Diaconu 2011) and English dialects (Trousdale 2003, Tagliamonte/Smith 2006, Tagliamonte/Smith 2006) providing additional insights into change and variation. Schulz (2011) uses dialect data to study past marking in the domain of obligation, possession and past habituality. Individual or smaller sets of modals of obligation are the focus of Nokkonen (2006), Seggewiβ (2008).
Depraetere/Verhulst (2008), Close/Aarts (2010) among others. Selected modals in spoken American English have been investigated by Szmrecsanyi (2003), Mair (2006) and Lorenz (2013), among others.

The findings emerging from these corpus studies “provide an enormous body of information on English modals” (Tagliamonte/D’Arcy 2007: 55). If there is already such a large number of research, why does the present study provide yet another investigation of the English modals?

Corpus-based research in this domain started with synchronic investigations of modal usage in the 1960s based on written English. More recent studies have raised the awareness that the system of English modal auxiliaries is undergoing a drastic reorganisation at this very moment. These ongoing changes can best be explained by investigating spoken data, the source of most innovations. As the table illustrates, a comprehensive overview of ongoing changes in spoken English has not yet been conducted and will therefore be provided by this study.

The following sections are going to summarise the studies which are most relevant for this analysis of ongoing changes because they give important information and form the basis of this work.

2.3.2 Categorisation and emerging English modals

Although Dwight Bolinger pointed out in 1980 that the English system of modal auxiliaries is “now undergoing a wholesale reorganisation” (Bolinger 1980: 6), the first book-length investigation of changes in the modal auxiliaries in present-day English is Krug’s study “Emerging English modals”. He focuses on selected semi-modals (referring to them in Hopper/Traugott’s words as “quasi-modals”) and views the difficulty of categorising English modals as indicative of ongoing grammaticalisation. Further elaborating on Bolinger’s idea of a wholesale reorganisation Krug argues that a new category of English modals is emerging. Want to, have got to, be going to, have to, which are often used in their phonetically reduced forms wanna, gonna, gotta, hafta, are their prototypical central members; dare, ought to, and need to are more peripheral members of the same category. All of them express modal meanings. Moreover, the following four characteristics, which are shared to different degree by individual members of the category, summarise the major prototypical properties of an emerging modal:
(i) It takes to-infinitives only.
(ii) It takes do-support under negation and in interrogatives.
(iii) It consists of two syllables, which consist of
(iv) four phonemes. These in turn typically follow the order /CVC\o/, where the second consonant is alveolar (…) (Krug 2000: 230).

Additionally, most emerging modals display a relatively high discourse frequency and assimilation processes between the word boundary and the following to (e.g. gotta) (ibid.).

In the framework of grammaticalisation, Krug sketches their diachronic development based on a large amount of data from historical and present-day corpora of the English language, such as ARCHER, Helsinki, the Shakespeare Corpus and the BNC. As a result of these analyses, he defines the period between 1850 and 1990 as major formative period for their categorisation (cf. 2.1.1). This categorisation is “conceived as a process in which it is chiefly the more central and frequent members that act as gravitational centres and that influence the more peripheral, less frequent ones” (167). He provides detailed synchronic and diachronic corpus analyses of want to, have got to and have to and briefly sketches the development of be going to and the marginal modals need (to), ought (to) and dare to.

As far as regional variation is concerned, he finds out that American English shows to be further advanced irrespective of where the change originated; one can rather speak of independent developments in which “American English appears to be leading world English in this area of grammar” (Krug 2000: 254). As a general model for the spread of change within the language Krug suggests that interaction between several varieties is manifested in natural change from below; he observes different rates of change as well as complex interaction in spoken and written registers and points out that informal spoken language triggers most changes (cf. 2.2.3).

Krug points out that “(t)he modal domain itself is still a highly promising research area” (ibid.: 256). Among the issues interesting for further investigation, he suggests a closer investigation of the relation between American and British English, and a closer analyses of the marginal modals need (to), ought (to) and dare; furthermore he points out that more information on frequency developments of central modals – both with regard to their long-term development as well as to
their possible decline in present-day English – would provide important information. Consequently, some of these research questions will be further investigated by looking at spoken data in more detail.

2.3.3 Changes in frequency

Even though the term ‘emerging modals’ as such has not been used in research following Krug’s study, the difference between semi- and central modals gave rise to a number of further studies in the following years. In the 1990s, focus of research on syntactic changes increasingly shifted from long-term developments to changes currently going on in the English language; this trend is also reflected in studies on modal auxiliaries. As current changes can best be explained in a corpus-based real-time approach, the Brown family of corpora has served as a basis for a number of studies of the modal auxiliaries.

Using this ‘family of corpora’, Mair/Leech (2006) and Mair (2006) analyse general syntactic changes while Leech (2003) and Smith (2003) focus on modal auxiliaries in particular. Leech/Hundt/Mair/Smith (2009) revise and extend the 2003 findings of the modal auxiliaries with data from spoken British and American English, using the BNCdemog and the LCSAE. The following results are important for the present study:

Analysing a period of thirty years only, Leech (2003) and subsequent studies observe a drastic decline in the overall frequency of central modals (which he calls core modals) in written British and American English (-10.6%); simultaneously, the frequency of semi-modals is increasing (+24.65). Even though the overall picture of changes is relatively consistent across genres and varieties, there are different rates of change between American and British English, and between speech and writing.

25 Their analyses focus on written British and American English; however, the changes in written English are compared with data from the DSEU (1960s) and DICE (1990s), two ‘mini-corpora’ of 140,000 words each, which are a subpart of the DCPSE.
26 The BNCdemog contains apparent-time data of British English, distributed according to six different age groups; the different age groups, however, are not strictly comparable in size (Leech 2009: 103). The LCSAE is a five million word corpus of spoken American English of the 1990s, thus roughly contemporaneous with DICE, Frown and F-LOB (Leech et al. 2009: 100).
27 The percentages of the overall increase/decrease are based on the normalised frequencies of modals and semi-modals as presented in Leech (2003: 229). In terms of raw frequencies (Leech et al. 2009: 73, 98), the core modals decrease by 10.6% and the semi-modals increase by 9.0% in BrE and by 18.2% in AE, which is an overall increase of 13.5%.
Comparing shifts in frequency in written British and American English, Leech identifies the following trends:\(^{28}\) The data illustrate a consistent pattern of change. If the core modals are ranked by their overall frequencies in the 1960s as opposed to the 1990s, this frequency ranking remains stable. The only exception is *can*, which displays a very slight (but insignificant) increase. Looking at the decrease of core modals in general, it becomes clear that less common modals, e.g. *shall* and *ought (to)*, have declined more than frequent ones, while the more frequent core modals such as *will* and *would* remain comparatively stable (Leech et al. 2009: 73).\(^{29}\)

The semi-modals, by contrast, are gaining in frequency but their overall frequency remains far lower than that of the core modals. This group, however, displays a mixed picture: Their usage as a whole has been growing, and some semi-modals display a substantial increase in frequency (e.g. *need to* in BrE and AE, and *be going to*, *want to* in AE). Nevertheless, some semi-modals are even declining in frequency (e.g. BrE *be going to*, *(have) got to*) within the period under investigation (Leech 2003: 229ff.).

Thus, the overall picture is far more complex than just semi-modals replacing the central modals. Even though the increase in the use of semi-modals might be one explanatory factor for the decrease of core modals, it cannot completely account for the shifts and needs further research.

However, the difference between core and semi-modals is apparently becoming smaller: The modal: semi-modal ratio is 7:1 in the 1960s but only 5.4:1 in the 1990s. Leech et al. (2009: 78f.) compare their findings with spoken British and American data: in the spoken mini-corpora of British English, the modal: semi-modal ratio is 4:1 in the 1960s, and only amounts to 2.7:1 in the 1990s. With a ratio of just 1.6:1, American speech displays the most advanced state in the decline of core modals and increase of semi-modals. In this variety, the difference in their overall frequencies has almost been levelled out. This would lend support to theories of semi-modals replacing the core modals.

The further advanced state of development in the spoken corpora illustrates that the present investigation can give additional insights into changes in the

\(^{28}\) For exact numbers of central and semi-modals LOB/F-LOB cf. 2.3.3.

\(^{29}\) While the four most common modals (in frequency order: *would*, *will*, *can* and *could*) as a group display a decline of 4.7%, the group of the seven least common modals (*should*, *must*, *might*, *shall*, *may*, *ought (to)*, *need(n’t)*) have declined by 22.7% (Leech et al. 2009: 73).
modal auxiliary domain. Modals in general display a particularly high frequency in spoken language (Leech et al 2009: 77, with reference to their own analysis and to Biber et al. 1999: 486). Leech’s data shows that the decrease of central modals – especially among the less frequent ones – is considerably sharper in the spoken data. The increase of the semi-modals is more evident in spoken language, too. Since “(i)t must be remembered, however, that in the mini-corpora the numbers are too small to be significant, especially at the lower end of the frequency scale” (Leech et al 2009: 77), the present analysis is going to complement these results. It is going to investigate the differences between speech and writing more closely.

The finding that American English apparently represents the most advanced state of development shows one drawback of Leech’s (cf. Leech 2003: 237) as well as the present investigation: There is no diachronic corpus of American English comparable to the DCPSE. A real-time analysis of spoken American English would probably provide a data set of a more advanced state of changes. As mentioned above, in spontaneous American speech, the semi-modals have almost been able to catch up with the core modals. In this genre, they are more than four times as frequent as in the Brown corpora. The analyses of Leech (2003) and Leech et al. (2009) support theories of Americanisation, which regard American English as starting point of changes. The findings in the modal auxiliary domain suggest that British English is tardily following American English. The overall trend of frequency loss in the core modals is parallel in both varieties. There are only a few minor differences. On the whole, American English displays a steeper decline in the use of core modals, and it also starts and ends at a lower point than British English (Leech et al. 2009: 74). Simultaneously, written American English displays a larger increase in the use of semi-modals. Surprisingly, the development of the semi-modals starts and ends at a lower level than

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30 “(T)he general frequency of modals is much higher (by a margin of 24.8% in 1961 and 23.7% in 1991) in the spoken data than in the written data” (Leech et al. 2009: 77).
31 The increase of semi-modals in the DSEU and DICE mini-corpora reflects twice the increase as in the Brown corpora as a whole, and over four times as in LOB and F-LOB (Leech et al. 2009: 99).
32 Klein (2009) also emphasises that an American English counterpart of the DCPSE would be very suitable for “uniting the existing corpora, and serving as a unique basis for an integrated study of regional variability and diachronic change in the recent history of spoken English” (Klein 2009: 46).
33 In F-LOB, would has fallen below will and may has fallen below should, and in BrE can and could are slightly increasing in frequency.
written British English (Leech et al. 2009: 104). Thus, the overall frequency of semi-modals is smaller in written American than in written British English. While spoken American English represents the most advanced state of development, the increase of semi-modals apparently lags behind in written American English. According to Leech et al. (2009), this might be due to the fact that written American English is more receptive to prescriptive influence: there could be some kind of ‘prestige barrier’ between spoken and published written American English, which inhibits forms such as (have) got to from spreading in published language because it is a well-known taboo to use get in writing. The same ‘prestige barrier’ could be responsible for the low frequencies of the semi-modals (have) got to, had better and be supposed to in written British and American English (Leech et al. 2009: 104f.). Some of these notable differences between speech and writing will be further investigated by the present analysis.

A number of subsequent studies further elaborate on these ongoing changes. One of these studies is Neil Millar’s (2009) analysis “Modals in TIME – frequency change 1923-2006,” which illustrates significant shifts in American English newspaper language. Millar replicates Leech’s (2003) analysis using the TIME magazine corpus, which comprises 100 million words of American English newspaper texts from 1923-2006.34 His aim is to explore similarities and differences to Leech’s results throughout the 20th century as a whole. In general, Millar confirms that there are ongoing changes in the modal auxiliaries and most of his findings correspond with Leech’s results. For instance, he reports a substantial decline in the frequency of central modals and of shall, ought and must in particular; simultaneously, there is an increase in the use of semi-modals (Millar 2009: 199ff., 204ff.).

Nevertheless, some central modals which have decreased in Leech’s Brown/Frown analysis show a substantial increase in Millar’s data, namely may, can and could.35 This leads him to discuss the importance of constructing diachronic corpora with shorter chronological gaps and more numerous temporal

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34 The TIME magazine corpus is freely accessible through the online interface created by Mark Davies, Brigham Yang University under http://corpus.byu.edu/. According to Millar, the advantages of using this corpus are its size (100 million words), its internal consistency (only TIME magazine texts), its representativeness (all contents of the magazine), the time span (1923-present) and hardly any chronological gaps (one year at most) (cf. Millar 2009: 193).

35 Counting these modals in the press genres only levels out differences between Brown and TIME magazine for could and can; may, however, is still increasing (Millar 2009: 207).
stages since changes can shift quite radically between only two data points (Millar 2009: 216). In short, this analysis confirms most of the ongoing changes. The case of *may* needs further research – a closer analysis of occurrences in the press genres only might help explain the increase in the American data since in all analyses of Leech et al. (2009) as well as the present investigation its frequency is decreasing. The study, however, shows that investigating individual stages in the grammaticalisation process provides important insights because it illustrates that “(c)hanges in the frequency of language features over time clearly cannot be assumed a priori to be smooth” (Millar 2009: 208).

The remainder of this chapter will briefly summarise the results of previous research on semantic and syntactic analyses of selected modal auxiliaries, which provide important background. After looking at shifts in frequency, the next step is to examine the different uses of the individual core and semi-modals. Important research questions are: First, what happens to those modals which display a dramatic decline in frequency? Do they decline across the board or in specific uses only? Second, how do the semi-modals develop? Do they take over the functions of the declining core modals or are they used for different functions? Are there any semantic and syntactic changes indicative of ongoing grammaticalisation in both groups of verbs?

The analysis of four central modals which are declining in frequency most significantly (*must, may, should* and *shall*) suggests a trend toward monosemy of most of these verbs (Leech 2003, Mair 2006, Leech et al. 2009) in the Brown Corpora: While *should* and *may* display monosemy towards one meaning (*may* is increasingly used with epistemic meaning, the dominant meaning of *should* is weak obligation), *must* does not follow this trend, it is declining across all uses and the distribution of root and epistemic uses remains comparatively stable (Leech et al. 2009: 83ff.). In American newspaper language, however, deontic

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36 In his article “The modals ARE declining – reply to Millar’s “Modal verbs in TIME: Frequency changes 1923-2006””, Leech points out that differences between his and Millar’s results should be regarded as genre-specific, arguing that the TIME corpus cannot be regarded as representative of the English language as a whole (Leech 2011: 3); adding data from COHA, COCA as well as extending the LOB and FLOB corpora to five data points (1901, 1931, 1961, 1991, 2006), he illustrates that the modals as a whole are declining (ibid.: 4ff.) and discusses advantages and disadvantages of large online resources with many data points such as the TIME corpus as opposed to strictly comparable corpora with whole-text access such as the Brown family of corpora (ibid. 558ff.).

37 For examples and explanations of the different meanings cf. the respective sections of 3.3.
uses of must have given way to increasing epistemic uses (Millar 2009: 203). The role of must and its interplay with the remaining modals of necessity/obligation will be discussed in later chapters; the analysis needs to show if must might be following this trend, too; it will also explain to what extent its semantic development is related with its strong obligation meaning, which is becoming unpopular due to socio-cultural reasons. Shall, which is increasing most drastically, displays an even further stage in its semantic development: Mair (2006) examines the decline of shall and points out that in recent corpus data its uses are almost restricted to occurrences where shall is either used in order to achieve specific literary effects or in formulaic or metalinguistic devices such as “we shall see”; these uses are symptomatic of an advanced stage or even obsolescence of the form (Mair 2006: 102).

In short, these selected semantic analyses suggest a monosemy trend, which, however “should not be assumed without a semantic study of other modals” (Leech at al. 2009: 90). The semantic profile of those central modals which display the most radical decrease in frequency will provide important additional insights, too, assuming that spoken English represents an even more advanced stage of development. The semi-modal domain also needs further investigation. Based on data from the Brown corpora, Leech et al. (2009: 107) observe that some of the semi-modals are moving among the grammaticalisation cline towards more abstract or generalised meaning.

38 The semantic profiles of should and may in TIME magazine display the same trend as in the Brown corpora, cf. Millar 2009: 204
39 Mair’s analysis of shall in the OED illustrates that its decline has not set in within the thirty-year period under investigation; it has been decreasing throughout the 20th century already. Comparing occurrences of shall in an apparent-time study of different age-groups in the BNC, however, Mair warns of unsupported use of apparent-time data, as the frequency of shall is highest among the younger age-groups (15-24 and 0-14). These findings show that shall is probably going to persist in specific uses among the younger age groups (e.g. Shall I ...) rather than disappear completely (Mair 2006: 102).
40 A further consequence of the monosemy trend is that those meanings which have already become marginal, are declining most significantly, e.g. quasi-subjunctive uses of shall and should (Leech et al. 2009: 90).
41 Leech et al. (2009) provide some preliminary semantic analyses, based on only relatively small sets of data and draw the following conclusions: be going to shows an increasing trend towards a more generalized use, akin to will; have to and (have got to) only display very few epistemic uses. While have to overtook must in its necessity/obligation uses, the epistemic uses of must are still 10 times as frequent. Need to is a competitor for have to and might be increasing in its more abstract uses (external necessity). There is no need for the frequency of be able to to increase because can isn’t decreasing. Leech et al. provide tentative evidence that be able to is being extended to more abstract meanings comparable to permission uses of can. Want to (according to Krug 2000) dis-
Besides, the modals which are declining most visibly in frequency not only show a reduction toward one dominant meaning, their syntactic paradigms are (becoming) reduced, too. Examining those five modals which are declining in frequency most visibly (shall, ought to, needn’t, may, must), Leech et al. (2009: 80) describe their syntactic profile as ‘paradigmatic atrophy’, “that is, the number of the various grammatical contrasts which constitute the paradigm of an English verb is reduced, so that only some of the possibilities are available, or at least likely to occur.” (ibid.) For instance, negative contractions with n’t, which are generally increasing, are increasingly rare if looking at those five modals (cf. Leech et al 2009: 80-83 for further examples of syntactic reduction).

In short, those central modals which are declining most drastically, display an increasingly reduced paradigm both in their syntactic as well as their semantic profiles. The more recently emerging semi-modals, in contrast, display a greater syntactic flexibility and are increasingly used for more generalized meaning. Further analysis will help to better understand the interplay and ongoing grammaticalisation of individual modal auxiliaries.

2.3.4 The modals of obligation: real-time analyses

As the comparatively large number of previous research of modal auxiliaries (cf. 2.3.1) illustrates, the modals of necessity/obligation42 are a particularly interesting field to analyse the relationship between central modals and semi-modals. Leech et al. (2009) discuss the ‘ecology’ of obligation and necessity: “The term ‘ecology’ captures the idea that each form evolves its own niche in the expression of modality, expanding, contracting or maintaining its ‘habitat’ in relation to other, partially competing forms” (Leech et al. 2009: 114). For instance, the decrease of must has often been explained with an increasingly favoured use of semi-modals have to and need to (Smith 2003). However, intra-linguistic factors alone cannot explain the complicated shifts in the auxiliary domain. Spoken American English plays a few obligation uses in the second person, where it is possibly competing with need to as a means of formulating obligations carefully in the interest of the addressee (Leech et al. 2009: 107).

42 Some previous studies refer to this group of verbs as ‘modals of obligation’, others as ‘modals of necessity/obligation’. In the following, the term necessity/obligation will be used when quoting from others or in the semantic analysis. In the remaining contexts, the term ‘modals of obligation’ is meant to subsume obligation and necessity uses, regarding necessity as ‘weak obligation’. Cf. chapters 3.3 and 5.1.2 for details on the ‘scale’ of obligation.
represents the most advanced state of development. Therefore, changes in the modal auxiliaries have been explained by means of the concepts of Americanisation and colloquialisation. This group of verbs does not only provide a particularly interesting study object in previous research because of their ‘ecology’ but also because shifts in this domain have often been attributed to changing attitudes in society and have been explained by the concept of democratisation. The following section is going to introduce the major studies of the modals of necessity/obligation.

The whole group of modals of necessity/obligation is considerably smaller in size than the modals of volition and possibility (Biber et al. 1998: 493). Nevertheless, this is the only group of verbs where the semi-modals display a higher discourse frequency than the central modals (Collins 2009: 33). The changes in this domain have been described and explained by previous research as follows:

Quite a number of studies focus on the decline of *must* and relate it to the general increase in the frequency of semi-modals (Leech 2003, Smith 2003, Mair 2006, Leech et al. 2009, Depraetere/Verhulst 2008, Tagliamonte 2004). For instance, it is often argued that *must* is being replaced by *have to*. Smith (2003) points out that the increase of *have to* alone cannot account for the decline of *must*, and suggests that *need to*, which displays a significant increase in frequency, too, has been taking over some functions previously expressed by *must*. Two studies exclusively devoted to (*need and) need to* (Nokkonen 2006, Seggewiß (2008) in general confirm this hypothesis. Other studies, however, either don’t analyse the role of *need to* (Tagliamonte 2004, Tagliamonte/Smith 2006) or even observe a decline (Tagliamonte D’Arcy 2007) of *need to*.

One explanation for the unpopularity of *must* is its association with strong obligation. Therefore, Leech (2003) and Smith (2003) and subsequent studies regard democratisation as one explanatory factor for the changes in the modals of obligation. The first to link changes in modal usage with shifts in society was John Myhill (1995), whose ideas were adapted by a number of further studies. In his investigation of modals of obligation in American English before and after the American Civil War Myhill (1995) detects significant fluctuations in modal auxiliary usage within the two periods. Using a corpus of nine American English plays from the period between 1824-1947 and a collection of Doonesbury comics (1984), Myhill points out that after the American Civil War, the frequency of
must, should, may and shall was declining in favour of an increased use of got to, have to, ought, better, can and gonna. He relates these shifts with important functional differences in the expression of obligation between both periods (Myhill 1995: 157).

[T]he “old” modals had usages associated with hierarchical social relationships, with people controlling the actions of other people, and with absolute judgments based upon social decorum, principle, and rules about societal expectations of certain types of people. The “new” modals, on the other hand, are more personal, being used to, for example, give advice to an equal, make an emotional request, offer help, or criticize one’s interlocutor (Myhill 1995: 157).

A similar semantic shift, as Leech points out, might have occurred in the 20th century; therefore, Leech suggests a tendency towards “democratization” as one possible factor for the current changes in the modal system (Leech 2003: 237). Jankowski (2004) also believes that similar changes took place in Britain after World War II and these are reflected linguistically in the changes of modals of obligation in this variety, too (Jankowski 2004: 107f.).

However, even though Myhill’s findings seem obvious, further research in this domain is necessary. As he admits himself, with his corpus of nine American English plays and a collection of comics, Myhill uses only a very restricted set of data (Myhill 1995: 161) so that it is hard to draw general conclusions. His corpus of only literary data cannot be regarded as representative of American English as a whole. Moreover, Myhill does not submit his findings to any statistical analysis in order to indicate whether his text samples are representative and his results statistically significant.

In short, this study provides some important ideas, which have been taken up by Leech (2003), Smith (2003) and Jankowski (2004) among others; still, as argued above (2.2.2), the link between changes in modal use and changes in society remains promising but hypothetical; Myhill concludes his article by saying that “(t)he findings I have presented here are quite suggestive in pointing toward possible relationships that should be investigated, but this is about all that can be said at this stage” (Myhill 1995: 207). Thus, a closer analysis of the relationship between language change and changes in society is still necessary.

Smith (2003) concentrates on five modals of strong obligation/epistemic necessity (must, need, have to, (have) got to, need to) in written British and
American English and further elaborates on the current shifts analysed by Leech (2003).  

For easier reference, the following three figures are representations of tables 1 – 3 (Smith 2003: 248/49), depicting the distribution of these modal expressions of obligation in the written Brown- and the spoken mini-corpora:

Figure 2.4: Frequencies of obligation/necessity markers in written British English (cf. table 1, Smith 2003: 248)

![Figure 2.4](image)

Figure 2.5: Frequencies of obligation/necessity markers in written American English (cf. table 3, Smith 2003: 249)

![Figure 2.5](image)

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43 Smith (2003) uses the same corpora as Leech (2003), i.e. the Brown family of corpora and the two spoken mini-corpora, which are a subpart of the DCPSE.

44 Both figures contain frequencies normalised for 100,000 words. For exact numbers, raw frequencies and log-likelihood values cf. Smith (2003: 248f.).
The figures indicate a drastic decline of the core modals *must* and *needn’t* in both varieties of English. While *must* was the dominant modal of obligation in the 1960s, it “is now being superseded in the written data and dwarfed in the spoken data by *have to*” (Smith 2003: 249). Semi-modal *need to* displays a highly significant increase in all three corpora. *Have got to*, however, is drastically decreasing in written British English, hardly used at all in written American English and remains stable at average frequency in spoken British English. Thus, with the exception of *have got to*, the data suggests an overall rise in the use of semi-modals. Comparing British and American English, however, the figures indicate that even though the decline in core modals is sharper in American English, the increase in semi-modals is more advanced in British English (cf. 2.3.3). According to Smith (2003), this finding contradicts studies on the long-term development according to which *have to* has been rising in American English, too.\(^46\)

The study takes into account semantic/pragmatic, syntactic and stylistic/social factors to interpret the shifts and possible replacements in the obligation domain: *Must* is only thriving in its epistemic senses but declining in its root uses. Epistemic uses of the semi-modals are still rare. In its root uses, in contrast, *must*

\(^{45}\) As these figures are based on subsamples of the DCPSE only, analyses of the complete corpus will complement these figures in chapters 3 and 4.

\(^{46}\) Smith quotes a number of studies which report a rising use of *have to* in American English as well as in British English (Hundt 1997: 44, Biber et al. 1998: 209, Myhill 1995: 165, cited in Smith (2003: 250)).
is drastically declining. Smith points out that traditionally, root *must* is often compared with *have to*. In his eyes, however, the decline of *must* cannot be sufficiently explained by an increased use of *have to*. Even though *have to* is syntactically more flexible than *must*, *have to* only partially fills its gap;\(^{47}\) its frequency is not high enough to completely compensate for the decrease of *must* (Smith 2003: 249).

*Have got to*, which remains relatively stable, only replaces *must* in spoken genres, where it is most commonly used. *Need to*, in contrast, drastically increases in frequency in written and spoken English and takes over functions that were previously expressed by *must*. The following quotation with juxtaposed *have to*, *must* and *need to*, illustrates the overlapping obligation meaning of these three verbs:

(28) So it would appear that we *have to* consider just the same world as we did before. And just as we *must* revise the antecedent, to apply Stalnaker’s recipe, so we *have to* revise the consequent. What we *need to* consider, then, is whether in a world in which Oswald did not shoot Kennedy (...). (FLOB J54, Learned Writing, Smith 2003: 260)

According to Smith’s analysis, *need to* drastically increases in frequency because it is not as “overt [a] marker of power” (Smith 2003: 263f.) as *must*. Obligations expressed with *need to* take into account individual’s needs and requirements. As one typical example, Smith provides the following quotation among others:

(27) (A female MP is interviewed about women in politics)

*I’m not a feminist, but I do think you *need to* hear a balanced view of matters*”

(F-LOB, F13) (Smith 2003: 260)

Thus, as one important explanation for the changing use of modals of obligation Smith supports Myhill’s (1995) and Fairclough’s (1992) idea of democratisation and changes in society and believes that the “elimination of overt power markers” is to a large extent responsible for the changes in this modal domain.

The recent increase of *need to* and the fact that it provides a more polite way of expressing obligations than *must* or other modals of obligation is in the centre of two publications exclusively devoted to *need to* (Nokkonen 2006) and to the difference between *need to* and *needn’t* (Seggewiß 2008): In her article “The semantic variation of NEED TO in four recent British English corpora”, Soili

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\(^{47}\) The overall frequency of *have to* remains relatively stable and only rises in press genres, which, however, are most receptive to changes (cf. Mair/Hundt 1999, Smith 2003: 251ff).
Nokkonen (2006) provides an analysis of the semantic profile of *need to* in present-day British English. The analysis is based on LOB and F-LOB, LLC (London Lund Corpus, which is the 1960s component of the DCPSE) and COLT. The results of the analysis support Smith’s (2003) findings: Root necessity is the dominant meaning of *need to* and can be further divided into internal, dynamic, external and deontic readings. Subjective and weak examples, however, form the largest group of *need to* both in the written and spoken corpora. Comparing the distribution in written and spoken data, strong obligation uses are a particular feature of spoken language (the strongest and most subjective examples are found in COLT). The majority of occurrences of *need to* in F-LOB don’t express strong obligation; however, *need to* is often used with personal you/we or the passive voice, and in these contexts it does not only express an internal need but the obligation meaning is often inferable (Nokkonen 2006: 67). This fact provides further evidence that *need to* is competing with *must* and *have to*. Moreover, the semantic development has apparently developed even further in some spoken data because there are a few uses in the COLT data which Nokkonen interprets as epistemic (Nokkonen 2008: 57f.). These uses, however, are still marginal.

This study supports the view that spoken English can be regarded as the source of innovation because it illustrates the most advanced development: Both strong obligation readings as well as epistemic examples mainly occur in the spoken data.

The analysis of *needn’t* and *need to* based on the ARCHER corpus and the OED in Seggewiś (2008) points into the same direction as Nokkonen (2006) and Smith (2003). It compares the decline of *needn’t* with the increase of *need to* and points out that these two verbs reflect the ongoing changes in the modal auxiliary domain: At first glance, semi-modal *need to* might seem to replace the core modal *needn’t*. This study provides syntactic as well as semantic evidence that the two verbs have developed as two separate modal auxiliaries and have got different syntactic and semantic functions in present-day English. Both have got the main verb *need* as their source form and have developed their respective characteristics

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48 The Bergen Corpus of London Teenage English (COLT) contains 500,000 words of London teenage speech in informal settings (Nokkonen 2006: 41).
49 Since the occurrences in the ARCHER corpus (1800-1990, BrE) yield only a comparatively small number of occurrences, the findings were complemented by data from the OED (1800-2004). Cf. Mair (2003) and Hoffmann (2004) for using the OED as a corpus.
as part of two different waves of change: While needn’t developed earlier as one of the central modals and, alongside with must and shall, displays a dramatic fall in frequency in present-day English, need to has developed more recently as one of the semi-modals and displays a significant increase in frequency in the most recent data. In present-day English, need to therefore competes with must and have to as a more polite means of expressing obligations (cf. Leech 2003, Smith 2003).

In their article “Source of modality: a reassessment”, Depraetere/Verhulst (2008) analyse the semantic and pragmatic functions of must and have to in ICE GB. Their study further supports previous studies arguing that have to taking over functions previously expressed by must. By means of their quantitative analysis of root uses of the two verbs in spoken and written English, they reject claims made in major English reference grammars and some previous research that the two verbs have got different semantic profiles. For example, characterising the necessity expressed by must as subjective and that expressed by have to as objective does not provide sufficient distinctions. The two verbs rather display differences in terms of register (must being preferably used in written and have to in spoken registers) and modal strength (with must being stronger than have to). Their proposed explanation is that have to is gaining ground in the English modal system and that this development is starting in spoken English.

Jankowski’s (2004) analysis of modals of obligation is a real-time analysis of (speech-based) written English, too. Since it is closely related to Tagliamonte (2004) in methodology, it will be introduced in the next section.

2.3.5 The modals of obligation: apparent-time analyses

Due to the lack of diachronic corpora of spoken English that could be used for a real-time analysis, the investigations by Leech and Smith had to be mainly based on written English. Three studies by Tagliamonte (2004), Tagliamonte/Smith (2006) and Tagliamonte/D’Arcy (2007) further investigate the shifts in the obligation domain in spoken English using apparent-time data. They focus on the coexistence of different modals of necessity/obligation across different English dialects or varieties and view it as layering, i.e. a typical by-product of ongoing grammaticalisation. Thus, they assume that variation either across different age
groups (Tagliamonte 2004, Tagliamonte/Smith 2007) or across different (isolated/conservative as opposed to mainstream) dialects (Tagliamonte/D’Arcy 2006) represent different stages of historical development in the obligation domain; they state that claims of a “wholesale reorganisation” (Bolinger 1980) “suggest that synchronic data spanning several generations in apparent time may provide insight into mechanisms underlying ongoing grammaticalisation processes in this area of grammar” (Tagliamonte 2004: 33).

In order to analyse these mechanisms, they study not only frequencies but also functions of individual modals. To compare the degree of obligation of individual modals, all of these studies have established a set of variables, e.g. subject and verb type because “[u]nfortunately, a strong-weak distinction, either as contrastive or as a continuum, is virtually impossible to categorize impartially. To do so inevitably leads to circularity from the imposition of the analyst’s own subjective interpretations. The main point of relevance here is that there is a cline of meanings and a range of intensities encompassed by deontic modality” (Tagliamonte/Smith 2006: 345). For example, modals of obligation with definite subjects, such as

a. Brian, you’ve got to come up on the bridge. (MPT:n)
b. You have to go through my old scullery. (CLB:a)

encode a strong obligation, meaning “it is imperative that”; in contrast, modals of obligation with indefinite/generic subjects such as

a. You’ve got to take the blood when the fever’s on. (MPT:@)
b. You have to believe in ghosts to ever see it. (YRK:%)

(cf. Tagliamonte/Smith 2006: 359, quotations (18) and (19)) are assumed to express weaker obligations (cf. chapter 5 for more detailed discussions of these and other variables).

Tagliamonte (2004) analyses the distribution of must, have to, have got to, got to/gotta across different age-groups in York English50, Tagliamonte/Smith (2006) investigate must, have to and have got to based on dialect corpora from England, Scotland and Northern England,51 and Tagliamonte/D’Arcy (2007) ex-

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50 The York English corpus was collected in 1997 and contains 1.2m words of speakers aged 15-91. (Taglimonte/D’Arcy 2007: 57).
51 Tagliamonte and Smith study data from the United Kingdoms of Great Britain and Northern Ireland; it contains data from 155 speakers of the oldest generation from 1997-2000 (Tagliamonte/Smith 2006: 342)
amine the use of *must*, *have (got) to*, *got to* and *need to* in spoken English (Toronto). All three studies confirm the decline of *must*. In most varieties, there is variation between *have to* and *have got to*. The differences between *must*, *have to* and (*have got to*) have proceeded to different degrees in individual studies: In York English, representing a comparatively conservative stage of development, there is relatively stable variation between *have to* and *have got to*. Toronto English, in contrast, represents the most advanced state of changes with *have to* as the dominant means of expressing obligations.

In York English *must* is decreasing across generations and is only used in strong obligation contexts, *got to/gotta* is not very frequent in general and there is stable variability between *have to* and *have got to* (Tagliamonte 2004: 42f.). Comparing the functions of *have to* and *have got to* by means of a multivariate analysis, Tagliamonte points out that the two expressions remain vigorous and display specialisation into different domains: While *have got to* is mainly used in generic statements, *have to* preferably occurs in stative, personal statements. The differences between these two verbs, however are increasingly diminishing (Tagliamonte 2004: 53).

Tagliamonte and Smith (2006) analyse deontic modality from a cross-dialectal perspective using comparative sociolinguistic techniques. Their analysis is based on dialect corpora of England, Scotland and Northern Ireland. They, too, find out that *must* is obsolescent while there is a rise of *have to; have to* is used in contexts which have traditionally been encoded by *must* in all dialects. The situation of *have got to* is the same as in York English as it is specialising for indefinite reference. Since young women are leading in these developments in combination with systemic adjustments in grammar in combination with sociolinguistic factors advance linguistic change (Tagliamonte/Smith 2006: 341, 373).

Tagliamonte and D’Arcy (2007) focus on the use of *must*, *have (got) to*, *got to* and *need to* in spoken English dialect corpora with emphasis on Canadian English. Their variation analysis shows that Canadian English is leading the

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52 The corpus consists of text samples drawn from Toronto English archive including data of 152 speakers, aged 9 – 92 (Tagliamonte/D’Arcy 2007: 57).
53 In the whole corpus, deontic modality is distributed as follows: *must*: 15%, *have to*: 41%, *ve’s got to*: 41% *got to/gotta*: 3% (Tagliamonte 2004: 41).
54 For further discussion of generic vs. definite subjects and definite vs. indefinite reference cf. chapter 5.
55 Overall distribution of variants of deontic modality: *must*: 10%, *have to*: 44.7%, *have/ve’s got to*: 35.9%, *got to/gotta*: 9.5% (Tagliamonte/Smith 2006: 354).
changes in this domain. While *must* exits the system of deontic modality in Toronto English, *have to* has taken over this function.\(^\text{56}\) Although *got to* is used in a few contexts previously occupied by *must*, it is receding on the whole. With reference to Leech’s assumption that many English modals are reaching “the end of their useful life” (Leech 2003: 236), they point out that not only some more English modals (*must*) but also some semi-modals (*have got to*) may be moving into this direction (Tagliamonte/D’Arcy 2006: 82). Moreover, as mentioned above, they don’t see any signs of an increasing use of *need to*. Analysing the pragmatic organisation of the deontic system, they observe a specialisation of *have to* for external/objective obligation while *got to* more often expresses subjective obligation.\(^\text{57}\) Thus, in Toronto English, *have to* has generalized into definite subjective contexts and is taking over contexts that used to be encoded by *have got to* in BrE.

Finally, relating variation in the modal system with social meaning, Tagliamonte and D’Arcy demonstrate a similar trend as in the British dialect corpora: there is a female preference for *have to*, a male preference for *got to* and less social marking for *have got to*.\(^\text{58}\)

In her analysis “A transatlantic perspective of variation and change in English deontic modality”, Bridget Jankowski (2004) compares the use of *must, have to, have got to* and *got to* in British and American English. Using variationist methodology but (speech-based) written data, this study can be placed in between Leech et al.’s and Tagliamonte et al.’s analyses. It provides important insights both with regard to variation and change in the modals of obligation, and with regard to differences between British and American English. The analysis is based on twentieth-century plays of British and American English across a 100-year period (1902-2001). This selection of data makes it possible to conduct a real-time analysis, and to compare data of the two varieties while controlling for possible genre-effects (Jankowski 2004: 89). Even though the study is based on written

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\(^\text{56}\) Overall distribution of variants of deontic modality in TorE: *must*: 1%, *have to*: 72%, *have got to*: 6%, *got to*: 12%, *need to*: 8% (Tagliamonte/D’Arcy 2007: 67).

\(^\text{57}\) In British English dialects, in contrast, subjective vs. objective obligation is related to the definiteness of the subject. Tagliamonte/d’Arcy conclude that “(i)n this regard, it appears that *have to* has generalized into definite subjective contexts in TorE” (Tagliamonte/D’Arcy 2007: 82).

\(^\text{58}\) Social marking of *have got to* is socially ambivalent: On the one hand, it affirms Krug’s (2000: 62) claim that *have got to* is no longer associated as a non-standard form. On the other hand, it is – as the variation analysis demonstrates – consistently favoured among less educated. As a consequence, Tagliamonte/D’Arcy suggest that the social evaluation of *have got to* is ambiguous and this is why *got to* is the second most frequent form, having unambiguous non-standard associations (Tagliamonte/D’Arcy 2007: 81).
data, in historical corpus-based analyses, the genre drama is considered to be one of the genres which approximate spoken language as close as possible (Jankowski 2004: 89, with reference to Biber et al. 1993: 3-5). The data continues past Myhill’s (1995) data and in general corroborates his results.

Jankowski (2004) confirms the trend that *must* is declining in frequency while *have to* and *have got to* are undergoing continued grammaticalisation (Jankowski 2004: 94). The development of *must* – which becomes obsolescent and recedes to the same functions in both varieties – is parallel in British and American English at different points in time; American English is leading this change by approximately 50 years. The remaining forms, however, are taking over the functions previously expressed by *must* at different degrees in British and American English. This shows that both varieties develop independently without any direct influence of one variety upon the other (Jankowski 2004: 108).

Referring to Tagliamonte (2004), Jankowski (2004) also analyses variation according to subject and verb types in order to distinguish between markers of strong and weak necessity and obligation. It corroborates Tagliamonte’s (2004) finding that the modals of obligation are changing not only in frequency but also in “how they encode deontic modality” (Jankowski 2004: 106). In both British and American English, *must* has become specialised to epistemic modality, performative uses and is mainly used with stative verbs such as *be* and *have*.

Nevertheless, there are also differences between the two varieties: In British English, *have to* is the main expression of weak obligation. With this function, *have to* is taking over the role previously occupied by *have got to; have got to* seems to become the marker of strong obligation in this variety. In American English, in contrast, the frequency of *have to* is still increasing but its function as a marker of weak obligation is no longer significant. It was significant, however, at the beginning of the period analysed. Looking at the constraint hierarchy of *have to* at the beginning of the century, the picture is rather similar to that of *have to* in British English at the second half of the century. Jankowski regards this as evidence for the fact that British English might be undergoing the same developments as American English about 50 years later (Jankowski 2004: 102f.). The marker of strong obligation in American English is *got to*, which has substituted *have got to*. In the British data, *got to* hardly occurs.
All in all, Jankowski suggests that have got to and have to are at an intermediate stage of grammaticalisation in British English since the grammaticalisation process is – in different ways and at a different rate – similar to the grammaticalisation of these forms in American English fifty years earlier. In explaining the decline of must she follows the studies of Myhill (1995) and believes that similar changes of attitudes in society have taken place in British English in the middle of the twentieth century. “These changes could then be reflected in the changes to the forms used to express deontic modality” (Jankowski 2004: 108).

These variation analyses of the modals of necessity/obligation provide important information on the direction of changes. They also show that social factors can have a significant influence on the different distribution of modals of obligation, because many changes are being led by young women (Tagliamonte/Smith 2006, Tagliamonte/D’Arcy 2007). The studies confirm the decline of must and an increase of have to in spoken language; the role of (have) got to, however, still needs further investigation. Need to has only been analysed in Canadian English, where it apparently only plays a minor role.

2.3.6 Synchronic investigations

The fact that there are ongoing shifts in the modal auxiliary domain not only becomes clear by looking at the diachronic investigations mentioned above, but also by some studies showing the overall distribution of modal auxiliaries in different varieties of present-day English.

The most recent corpus-based investigation of modal auxiliaries in Present-day English is Peter Collins’ study “Modals and Quasi-modals in English”, which is “the largest and most comprehensive yet attempted in this area, based on an analysis of every token of the modals and quasi-modals (a total of 46,121) across the spoken and written data” (Collins 2009: 1). The analysis of regional

59 Jankowski (2004:107) quotes a number of studies which observe similar trends as Myhill points out for American post-Civil-War-English in British English after World War II. The following two examples by Görslach (1987) and Trudgill (1999) among others illustrate that this trend in society might be reflected linguistically: “It is incontestable that Britain has been linguistically conservative during the last few centuries, intent on preserving the linguistic, cultural, and political inheritance, and quite slow to accept innovation” (Görslach 1987: 56). “...because of the increasing democratization of British society, many people who in earlier generations would have abandoned their local accents for the BBC accent no longer do so. People who are upwardly socially mobile or who come into the public eye may still reduce the number of regional features in their speech, but they will no longer remove such features altogether” (Trudgill 1999: 81).
and stylistic variation in British, American, and Australian English is based on
ICE GB, ICE AUS as well as C-US. The empirical analysis falls into three parts,
corresponding with the tripartite distinction of modal meanings of the present in-
vestigation. For each groups of verbs, Collins discusses the individual modals in
terms of their deontic, dynamic and epistemic meanings and illustrates issues of
temporality, negation as well as regional and stylistic variation by means of fre-
quency data and examples from the corpora of the different varieties. The book
provides numerous tables of each modal, showing the distribution of their differ-
ent meanings in the spoken and written subcorpora. The present study is not going
to discuss his results in detail here but rather resort to them when necessary in the
individual chapters.

Collins’ overall conclusions further support previous studies on grammati-
cal change and changes in the modal auxiliary domain in particular. For example,
his results are compatible with Leech/Mair’s (2006) claim that most innovations
can be found in spoken American English. British English is found to be most
conservative with Australian English having an independent status somewhere in
between the two. With regard to the quasi-modals he points out that their overall
frequency is highest in American English, and particularly evident in the spoken
component. The overall frequency of modals, in contrast, is highest in British
English even though the differences are less pronounced than in the category of
quasi-modals. Considering only those modal auxiliaries in which modals and
quasi-modals can be regarded as being in competition, i.e. have to, need, to, be
going to, want to as opposed to must, should, need, will and shall, American En-
glish is most advanced in the rise of quasi-modals, being followed by Australian
and then by British English. A comparison of frequencies in speech and writing
reflects the same order, with most central modals being found in written British
and least in written American English (cf. 4.2. for a discussion of modals of obli-
gation in different varieties of English).

Graeme Kennedy (2003) analyses variation in the distribution of modal
auxiliaries comparing their different forms across written and spoken genres in the

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60 As among the collection of ICE (International Corpus of English) corpora the American com-
ponent was not yet available at the time of his analysis, Collins makes use of the C-US corpus,
containing spoken texts from the Santa Barbara Corpus and written texts from the Frown corpus in
order to match the remaining two ICE corpora as closely as possible (cf. Collins 2009: 3f.)
61 Collins uses the term quasi-modals to subsume Quirk et al.’s (1985) semi-auxiliaries (have to,
need, to, want to....) and modal idioms (would rather, had better).
BNC. His analysis is based on all words that have been tagged as modals, namely *will*, *would*, *can*, *could*, *may*, *might*, *shall*, *should*, *must*, *ought to*, *need to*, *dare*, and *used to*. Though Kennedy does not relate his observations to any theories of current change in the modal auxiliary domain and focuses mainly on the central modals, some of his observations are useful for the present analysis. Comparing his results with Coates’ (1983) analyses, which are based on LLC and LOB (1960s), he points out that the frequency of *must* and *shall* is proportionately less in the BNC (1990s), while that of *can* and *will* may have increased. These findings correspond with observations of previous research as well as the present investigation since these are among the verbs revealing significant shifts in frequency within the thirty-year period. Moreover, he observes systematic variation between occurrences in written vs. spoken texts, different genres as well as affirmative vs. negative contexts and the complex verb phrase structure. For example, the overall frequency of modals is higher in the spoken component, and this difference is greater than that observed by Coates for the 1960s. 62

2.4 Interim summary and research questions

Previous research shows that modal auxiliaries are paradigm cases of grammaticalisation not only in the remote past but also in the present. Both their categorisation and their development of modal meanings can be viewed as processes of grammaticalisation; this process is still ongoing as the coexistence of different forms and meanings illustrates. The period of thirty years only displays a number of highly significant shifts and fluctuations in frequency, the syntactic and the semantic development of central and semi-modals. Research on modal auxiliaries is mainly based on written language even though spoken language is regarded as the starting point for most cases of language change. Therefore, this study will analyse shifts in the modal auxiliaries in spoken language in more detail in order to complement previous studies by means of a real-time analysis of spoken English; the aim is to investigate differences between speech and writing and to find out which factors influence ongoing change and grammaticalisation, which does not proceed smoothly.

62 The overall frequency of modals is 21.6/100000 words in BNC spoken as opposed to 14.6/10000 words in the written component of the BNC.
The present study will focus on the following research questions:

Chapter 3:

1. Comparing recent changes in the modal auxiliaries in written and spoken English, which shifts represent cases of true language change and which shifts should be regarded as stylistic differences between speech and writing only?

2. Looking at the semantic profile of central and semi-modals it will be important to find out what happens to those central modals which decline most visibly in frequency. Previous research has attested a tendency towards monosemy for selected modals. Which general picture can we see? Do the central modals which decline in frequency decline across the board or in specific functions only? Which semantic changes take place in the development of the semi-modals, do they take over the functions of the former central modals?

3. Comparing British and American English with regard to their long-term development, to what extent do the two varieties show parallel developments?

The focus of chapters 4-6 is on the following issues:

4. Assuming that American English represents a more advanced stage of development, can spoken American English indicate future directions of change?

5. The modals of obligation are particularly interesting study objects. To what extent can we talk about ‘ecology’ of obligation? Which role do democratisation processes play in the competition among the modals of obligation? To what extent are syntactic characteristics relevant because the semi-modals are syntactically more flexible?

6. Where do the changes start? Is there a difference between formal and informal spoken registers? Which further external and internal factors have an impact on modal auxiliary use?

7. To what extent do the discourse context and the role of the speaker influence the use of different modals of obligation? Which role do persistence phenomena play?

The combination of different methodological approaches (frequency analysis, semantic and syntactic analysis, variation analysis and discourse analysis) will further illuminate the interplay of language-internal and -external factors in current changes.
3. English modal auxiliaries: recent developments

3.1 Frequencies

The following analyses will now build on previous approaches of long-term and short-term changes of English modals and combine the two lines of thought. This chapter will provide an overview of ongoing developments in spoken English. It will compare frequencies in spoken and written British English based on the DCPSE and on previous research. The results will be discussed in relation to their long-term development in the ARCHER corpus. The chapter will conclude with a semantic analysis of central and semi-modals in present-day English in the context of ongoing semantic change and grammaticalisation.

3.1.1 Spoken vs. written British English (ICE GB)

The aim of this chapter is to find out whether recent diachronic changes in the English modal system observed in written English are evident in spoken English as well. For a first overview, the following two figures are based on data from ICE GB and compare the frequencies of central and semi-modals in spoken and written English in the 1990s across all spoken and written genres.

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63 The LLC component of the DCPSE contains spoken data from 1958-1977 and the ICE GB component includes data from 1990-1992. For easier reference and comparability, this will in the following be abbreviated as 1960s/LLC and 1990s/ICE GB respectively.

64 All figures of chapter 3 contain all occurrences of the modals under investigation, irrespective of their syntactic and semantic contexts to provide a first overview of overall distributions.

65 Cf. table 3.1 in the appendix for log-likelihood scores indicating which differences are statistically significant.
Two things are immediately obvious: First, the overall frequency of central modals is higher than that of the semi-modals; for instance, the most frequent central modals occur around 3,500 times/1,000,000 words as opposed to the most frequent semi-modals ranging between 1,000 and 1,400 occurrences/1,000,000 words. Second, some modals display significant differences in the frequency of

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66 *Ought to*, to some extent oscillating between modal and semi-modal characteristics, was included under the category modals in this first overview.
spoken and written English. This is particularly evident in the semi-modal domain (e.g. *be going to, (have) got to, want to*).

Grouping the central modals according to overall frequencies, *would, will* and *can* represent the highest frequency both in written and in spoken English (ranging between 2,800 and 3,800/1,000,000 words). *Could, should, may* and *might* range in the middle (between 500 - 1,500) while *shall, ought to, needn’t* and *dare* hardly occur in any of the two genres (around 200 and less).

Looking at differences in spoken and written English in more detail, it becomes clear that among the most frequently used central modals, *would* is the only modal displaying a higher overall frequency in the spoken data. Differences between speech and writing of *will, can* and *could* are statistically not significant (cf. appendix table 3.1). Among those central modals which display an average frequency, *may* illustrates the most drastic difference between the two genres, occurring almost twice as often (192%) in written language; while *may* is the fourth most frequent modal in written language, it is only seventh most frequent in the spoken data. *Should, must* and *ought to* also occur more often in written than in spoken language.

In the semi-modal domain, *be going to, have to, and want to* are most frequently used, ranging between 1,000 and 1,400 occurrences/1,000,000 words (in spoken language). As compared to the overall frequency of central modals, however, this corresponds to the frequency of those central modals ranging in the middle, such as *could* and *should*. Significantly, all of these semi-modals occur more often in the spoken than the written corpora; of all modals, *be going to* displays the most obvious difference between spoken and written language, as 89% of all instances were found in the spoken data. Spoken *(have) got to, be able to, be allowed to* and spoken *used to* are ranging in the middle (around 200-350) and written *used to, be supposed to, (‘d) better, and be allowed to* are hardly used in both genres; *be supposed to*, however, occurs about 70% more often in spoken language.

With regard to differences between spoken and written genres, it becomes clear that almost all semi-modals display a higher frequency in spoken English; *be able to* is the only semi-modal occurring more often in writing than in speech (23%). The emerging modals *be going to, have got to and want to* as well as *have*
to display the most obvious differences; be going to and have got to are even almost restricted to spoken language (89% and 88% spoken).

If language change initiates in spoken English, the variation evident between spoken and written texts might be interpreted as a sign of ongoing change. The most important observation is that in general, the modals are more frequently used in written and the semi-modals in spoken texts: may, needn’t, should and must occur a lot more frequently in the written than the spoken corpora; in an apparent-time analysis this might be seen as indicative of gradual obsolescence. Will, could and might, in contrast, are distributed evenly in both genres since their difference in frequency is not significant statistically; this might either indicate ongoing diachronic extension or just diachronic stability. Would, ought (to) and can, however, are more frequently used in spoken English. At this point it is hard to tell in how far this difference is due to genre-specific differences or language change. In the case of would the higher frequency in spoken language might relate to typical spoken uses such as ‘would like to’. As regards the situation of the semi-modals, it is observable that most of them occur more frequently in spoken texts. This is most evident for be going to, have got to, have to and want to; this might indicate a gradual spread of these forms, having started in spoken language.

However, as a comparison of written and spoken English is not sufficient to analyse current changes, a diachronic comparison of the modals in present-day spoken English will reveal if the differences between spoken and written English reflect ongoing change or should rather be seen as signs of stable variation based on medium and genre. Thus, for a more detailed real-time analysis of the current changes in the modal auxiliary domain in spoken and written English, the following section will present the results of a real-time analysis of spoken language based on the DCPSE. This will be compared with Leech’s (2003) analysis of LOB and F-LOB.

3.1.2 Spoken British English 1960s vs.1990s (DCPSE)

Figures 3.4 and 3.5, displaying the normalised frequency of modals and semi-modals in the DCPSE, confirm the hypothesis of ongoing changes in the modal auxiliary domain in present-day spoken English. Some central modals display a marked decline in the frequency of spoken English, among them must, shall and
may; needn’t as well as dare are almost non-existent. Some semi-modals, in contrast, in particular be going to, want to and need to, are clearly on the increase. Thus, this first overview confirms the hypothesis of ongoing frequency changes in spoken English.

Figure 3.4: Frequency of core modals (DCPSE), normalised for 1,000,000 words

Figure 3.5: Frequency of semi-modals (DCPSE), normalised for 1,000,000 words

Which of these changes indicate current change? After section 3.2.1 above presented a synchronic comparison of modals in speech and writing, the following
section will now present a diachronic analysis. It will investigate the shifts in spoken English in more detail and then compare the DCPSE data with Leech’s analysis of written British English based on LOB and F-LOB; the aim is to see in how far speech and writing illustrate parallel or divergent developments. Table 3.1 illustrates that within this period of only thirty years, most central modals have declined in overall frequencies.

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<td>3861</td>
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<td>-7</td>
<td>3028</td>
<td>2694</td>
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<tr>
<td>will</td>
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<td>3629</td>
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<td>+13.5</td>
<td>2798</td>
<td>2723</td>
<td>1.2</td>
<td>-2.7</td>
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<tr>
<td>can</td>
<td>3487</td>
<td>3721</td>
<td>3.38</td>
<td>+6.7</td>
<td>1997</td>
<td>2041</td>
<td>0.4</td>
<td>+2.2</td>
</tr>
<tr>
<td>could</td>
<td>1838</td>
<td>1630</td>
<td>5.49</td>
<td>-11.3</td>
<td>1740</td>
<td>1782</td>
<td>2.4</td>
<td>+2.4</td>
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<tr>
<td>may</td>
<td>840</td>
<td>508</td>
<td>36.45</td>
<td>-39.5</td>
<td>1333</td>
<td>1101</td>
<td>22.8</td>
<td>-17.4</td>
</tr>
<tr>
<td>should</td>
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<td>918</td>
<td>4.88</td>
<td>-14</td>
<td>1301</td>
<td>1147</td>
<td>10.1</td>
<td>-11.8</td>
</tr>
<tr>
<td>must</td>
<td>1006</td>
<td>460</td>
<td>91.38</td>
<td>-54.3</td>
<td>1147</td>
<td>814</td>
<td>57.7</td>
<td>-29.0</td>
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<tr>
<td>might</td>
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<td>686</td>
<td>7.57</td>
<td>+5.7</td>
<td>777</td>
<td>660</td>
<td>9.9</td>
<td>-15.1</td>
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<tr>
<td>shall</td>
<td>414</td>
<td>214</td>
<td>28.55</td>
<td>-48.3</td>
<td>355</td>
<td>200</td>
<td>44.3</td>
<td>-43.7</td>
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<tr>
<td>ought (to)</td>
<td>273</td>
<td>102</td>
<td>35.7</td>
<td>-62.6</td>
<td>104</td>
<td>58</td>
<td>13.4</td>
<td>-44.2</td>
</tr>
<tr>
<td>need(n’t)</td>
<td>35</td>
<td>5</td>
<td>11.9</td>
<td>-85.7</td>
<td>87</td>
<td>52</td>
<td>9.0</td>
<td>-40.2</td>
</tr>
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<td><strong>Total</strong></td>
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<td><strong>15734</strong></td>
<td><strong>19.35</strong></td>
<td><strong>-7.19</strong></td>
<td><strong>14667</strong></td>
<td><strong>13272</strong></td>
<td><strong>73.6</strong></td>
<td><strong>-9.5</strong></td>
</tr>
</tbody>
</table>

Table 3.1: Frequency of central and semi-modals in the DCPSE as compared to LOB and F-LOB (cf. Leech 2003: 227f.); significant differences in frequency between the 1960s and the 1990s are indicated in bold print. 67

In order to compare the use of modals in spoken English with Leech’s analysis of written English, tables 3.1 and 3.2 contain the frequency results normalised for 1,000,000 words as well as the frequency difference between the 1960s and 1990s

67 Frequencies from the DCPSE were normalised for 1,000,000 words in order to be comparable with Leech’s findings.
in percent and the log-likelihood scores in order to prove whether the investigated shifts are statistically significant (cf. Leech 2003: 228).\(^6\)

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<tbody>
<tr>
<td><strong>BE going to</strong></td>
<td>1355</td>
<td>1778</td>
<td><strong>25.26</strong></td>
<td>+31.2</td>
<td>254</td>
<td>246</td>
<td>0.2</td>
<td>-3.1</td>
</tr>
<tr>
<td><strong>BE to</strong></td>
<td>56</td>
<td>37</td>
<td>2.29</td>
<td>+27.27</td>
<td>454</td>
<td>376</td>
<td><strong>7.6</strong></td>
<td>-17.2</td>
</tr>
<tr>
<td><strong>(’d/ had) better</strong></td>
<td>60</td>
<td>52</td>
<td>0.26</td>
<td>-13.3</td>
<td>50</td>
<td>37</td>
<td>2.0</td>
<td>-26.0</td>
</tr>
<tr>
<td><strong>HAVE got to</strong></td>
<td>442</td>
<td>444</td>
<td>0.00</td>
<td>+0.5</td>
<td>41</td>
<td>27</td>
<td>2.9</td>
<td>-34.1</td>
</tr>
<tr>
<td><strong>HAVE to</strong></td>
<td>1189</td>
<td>1308</td>
<td>2.47</td>
<td>+10</td>
<td>757</td>
<td>825</td>
<td>2.7</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>NEED to</strong></td>
<td>10</td>
<td>275</td>
<td><strong>39.64</strong></td>
<td>+2650</td>
<td>55</td>
<td>198</td>
<td><strong>83</strong></td>
<td>+249.1</td>
</tr>
<tr>
<td><strong>WANT to</strong></td>
<td>838</td>
<td>1170</td>
<td><strong>24.39</strong></td>
<td>+39.6</td>
<td>357</td>
<td>423</td>
<td><strong>5.4</strong></td>
<td>+18.5</td>
</tr>
<tr>
<td><strong>used to</strong></td>
<td>306</td>
<td>275</td>
<td>0.27</td>
<td>-10.1</td>
<td>86</td>
<td>97</td>
<td>0.6</td>
<td>12.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4256</strong></td>
<td><strong>5339</strong></td>
<td><strong>+25.4</strong></td>
<td><strong>2054</strong></td>
<td><strong>2229</strong></td>
<td><strong>+8.6</strong></td>
<td></td>
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</tr>
</tbody>
</table>

Table 3.2: Frequency of semi-modals in the DCPSE as compared to LOB and F-LOB (Leech 2003: 228); significant differences in frequency between the 1960s and the 1990s are indicated in bold print.

Which changes in spoken language are particularly significant? Auxiliary *need* is virtually non-existent in the 1990s and with 85.7% displays the most drastic decline in frequency. It is interesting to note, however, that semi-modal *need to* represents the most dramatic increase in frequency in its domain. Decreasing by 54.3%, the decline of *must* is very highly significant, being followed by *shall* (–

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\(^6\) The log-likelihood scores were calculated using the following web calculator: [http://ucrel.lancs.ac.uk/llwizard.html](http://ucrel.lancs.ac.uk/llwizard.html); levels of significance: 95th percentile, 5% level, \(p < 0.05\), critical value = 3.84; 99th percentile, 1% level, \(p < 0.01\), critical value = 6.63; 99.9th percentile, 0.1% level, \(p < 0.001\), critical value = 10.83; 99.99th percentile, 0.01% level, \(p < 0.0001\), critical value = 15.13. Log-likelihood scores were calculated with bare frequencies, not with normalised figures.
48.3%) and may (-39.5%). Should (-14%), could (-11.3%) and also would (-7%) show a minor decrease in frequency.

Quite surprisingly, however, will increases by 13.5% and might is more often used in the 1990s than in the 1960s as well (+5.7%). Can is the only modal auxiliary which remains relatively stable as its increase by 6.7% is statistically not significant. On the whole, those modals which already occur less frequently in both corpora, display the most dramatic shifts. The most frequent ones, in contrast, either remain relatively stable, decrease only slightly or, as regards will, are even increasing.

Although the overall decline in frequency of central modals is more pronounced in written (-9.5%) than in spoken English (-7.5%), the findings of many individual modals are more pronounced in the spoken data. In written language, ought (to) and shall are declining most drastically, being followed by need(n’t) and must. These four verbs display an even more drastic decline in spoken than in written English. Might, slightly increasing in frequency in spoken English, decreases by 15.1% in written language. The slight increase of written could and can is statistically not significant; thus, these two remain relatively stable. Will, however, rising by 13.5% in the spoken corpora, does not display any significant changes in written English.

The semi-modal, in contrast, provide a relatively mixed picture. Historically, their development of modal characteristics occurred more recently (cf. Krug 2000, cf. also 2.3.2). While some of them apparently gained ground as markers of modality and display a drastic increase in frequency in present-day English, others are declining again: As mentioned above, need to increases most drastically within the thirty-year period (2650%) and want to increases by 39.6%. These two modals display the most obvious increase in frequency in written English as well (want to by 8.5%, need to by 24.9%) though again the shifts in spoken English are even more significant. Be going to is far more often used in spoken than in written English (1355 vs. 254 in the 1960s). While it remains relatively stable in LOB/F-LOB, it increases by 31.2% in the DCPSE.

The frequency shifts of have to and (have) got to are statistically not significant. Both occur more often in spoken language; this genre difference is particularly evident for (have) got to, as its frequency in spoken English is 10 times higher than in written English. Be to, displaying a relatively low overall fre-
quency, occurs more often in written than in spoken English; however, it is declining in both genres; had better is not very frequent in any of the corpora under investigation.

Which general insights can be drawn from these results first with regard to differences between spoken and written language, and second with regard to language change in general? Two important issues in this context are: Do spoken and written language display the same overall development? This could be interpreted as a comprehensive structural change affecting the core grammar of the English language. Are there independent developments in speech and writing? This could imply that differences between the spoken and written language reflect independent diachronic developments based on medium and genre which could be seen as additional discourse-relevant complications super-imposing themselves on structural change, sometimes reinforcing it but sometimes leading to stalling or even to temporary or permanent reversals.

As this frequency analysis has shown, the overall frequency shifts are by no means uniform in both genres so that for some modals, a closer differentiation between speech and writing is necessary: Looking at the central modals more closely, it becomes clear that some modals, which are declining in frequency, are declining more drastically in spoken than in written language. These are may, must, shall, ought (to) and needn’t. At the same time, the semi-modals want to and need to display a more drastic increase in frequency in the spoken data. In all these instances, spoken language probably indicates a more advanced stage of development because the overall trend (decline or increase) is parallel in both genres.

However, some verbs display divergent trends in speech and writing: For instance, while will remains relatively stable in frequency in written language (its slight decrease is statistically not significant), it increases in the spoken data. Could, in contrast, decreases in spoken language while it remains relatively stable in the written data. The difference between speech and writing is even more evident in the case of might, which to some extent increases in frequency in spoken but decreases in written language. Thus, will, could and might display divergent trends in speech and writing so that for these verbs it is hard to draw any conclusions with regard to possible language change. Their differing developments could rather be interpreted as genre-specific.
The frequency differences between spoken and written corpora are even more evident while looking at some semi-modals: The overall frequency of *be going to* is relatively low in the written data, where it remains relatively stable. However, its frequency in the spoken corpora is five times as high and it even increases by 31%. Consequently, the present data does not provide any indication of a spread of *be going to* in written language. The same applies to the development of *have got to*, which is hardly used in written language.

Looking only at spoken data based on the DCPSE, *be going to*, *need to* and *want to* as well as *have to* and *have got to* are those semi-modals which undergo important changes and are increasingly being used as modal markers. All of them belong to Krug’s category of emerging modals (Krug 2000). If frequency is regarded as a determinant of categorisation, *need to* apparently moves closer towards the central members of the emerging modals while its modal counterpart *needn’t* almost disappears in spoken language. Although at first glance this might suggest that *need to* substitutes modal *need*, it will be discussed in section 3.3.2 that *need to* has wider functions and is not just a compensation of declining *need* (cf. also Seggewiß 2008).

*Have to* and *have got to* seem to have reached a saturation point because they don’t increase in frequency any longer while *be going to* is still being used quite often.69 So far, however, this increase is restricted to spoken language. While *need to*, *want to* and *have to* display similar overall trends in spoken and written language, the spread of *be going to* as well as the development of *(have)* *got to* are clearly genre-related. This differentiation is particularly important for *(have)* *got to*, which hardly occurs in the written data; as further analyses of the modals of obligation will show, *(have)* *got to* is often used as a style marker as it typically occurs in more colloquial contexts. In a similar analysis as the present one, Klein (2009 and Klein 2007, as reported in Mair 2008: 186f.) analyses the frequency of *must*, *have to*, *(have)* *got to* and *need to* and compares it Smith’s (2003) and Leech’s (2004b) results. The present analysis to a large extent yields the same results; minor differences (e.g. an increase in the use of *have to*) may be due to the fact that Klein’s investigation is restricted to the first three years of

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69 In Close /Aarts (2010:175), the frequency of *have to* is increasing by almost 32%. However, they only analyse the frequency of contexts in which *have to* alternates with *must*; chapters 4 and 5 of this analysis will take into account alternate contexts as well and lead to similar results.
each DCPSE sub-corpus (1958-1960; 1990-1992). *Have to* is the most common modal of obligation and *must* is declining drastically, at an even larger rate in spoken than in written language. *Have* *got to* declines more sharply in written English, by contrast, and remains stable in the spoken data. This difference between *have* *got to* in speech and writing and in British and American English (Smith 2003) shows that *have* *got to* is mainly used in informal contexts and one example of a clear syntactic Briticism (Mair 2008: 187).

To conclude, this first overview of frequencies has shown that there are substantial changes not only in the grammar of written but also in the grammar of spoken language. As discussed in 2.2.2, spoken language is often the starting point for change and innovations. The frequency findings have shown that both in the increase of some semi-modals (*need to, want to*) as well as in the decrease of some central modals (*needn’t, may, must, shall, ought (to)*), spoken language represents a further advanced stage of development. The analysis, however, has also shown that some modals display genre-specific developments which might display stylistic variation rather than ongoing language change. *Be going to* and *have got to* are so far mainly used in spoken language. The use of *will* and *might* increases only in spoken language while *could* remains stable in written but decreases in spoken language.

So far, the decline of the central modals cannot exclusively be attributed to an increasing use of semi-modals which replace them; the situation is far more complex. The next section is going to contextualise these recent changes with regard to their long-term development.

### 3.1.3 Long-term trends from 1750 to 1990 (ARCHER)

The focal point of the present analysis is on recent developments in the English modals; however, in order to view these shifts in their long-term context, this section is going to give a short overview of the historical development of modals and semi-modals in the last two centuries.

The ARCHER corpus, covering a variety of different written and speech-based registers and genres from 1650 - 1990, offers a valuable source for studying the long-term development of modal auxiliaries. With approximately 20,000 words, however, each sub-corpus is relatively small so that the results will have to
be interpreted with caution (Krug 2000: 37). Furthermore, the present analysis is restricted to the three periods in which both British and American texts are available. Because of the relatively low number of total words, no distinction is made between written and speech-based genres. The focus is rather on the overall trend in the long-term development of modals and semi-modals in both British and American English. The following six figures compare the frequency development of the modal auxiliaries in the two varieties from 1750 to 1990 and include occurrences in all possible forms and syntactic environments. In contrast to the figures above, the modal verbs are grouped according to their semantics, allowing for a better comparison of central and semi-modals in each individual semantic domain.

In general, the findings from the ARCHER corpus confirm the ongoing developments. Most changes, however, have not started recently but have already been going on in the middle of the 18th century. Though taking place at different speed and sometimes to different extent, on the whole there are parallel developments in British and American English. In general, the frequency of semi-modals is lower than that of the central modals; however, in some cases this situation is apparently on the reverse as most semi-modals are on the increase while central modals are declining in frequency. The only exceptions can be found in the possibility domain as can and could are steadily increasing in both varieties, while be able to as well as be allowed to are increasing only slightly or display a very low total frequency and among the modals of volition, would is increasing as well.

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70 Of course there are some genre-specific differences, but the aim of this analysis is to observe overall tendencies. Biber (2004) analyses overall frequencies of modal expressions in the ARCHER corpus and across different registers in both British and American English. He finds out that central modals have been declining across registers while semi-modals have only been decreasing in the genres drama and personal letters. Moreover, he observes some genre-specific differences across registers in the use of can, would, may and must. It needs to be kept in mind that in the ARCHER corpus, the thirty-year period investigated in the DCPSE and in Leech’s (2003) analysis is subsumed under one period 1950-1990, which obscures some of the results of recent developments (cf. Biber 2004: 210). Krug (2000) also distinguishes between speech-based and written registers and finds out that most changes in the emerging modals are further advanced in speech-based text, which corresponds with the differences between speech and writing observed in chapter 3.

71 The ARCHER corpus was searched by means of wordsmith version 5.0. Since the corpus is untagged, some forms irrelevant for the analysis were sorted out manually (e.g. be going to and have (got) as full verbs).
Figure 3.6: Development of modals of volition in British English 1750-1990 (ARCHER, normalised for 100,000 words)

Figure 3.7: Development of modals of volition in American English 1750-1990 (ARCHER, normalised for 100,000 words)

Looking at the volition domain (figures 3.6 and 3.7), it becomes clear that *shall* has been dramatically decreasing in frequency in both British and American English. In the American English data from 1750, *shall* is slightly more frequent than in British English, but after that continuously loses in frequency. In British English, it declines relatively constantly throughout the whole period. Thus, the sharp decline detected for *shall* in LOB, F-LOB and the DCPSE illustrated above, marks the end of a longer process. *Be going to* starts increasing in frequency at the beginning of the 18th century in American English and about a century later in British English as well. Quite surprisingly, the number of occurrences of *will* steadily
decreases in both varieties. This decrease is more drastic in the British data, where it even starts before *be going to* gains in frequency. Thus, the increase of *be going to* cannot exclusively be explained as compensation for *will*. Furthermore, the development of *will* apparently differs in spoken and written English, as the long-term development in the ARCHER corpus, containing only written data (though some genres, e.g. drama, can be analysed as speech-based written genres), reports a steady decrease and it remains relatively stable in Leech’s LOB/F-LOB data. In the DCPSE, in contrast, it is increasing in frequency by 13.5% within the thirty-year period. It still remains open whether the development in spoken English is further advanced and *will* is going to increase again or whether *will* has got different profiles in speech and writing. Looking at its frequencies in ICE GB, however, its difference in spoken and written English is not significant statistically.

*Would* starts increasing in frequency in the American data and one century later in the British data as well. In American English, the frequency even started to fall again slightly, which would be in line with the findings from the DCPSE and the Brown Corpora. Thus, in the case of *would* and *be going to*, the development is further advanced in American English, while British English is faster with regard to the decline of *will*. *Shall* is steadily decreasing in both varieties.

The possibility domain is the only one illustrating a drastic increase in the use of central modals as *can* sharply increases in British English from 1750 and in American English in the 1850-1950 period. In Leech’s data, *can* remains relatively stable in frequency while it is increasing by 13.5% in the DCPSE. *Could*, in contrast, decreasing in the DCPSE and Brown/Frown but remaining relatively stable in LOB/F-LOB, is steadily increasing in American English throughout the whole period and in British English since the middle of the 19th century. The decrease of *may* and *might*, attested in the real-time analyses of both spoken and written data above, has not started recently either but was already going on in the middle of the 19th century, as the findings from the ARCHER corpus demonstrate. *Be able to* as well as *be allowed to* still belong to the less frequently used modals of possibility; while there are hardly any instances of *be allowed to* in any of the corpora under investigation, *be able to* very slightly gains in frequency in both British and American English, but its overall normalised frequency for 100,000 words remains to be lower than 20 in the whole period. Comparing the stages of
development in British and American English on the whole, the situation is similar to that of the modals of volition. American English is leading the changes of some (e.g. of could) but not all modals (e.g. not of can).

Figure 3.8: Development of modals of possibility in British English 1750-1990 (ARCHER, normalised for 100,000 words)

Figure 3.9: Development of modals of possibility in American English 1750-1990 (ARCHER, normalised for 100,000 words)

The steady rise in the frequency of semi-modals in both British and American English is most evident in the modals of obligation. With must and needn’t sharply declining this is the only group of verbs where the semi-modals in the long-run might replace the central modal. Have to is the most frequently used mo-
dal of obligation in the two varieties and occurs more often in British than in American English. The remaining semi-modals show a relatively low frequency but there is a minor increase in frequency in both varieties. *Have got to* is slightly more often used in American English and *need to*, not being used very frequently in total, is used a little more often in American English, too. With respect to the development of central modals, *must* steadily decreases in American English but remains relatively stable in British English. The decline in the use of *should*, starting in the 1850s, shows a parallel development in British and American English and *need* displays only a very low frequency across the whole period.

On the whole, it needs to be pointed out that the overall frequency of semi-modals is still lower than that of the central modals in the ARCHER corpus. As regards the question of Americanisation, the data point towards parallel developments in the two varieties with slightly different speed. American English is often, though not always, as the development of *have to* demonstrates, leading the change. All in all, however, the developments of modals and semi-modals in British and American English point into the same direction. The more detailed comparison of modals of obligation in British and American conversation in chapter 4 will provide further information on the stages of development of the two varieties.

![Figure 3.10: Development of modals of necessity/obligation in British English 1750-1990 (ARCHER, normalised for 100,000 words)](image)

72 However, in all other corpora of Smith’s (2003) LOB/F-LOB analysis (cf. 2.2.3), and in the comparison of modals of obligation in CSAE vs. ICE GB conversation (cf.4.3) the increase of *have to* is more advanced in American English so that this finding has to be interpreted with caution and might be due to differences in corpus design.
In general, the present findings confirm Krug’s (2000: 170f.) interpretation of the historical development of the emerging modals in British and American English as cases of independent natural change. Comparing the development of have to, have got to, want to and be going to in the British and American fiction and drama components of the ARCHER corpus, he points out that even though in present-day English American English largely represents a further advanced stage, the differences between the two varieties are not as striking historically. As the rise of emerging modals started from similar levels at approximately the same time, the two varieties probably represent independent developments and there are no signs of American English influencing British English in the evolution of new modal verbs (Krug 2000: 172).

### 3.2 Semantic distribution in the 1960s and the 1990s (DCPSE)

The following section will present an overview of the semantic distribution of modal verbs in the 1960s and the 1990s based on random samples of 100 occurrences of each verb for each period analysed.\(^73\) For this first overview, the samples contain both uncontracted and contracted forms (can’t, needn’t, won’t) as

\(^{73}\) It is true that – compared to the overall frequency of some modals (e.g. 1600 occurrences of will in ICE GB) – a sample of 100 verbs is relatively small. In order to test whether this selection of 100 examples is representative, for some verbs (can, will, would) a further subsample of 100 verbs for each period was analysed. The fact that an analysis of these samples yielded almost the same distribution was taken as proof that the samples are representative. Tables 3.2 - 3.4 (appendix) contain the exact numbers of the semantic distributions.
well as clitics (‘ll, ‘ve), inflections (having to, had to etc.) and the base forms (can, will, have to etc.) in order to be comparable with Leech’s (2003) and Smith’s (2003) results. The following chapters focussing mainly on the modals of obligation, in contrast, will present more differentiated analyses and investigate only those contexts in which modals and semi-modals are interchangeable syntactically, i.e. exclude inflections and negations (cf. Aarts/Close 2010: 171, Tagliamonte/D’Arcy 2007: 64).

In order to investigate the semantic functions of central and semi-modals, this section is divided into three parts according to the three semantic domains of volition/intention, possibility/permission and necessity/obligation. Each group of verbs was analysed with regard to root and epistemic uses, assuming that epistemic uses represent a later stage of grammaticalisation than root uses. Additionally, some modal verbs, especially the central modals, occur in a number of formulaic uses where they don’t express their original meanings but are rather used as fixed phrases. For this reason, formulaic uses constitute a third category. Examples will be discussed in the relevant chapters.

Root meanings fall into a number of different subcategories (cf. 2.1.2) and there are a large number of indeterminate cases in which it is hard to distinguish between necessity and obligation or between ability and possibility. In example 1), for instance, it is difficult to tell whether must expresses a general necessity or an obligation imposed from an external authority. Similarly, can in example 2) can either interpreted as ability or as possibility.

1) we must do something about that immediately (DCPSE_DL_C03_201)

2) oh I can do something but I think you've got a couple of problems to solve obviously (DCPSE_DL_C04_391)

In order not to blur the semantic analyses through too subjective categorisations, for this first overview, only a distinction between root and epistemic modality will be made. More specific differences will be discussed and illustrated by means of corpus examples but will not be quantitatively analysed.

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74 Of course some examples are difficult to categorise as they are ambiguous between root and epistemic meanings and a number of studies subsume ambiguous examples under one category ‘indeterminate’. This indeterminacy is typical of ongoing semantic change and grammaticalisation and I am aware of this difficulty. However, instead of establishing a third category for indeterminate instances, the larger discourse context or the sound files normally helped in categorising individual modals. In general, I regarded the root meaning as the standard category and subsumed
3.2.1 Ability, possibility and permission: *can, could, may, might, be able to, be allowed to*

This section is going to discuss the semantic distribution of the six modals of possibility. Historically, *might* and *could* are the past tense forms of *may* and *can*. (In the same way as *would* and *should* have their origin as past tense forms of *will* and *shall*). It is thus debatable whether these verbs should be categorised as past tense forms of *may* and *can* whether they should be treated as separate modal verbs. Analysing their semantic development, it becomes clear that the use of these modals as markers of past tense is only a minor usage. The more important meaning expressed by these verbs is one which Palmer terms ‘modal past’, i.e. they express a greater tentativeness than their present tense equivalents or are used in unreal conditions (Palmer 2001: 14). The following example containing both *can* and *could* illustrates this difference:

3) one *can* read Vanity Fair but you *couldn’t* read all <,> sorts of things like The Book of Snobs now could you really  (DCPSE_DL_B10_335)

While according to the speaker it is possible to read Vanity Fair, it is impossible or relatively unrealistic to read all of the other books. Leech characterises these uses in a similar way by distinguishing between primary (*can, may, will* etc.) and secondary modals (*could, might, would*) (Leech 3 2004).

For this reason, the secondary or past modals were treated separately from their present tense equivalents. Nevertheless, ‘real’ past-tense uses and hypothetical/unreal non-past uses of *could* and *might* were distinctly analysed. Thus, uses that can be paraphrased by ‘was/were possible …/was/were able to’ were coded as past tense.

**CAN**

*Can* belongs to the most frequently used modal verbs and is the only central modal which remains stable in frequency. It is mainly used for the expression of root possibility (97% in each period) where it conveys both participant-internal possibility (i.e. ability) and participant-external possibility. In the few remaining instances, *can* expresses epistemic necessity (3%). These epistemic uses must be examples which were hard to categorise under this broad category unless they were clearly epistemic or formulaic.
relatively recent since in the 1980s, Coates still states that *can* is the only central modal which does not occur in epistemic contexts (1983: 85). Both root and epistemic meanings of *can* will be illustrated by means of the following examples:

4) I mean I *can* sing which you know if you *can* make music a little <,> but <<,> perhaps <,> some approximation to it <,> you’re not left with anything afterwards though whereas you are if you <,> uhm paint
(DCPSE_DL_B08_407)

5) The only way you *can* make police forces genuinely accountable to the people they serve is by having a regional structure and police committees which are the police authority for that area (DCPSE_DL_D13_32)

6) and therefore <,> I think we should <,> remember those of our ancestors that we *can* find out about and take an Interest in them <,> because out of them came Everything that we are (DCPSE_DL_D02_274)

Example 4) represents participant-internal possibility, i.e. ability; this type of possibility occurs relatively rarely with *can*. In most cases, the possibility depends on some external circumstances, for example in 5) and 6), where the possibility of making police forces accountable or of finding out about the ancestors depends on having a regional police authority or on evidence that can be found about the ancestors.

*Can* in quotation 7) expresses a permission to have anything. Examples of the type illustrated in 8) are characterised as implication uses by Palmer (1990: 86), because “*can* is often used not simply to say what one can do or what is possible, but actually to suggest, by implication, that what is possible will, or should, be implemented” (Palmer 1990: 86).

7) anything that doesn't say anything on it you *can* have <,>
(DCPSE_DL_B60_297)

8) The ones on the right hand side you *can* just cut the tops off and leave them (DCPSE_DL_B03_5)

Leech argues in a similar way as Palmer. He explains some colloquial uses of *can* where it is used as a proposal of future action which often functions as a democratic imperative (Leech 2004a: 74).

Co-occurring with verbs of perception and permission, or so-called private verbs (cf. Palmer 1990: 86, Biber 1988: 242, Quirk et al. 1985: 1181), *can* often
loses its notion of ability and possibility and is used as an aspectual marker.\textsuperscript{75} In 9), for example, there is hardly any semantic difference between 'I don't believe it' and 'I can't believe it'. Being used with verbs such as see, feel, believe, imagine or remember, can substitutes for the unacceptable progressive form (cf. Coates 1983: 90f., Leech \textsuperscript{3} 2004a: 75) and denotes a state rather than an event (Leech \textsuperscript{3} 2004a: 75).

9) I actually \textit{can't} believe it (DCPSE_DL_B07_642)

10) I can imagine Leslie being surprised but America <,,> she must know that <,,> lots of dentists who are women <,,>

11) I can remember them but I c well I \textit{can't} remember my dates <,,> (DCPSE_DL_B23_75)

It could be argued that these cases fall under a separate category ‘formulaic’ uses. However, since in examples with remember, as represented by 11), the meaning of ability is still inherent; occurrences of can with private verbs were finally subsumed under the category ‘root’ meaning.

The following examples illustrate epistemic uses of can, meaning ‘it is possible that’. In the following quotation can occurs in a negative context and means ‘there can’t be any doubt.’

12) Well there \textit{can} certainly be no doubt that one has general importance that uh runs through all of the faiths and that is this general idea that uh secularisation means something <,,> (DCPSE_DL_D08_11)

While some researchers believe that can as a marker of epistemic possibility is restricted to negative contexts (e.g. Huddleston 2002: 1980, quoted by Collins 2009: 98), the present findings are in line with Collins’ (2009: 98) observation that assertive epistemic uses are not only developing in American English but also in other varieties. Collins quotes two examples from ICE GB.\textsuperscript{76} In the present

\textsuperscript{75} Public verbs and private verbs are two classes of verbs taken from Quirk et al. (1985: 1181-2), public verbs are for example acknowledge, admit, agree, assert, claim, complain, declare, deny, explain, hint, insist, mention, proclaim, promise, protest, remark, reply, report, say, suggest, swear, write (Biber 1988: 242). Private verbs are verbs such as anticipate, assume, believe, conclude, decide, demonstrate, determine, discover, doubt, estimate, fear, feel, find, forget, guess, hear, hope, imagine, imply, indicate, infer, know, learn, mean, notice, prove, realize, recognize, remember, reveal, see, show, suppose, think, understand.

For can being used with private verbs cf. also Palmer 1990: 86 ff.

\textsuperscript{76} Collins (2009: 98) identifies a total of 112 epistemic uses of can (both affirmative and negative), most of them in spoken American English (56 examples in C-US), a few uses occur in British English (32 in ICE GB) and epistemic uses are also used in Australian English (24 in ICE AUS). These epistemic uses, however, represent only a total of 1.1% of all instances of can.
analysis, the majority of epistemic instances actually occur in affirmative contexts (3% in LLC, 6% in ICE GB) and are represented by the following two examples:

13) I mean I should think you ’d get over the uhm <,> the voyeuristic aspects in the early stages and uhm you ’re really dealing with people ’s lives pretty wrecked <,> and that can be very bitter in some cases <,> (DCPSE_DL_B49_268)

14) And in times of war such journalists I think can be a danger (DCPSE_DL_D11_3)

All in all, the status of can remains stable in the two periods analysed. It belongs to the four most frequently used modals and neither changes in frequency nor in the distribution of root and epistemic uses. It mainly expresses root possibility/necessity and the few epistemic uses are (so far) only marginal uses.

**COULD**

Could is among the four most frequently used central modals and decreases by 11.3% in the spoken texts. Its meanings fall into present and past tense root and epistemic uses and the semantic development resembles the trend of most central modals because epistemic uses of could are on the increase (5% in LLC and 13% in ICE GB).

Although could is originally the past tense form of can, it is used as a separate modal verb in present-day English. The number of occurrences where could really functions as a past form of can decreases from 49% to 30% in the two periods under investigation; in the remaining uses it expresses a possibility which is either unreal or stated more tentatively than that expressed by can. This root meaning is shown in 15)-16).

15) I don't often buy one but I look at them and I think ooh I wish I could afford it <,,> (DCPSE_DL_B09_128)

16) yes <,,> I wish that that side of the course could be expanded <,,> a great deal so that uhm <,,> (DCPSE_DL_A07_7)

This type of could often functions pragmatically, as illustrated in the next two examples, where could can be interpreted as either a suggestion in 17) or a request in 18).

17) uhm <,,> and then perhaps we could come and see you together on Saturday <,,> if (DCPSE_DL_C03_686)
18) Fanny could you lend me a cigarette (DCPSE_DL_B17_549)

The distinction between can and could is similar for its epistemic uses as could expresses a more hypothetical and thus a more tentative conclusion:

19) Well it could be Italian but it says bottled in Provence on the label which means nothing at all (DCPSE_DI_B49_299)

20) No it could be just re-routing because instead of hearing sounds they’re not able to hear sounds so what’s the point of speaking (DCPSE_DI_B73_157)

21) and 22) represent could as real past tense uses of can. In these examples, there is a clear reference to events that have happened in the past, referred to by ‘at that time’ for example. In these quotations, could can be paraphrased by ‘it wasn’t possible for...to/that’ (21) or ‘they were not able to’ (22).

21) I think I recorded it because I probably couldn’t really uh see it at that time but uh I’ve gotten over it now but it it really is a good film (DCPSE_DI_B12_52)

22) and then it turned out mummy and daddy couldn’t make it (DSPSE_DL_B33_215)

If could occurs with perfect have, it can either refer to the present (‘It is possible that’) as in 23), or the past (‘It was possible that’) as in 24):

23) I mean that it could never have been genuinely <„,> meant (DCPSE_DL_B17_318)

24) I wouldn’t have minded if I’d known it was going to happen for some weeks and I could have thought about it and I probably would have felt quite positive (DCPSE_DI_B45_130)

To summarise, could belongs to those modals which are used with average frequency. As discussed in 3.2.2, it decreases by 11.3% in the frequency of spoken English. Alongside with this decrease in frequency it illustrates two important changes in function: First, the ‘real’ past tense uses of could are clearly declining and it is mainly used with hypothetical meaning. Second, the epistemic uses of could are increasing.
MAY

May declines drastically (-39.5%) in frequency. Comparing the semantic distribution of may in LLC and ICE GB, it is discernible that epistemic modality has become its dominant meaning as it increases from 79% to 94%. There are only a few examples of root possibility (6% in the 1960s and just 1% in the 1990s) and some formulaic uses mainly in the earlier corpus (15% in contrast to 5% in the 1990s) so that in the 1990s, it is almost exclusively used for the expression of epistemic possibility. Some quotations will illustrate the different meanings of may.

Examples of the following type, where may expresses root possibility, i.e. permission, occur mainly in the 1960s:

25) yes you may thank you (DCPSE_DL_B29_421)

26) uh a man <,> who <,,> poisons his wife <,,> may not be hanged (DCPSE_DL_D03_304)

Additionally, there are a number of formulaic uses of may which are categorised as fossilised permission uses and form a third category alongside its root and epistemic meanings; this category is called formulaic uses. In the following quotations, may does not express permission comparable to the examples above since the speakers do not really ask for permission; in 29), for instance, the speaker does not expect an answer from the addressees whether he is allowed to continue with his two points. In its formulaic uses, may rather functions pragmatically as a marker of politeness. By means of these expressions, may gives an utterance the air of politeness while at the same time pointing towards the seriousness of the matter.

27) now I would like if I may to turn to two points (DCPSE_DL_D06_344)

28) Uh the Americans were certainly much more aware of their needs and they had a very much tougher press corps to deal with which I may say did not share the aims of the American public (DCPSE_DL_D11_88)

29) well this of course is <,> may I say with one exception I think the most extraordinarily futile Argument that I’ve Ever heard in my life <,>(DCPSE_DL_D06_268)

The following example illustrates a further formulaic use of may.

30) Anyway be that as it may <,> <laugh>(DCPSE_DL_B05_417)
Epistemic *may*, the most dominant meaning (79% in the 1960s and 94% in the 1990s), is represented by the following examples, which can be paraphrased by ‘it is possible that’. *May* is flexible in its time reference and can refer to the present (31), past (32) or future (33).

31) and <,> however much experience you ’ve had they *may* listen but they then <,> proceed to do exactly what they want to do (DCPSE_DL_B35_84)

32) there ’s one file I <,> *may* have put it in by Accident <,,> in the double ones in the hall <,,> (DCPSE_DL_C01_62)

33) So it *may* be worth <,> uhm pushing a C V round to a few related <unclear-syllable> <,,> places like that (DCPSE_DL_A14_87)

The epistemic use of *may* often has got an important pragmatic function. Coates points out that one of the major characteristics of *may* is its ‘hedginess’. Using *may* as a hedge, “the speaker avoids committing himself to the truth of the proposition” (Coates 1983: 134). Thus, epistemic *may* is often not only used in order to draw a possible conclusion but also to express statements more tentatively. As will be discussed in the next section, *might* often has a similar function, too.

As stated above, *may* belongs to those modals which are declining significantly in spoken and written English. With regard to the semantic development, *may* displays a clear tendency towards monosemy of epistemic possibility.77 This fact has also been attested in previous research: Leech (2003: 232, Leech et al. 2009: 84f.) makes a similar observation for written British English. He points out that the epistemic meanings of *may* are increasing while the remaining meanings show a marked decline within the thirty-year period.78 Collins (2009: 92) also shows that epistemic possibility, accounting for 79.9% of all tokens, is the dominant meaning of *may* in British, American and Australian English.

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77 Considering only the bare numbers of epistemic uses in the analysed data sample, the difference between LLC and ICE GB is not significant statistically; the tendency of its increased use is still visible. The decrease of its formulaic uses, however, is statistically relevant (cf. appendix).

78 Leech (2003: 332) codes *may* according to the following meanings: epistemic possibility, root/event possibility, permission, quasi-subjunctive and unclear examples. He observes an increase in epistemic uses in written English, too (52% to 67%). The other meanings are on the decline and there are hardly any examples of the quasi-subjunctive in the 1990s. There aren’t any of these uses in spoken language, either. *May* shows a tendency towards monosemy of epistemic necessity which is even more advanced in spoken language.
Although *might* originated as a past tense form of *may*, it functions as a separate modal verb in present-day English. In present-day English, *might* has lost its past tense uses, and in many contexts, *might* could be substituted by *may*.\(^{79}\) Past tense uses are mainly relevant if *might* is used as backshifted *may* in conditional clauses or in indirect speech.

In general, *might* belongs to the less frequently used modals; its frequency in spoken language, however, increases by 5.7%. The distribution of root and epistemic meanings among the non-past uses remains rather stable; with 78% in the 1960s and 85% in the 1990s, epistemic possibility is the dominant meaning of *might*.

The root meaning of *might* is represented by the following examples; it often functions pragmatically as a suggestion or even as a polite request or obligation.\(^ {80}\)

34) instead of p clattering up their own place <,> we *might* jolly well use them (DCPSE_DL_B04_66)

35) hm so you *might* put her in the picture as regards your occupation <,> *<unclear-word>* (DCPSE_DL_B16_42)

In the following epistemic uses, *might* expresses tentative possibility; if it occurs in the present tense (36), it is often interchangeable with *may*, as examples 37) and 38) illustrate.

36) That’s sort of looking to how to make recording things <,> and *might* be of interest (DCPSE_DL_A06_0150)

37) it *might* be that you wanted desperately fifty pounds gross Income from it <,> or you didn’t mind getting Any Income (DCPSE_DL_B14_419)

38) Now Eurotra’s position in this field more or less at this point here at the lowest point <,> which *may* be of some interest <,> (DCPSE_DL_I04_12)

In general, *might* and *may* are used in very similar functions; the dominant meaning is epistemic possibility.\(^ {81}\) This epistemic possibility often has got the prag-

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\(^ {79}\) Denison (1998: 166) – with reference to Coates (1983: 53) – also states that the difference between *may* and *might* in their epistemic uses does not hold any longer in present-day English.

\(^ {80}\) Cf. Matthews (1991: 266) for a discussion of *could* and *might* used as ‘hedged’ directions.
matic function of a hedging device which allows speakers to distance themselves from their statements by expressing utterances more carefully. This hedging function is nicely illustrated by the next quotations, containing the phrase ‘might want to’; here, want to expresses a polite obligation or suggestion and this suggestion is put even more tentatively by adding might.82

39) Plus it might rain or something <,> and we might not want to do it (DCPSE_DL_B02_48)

40) Mm <,> or beyond that you know thinking even less <,> degree-related <,> anything else you’ve particularly enjoyed in in your years so far not <,,> not necessarily at College even <,> that you might want to use and think about for for career purposes (DCPSE_DL_A08_162)

Thus, both may and might display ongoing grammaticalisation and semantic change towards epistemic possibility. One explanation – which, however, would need further investigation of language-internal and external factors - is that both verbs are increasingly being used for expressing statements more carefully and thus display similar trends as the modals of obligation. However, as the overall frequency of might and may is still relatively low, it is hard to draw general conclusions. Thus, the development of its epistemic uses can so far best be explained as progress along the grammaticalisation chain. The second important change in the case of might is its loss of past tense uses which – in the analysed data sample – are marginal in the LLC and no longer found in ICE GB.

BE ABLE TO

The distribution of meanings of be able to remains relatively stable across the decades and there aren’t any significant shifts in frequency. It only occurs with non-epistemic meanings; its most frequent meaning is ability, it sometimes expresses possibility and there are only a few uses of be able to expressing permission.

41) (...) we’d got <,> not all that many in our school <,> because most of them come over not speaking English <,> or not being able to write Eng-

81 Comparing the distribution of LOB and F-LOB, Leech et al. (2009) point out that epistemic may is the dominant meaning of the verb in the Brown family of corpora. However, the epistemic sense has decreased along with the overall decrease in frequency in the American but not in the British data. They hypothesise that might has been gaining at the expense of may because the two verbs are often used without notable semantic differences (Leech et al. 2009: 85).
82 A total of 9 instances of might want to were found in both corpora; may want to occurs twice.
lish and therefore not many of them get into the grammar school system in fact <,,> (DCPSE_DL_B35_36)

42) (...) but it seems to me that uh to be able to <,,> indulge in debate on those terms <,,> calls either for uh a saintliness of character which few possess <,,> or for quite remarkable reserves of self-confidence or possibly for both <,,> (DCPSE_DL_E07_124)

In 41) and 42), *be able to* expresses a possibility which is participant-internal because it refers to people’s ability to write English or to indulge in debates which depends on their own education or on their character. In 43) and 44) in contrast, the ability to borrow books or to have a successful marriage relates to external circumstances, namely the opening times of the library, or to certain obstacles.

43) Well I I doubt we ’ll be able to borrow books after quarter to nine uhm (DCPSE_DI_B55_234)

44) what would you say is the chief <,,> obstacle to your being able to have a <,,> successful marriage whatever that may mean (DCPSE_DL_D08_223)

The subsequent quotations illustrate the meaning of permission, which still occurs only rarely in the corpora. In these examples, the possibility depends on regulations of the cricket club or the university.

45) In every other county cricket ground throughout the country women are able to be members of the club although I gather at Glamorgan it ’s uh sixty-two pounds for a husband and wife membership and eighty-four pounds for two full members (DCPSE_DL_D01_29)

46) and <,,> without having a decision over it we had to abide by the University regulation to allow <,,> students who failed in part one <,,> some of them <,,> haven’t done it yet you see <,,> uh to <,,> be able to resit because we <,,> wrote to the r University Registrar and he said <,,> yes <,,> your papers that are taken at the end of the second year of your students are considered <,,> papers taken in advance and you have to whether you like it or not <,,> uh allow those students to resit them <,,>(DCPSE_DL_A04_362)

**BE ALLOWED TO**

*Be allowed to* belongs to the less frequently used semi modals. The normalised frequency shows that it occurs only 73 times in 1,000,000 words and it even decreases down to 55 occurrences in the 1990s. *Be allowed to* does not display any semantic shifts as it is exclusively used for the expression of permission, as represented by the following two examples:

92
47) In England it doesn't matter because he can get help as he's the only one allowed to drive that car.

48) Uhm, not being allowed to have guns when I was a kid, toy guns (DCPSE_D1_A15_75)

Neither be able to nor be allowed to display any significant shifts in frequency or semantics. Thus, in the possibility domain can is still the most frequent modal which is not being replaced by any of these semi-modals.

These findings can be summarised as follows: Can belongs to the most frequently used central modals. It does not display any significant shifts; both its frequency and its semantic distribution remain stable. Root possibility is its dominant meaning; the few epistemic uses are too marginal to provide any signs of ongoing grammaticalisation processes. Could illustrates significant changes: Its hypothetical uses increase at the expense of real past tense uses and its epistemic uses rise as well. The semantic development of the central modals may and might also displays ongoing changes. Both have become almost restricted to epistemic contexts where they often display important pragmatic functions as hedging devices. Be able to and be allowed to, the corresponding semi-modals, are not very frequent and don’t show any signs of ongoing grammaticalisation or movement towards emerging modal characteristics. All in all, the central modals may, might and could are increasingly used in contexts where they help to express statements more carefully.

3.2.2 Necessity and obligation: must, need, need to, should, ought (to), have to, have got to, (‘d) better

While ongoing changes in the modals of possibility are mainly restricted to some central modals, the modals of necessity and obligation display important changes in both categories of verbs. Their root, epistemic and formulaic meanings are distributed as follows.
MUST

As demonstrated in the previous section, the frequency of *must* is declining dramatically, occurring 54.3% less often in the 1990s than in the 1960s. The distribution of its different meanings, however, remains relatively stable and root and epistemic meanings are distributed relatively evenly in both periods; the shifts in distributional frequencies are only marginal and statistically not significant (1960s vs. 1990s: 43% vs. 47% root meaning, 46% vs. 45% epistemic uses, and 11% vs. 7% formulaic uses).

*Must* is used for the following range of root meanings: if external circumstances make something necessary, *must* can express a necessity, e.g. in 49), where it is important for the speaker to get the plane. In prototypical instances of obligation, the action is not only necessary but compelling. In 50); for instance, an external authority, in this case the boss, is the source of the obligation. With second person subjects, the obligation is expressed most explicitly. More detailed analyses of the modals of obligation in chapters 5 and 6 will further elaborate on different degrees of obligation.

49) *We must* remember to get on that plane you know (DCPSE_DI_B40_41)

50) *My boss had said you must* read those books (DCPSE_DI_B12_171)

The scope of negation of *must* differs from that of the other modals of obligation because *mustn’t* expresses prohibition rather than the lack of necessity (54):

51) *you mustn’t* put words into my mouth <,> Mr Williams (DCPSE_DL_D03_270)

The obligation conveyed by *must* is often characterised as strong obligation contrary to that expressed by *need to* and *should*; the latter express obligations more carefully. Similarly, in its epistemic uses, *must* expresses a confident conclusion, which Palmer terms ‘deductive’, i.e. “the only possible conclusion” (Palmer 2001: 25); thus, the epistemic uses differ from the epistemic uses of *may*, where the conclusion is more speculative. Thus, in the epistemic examples shown in 52) and 53) the speakers are confident about the cat being highly ingenious or the fact that it was awful in those days.

52) *It must* be a highly ingenious cat uhm (DCPSE_DI_B49_159)
Apart from its epistemic and root meanings, *must* displays some uses which cannot be subsumed under the categories root or epistemic.\(^{83}\) Utterances such as ‘I must say’ or ‘I must admit’ don’t express a necessity but can rather be regarded as formulaic uses of the verb *must*. They typically occur with first person singular subject and public verbs, as illustrated in the following examples.

54) I’m not worried at the moment I *must* say (DCPSE_DL_A07_88)

55) I *must* say I rang up on Thursday because I had a <,,> letter an official letter ages ago from uh <,,> Miss Baker saying come at ten o’clock (DCPSE_DL_B05_92)

With 11% in the 1960s and 7% in the 1990s, this meaning remains relatively stable, too.

In short, even though *must* drastically decreases in frequency, its semantic distribution remains relatively stable. Further, more detailed investigations will compare its syntactic as well as semantic profile with that of the other modals of obligation in order to see in how far its decrease is related to the increase of some semi-modals of necessity/obligation, e.g. *have to* and *need to*.

**SHOULD**

The meaning of *should* is very similar to that of *must* with the semantic difference that it is used for weaker obligations and more tentative epistemic judgements. Its decrease in frequency (-14%) is highly significant though not as dramatic as that of *must*. *Should* occurs most frequently with root meanings (75% in LLC and 74% in ICE GB) where it expresses a necessity or a weak obligation. This meaning is illustrated in 56) and 57) in which *should* can be interpreted as weak obligation which pragmatically functions as either recommendation or as criticism.

56) I know that I <,,> probably I know that I *should* <,> eat but <,,> when and I cook <,> uh considerable <,> quite a large quantity of food <,,> and then find that I <,> I don’t feel all that hungry <,,> even though mostly <,,> uhm I usually skip breakfast and <,> uhm travel on cups of coffee <,> or tea <,> (DCPSE_DL_A11_48)

\(^{83}\) Close/Aarts (2011: 174) also establish a category called “performative modality” as a third category alongside root and epistemic modality. “Although performative modality is considered to be a type of root modality, these examples were coded and counted separately because of their specialized meaning” (ibid.: 174). This categorisation corresponds with the present classification.
57) because if every time <,> he wants to talk to you about <,,> whatever it is that comes from the past <,,> but he knows that Actually your feeling is that the hell he shouldn’t have those kinds of feelings or he should be more Adult or he should be more grown up by now <,,> all he’s going to do is feel belittled and worthless and unnecessary around her (DCPSE_DL_D08_252)

The distribution of the meanings of should remains relatively stable even though in LLC there are more formulaic than epistemic uses (8% epistemic and 18% formulaic), while in ICE GB it occurs more often with epistemic meaning (16% and 9%). These shifts, however, are statistically not significant.

The epistemic use of should is represented by the following two examples, where should expresses a tentative conclusion. The example shows that the conclusion expressed by should normally has some future reference, e.g. in the following two instances:

58) but if the correct endpoint is when it baw boils round <,> balls round the knife <,> then uh <,> it should come right every time (DCPSE_DI_B47_193)

59) that should make you both feel a lot better (DCPSE_DI_B07_31)

Similar to must, should occurs in formulaic uses. However, it is not used with public but rather with private verbs and occurs with both present and perfect tense in phrases such as ‘I should think’ or ‘I should have thought’.84

60) I mean I will do but not enough time to come up to London I shouldn’t think unless I come up on an ex excursion (DCPSE_DI_C07_208)

61) and I should think the <,> Adams brothers designed it <,,> (DCPSE_DL_J06_182)

should is used pragmatically here in contexts where it apparently weakens the speaker’s utterance. At the same time, however, the speaker gives additional emphasis to the utterance using ‘I should think’. This becomes clear in 64), for ex-

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84 Leech (2003: 239, note 7) points out that in these uses, should can be replaced by would; he believes that this substitution reflects the alternation of will and shall with first person subjects. This use is becoming increasingly marginal which mirrors the increasing marginality of shall. One further possible explanation for these uses is the following: The insistence of should in these cases was a hallmark of traditional British prescriptivism, which could explain part of the development of these uses. The entry ‘should and would’ in Fowler’s Modern English Usage says: “3. (b) Should is correct in standard southern BrE in tentative statements of opinion, with verbs such as guess, imagine, say and think: I should imagine that you are right; I should say so; I should have thought you’d got used to that principle by now” (Burchfield 1996: 711).
ample, where the speaker expresses his assumption that the Adams brothers designed it as a seemingly tentative conclusion but thereby stresses it.

In short, even though *should* slightly decreases in frequency, its semantic distribution does not change significantly. In his semantic analysis of *must, should* and *may*, Leech (2003: 233ff.) draws a similar conclusion. Similar to *may*, *should* displays a tendency towards monosemy; while *may* is increasingly being used with epistemic meaning only, the dominant meaning of *should* is its root meaning. The findings of present-day spoken English confirm Leech’s results and in spoken English, the development of *should* displays a more advanced stage.85

**NEED**

Modal *need* declines drastically in frequency and is virtually non-existent in the 1990s. There are only a few occurrences of *need* in the 1960s (the normalised frequency for 1,000,000 words is 35 in the 1960s and it is hardly used at all in the 1990s, where the normalised frequency is 5). The use of *need* is restricted to interrogative or negative contexts where it mainly functions as a marker of root necessity and can be paraphrased as ‘it is (not) necessary for…to …’; these uses are shown in 65) and 66). The only instance of epistemic necessity is illustrated in 67) where the epistemic necessity is underlined through the use of ‘necessarily’.

62) does that in a working way constitute a problem or is it just uh something you needn’t bother with uh in in approaching uh <,> this particular Area of Piggott <,> (DCPSE_DL_A06_233)

63) I needn’t wait till the very end of those before I move but all the same <,> uhm (DCPSE_DL_B09_458)

64) I don’t see that it necessarily need happen <,> (DCPSE_DL_B20_260)

While modal *needn’t* occurs only in restricted semantic and syntactic contexts and decreases in the discourse frequency of spoken and written English, the semi-modal *need to* is more flexible and displays the most significant increase in fre-

85 The semantic coding, however, to some extent differs from the present analysis. Leech (2003: 233) uses the categories weak inference (epistemic), weak obligation (root/deontic), putative, quasi-subjunctive, *should = would* and unclear. However, examples of quasi-subjunctive were not found in the present analysis, the examples of *should = would* are discussed in footnote 84 (they correspond with the formulaic uses), and difficult examples were subsumed in the root category. Thus, the number of epistemic vs. other uses is comparable with the present analysis. Leech finds 11% in LOB and 9% in F-LOB. In the present analysis there are 74% root uses in LLC and 75 in ICE GB; the number of epistemic uses increase from 8% in LLC to 16% in ICE GB and the number of formulaic uses decreases from 18% to 9%.
quency of all semi-modals even though its overall frequency remains to be comparatively low.

**NEED TO**
Within the thirty-year period under investigation, *need to* displays a drastic increase in frequency. With respect to its semantic distribution, *need to* only occurs with root meanings in both periods. In most instances, *need to* expresses a neutral participant-external necessity that can be paraphrased by ‘it is necessary for…to…’ as exemplified by 65) and 66).

65) Now we’re going to go past Camden <,> and this bus is going to turn just before Chalk Farm so that we *need to* get out (DCPSE_DL_B07_143)

66) I mean that <,> that’s just maybe a little bit of a fine Issue but it just seems to me sometimes that you do very much need one *needs to* kind of further the contact that parents have with members of staff whether it be teachers nurses or whatever <,> (DCPSE_DL_A08_357)

Additionally, the necessity expressed by *need to* can often be interpreted as an obligation which is expressed more carefully than that conveyed by *must or have (got) to*, implying that the action demanded is the addressee’s ‘need’ and thus in their own interest. This meaning is depicted in the next two examples where the obligation is formulated as a polite request or recommendation. The ‘d in 67) even further weakens the force of the obligation.

67) Surely if you went back over the design now you would and looked for the number of times you used the word assume <,> it’d be those assumptions which would be the things things that you’d *need to* pick out in your executive summary because clearly where you’re making an ex an assumption there’s a <,> you know there are question marks aren’t there (DCPSE_DL_B90_79)

68) <,> I think <,> that you want help and you want support <,> and you *need to* look at your feelings <,> and someone has to be ba by to be Able to give you that support while you do do this looking at your feelings

Examples of this type will be discussed in more detail in the discourse analysis in chapter 6.

Using *need to* in the passive or with first person subjects also helps formulating indirect and thus more polite obligations, for instance in 72) and 73).
69) And as we move towards a general election, we need to spend more time on persuasion.

70) That needs to be specified more than any other piece of equipment.

There aren’t any formulaic uses of need to comparable to those of should and must, nor are there any instances where it expresses an epistemic necessity. This is probably due to the fact that need to came into existence more recently. The development of need to will be further investigated in chapters 5-7 where its uses will be compared with the remaining modals of obligation.

One important factor that could also be responsible for the dramatic increase of need to is its syntactic flexibility because there are a number of syntactic contexts such as participle constructions and past tense forms where it would not be possible to use any of the central modals. One example is ‘were needing to’ in 71).

71) And I wasn’t sure when I thought that whether we were supposed to be looking at skills you know whether we were needing to persuade someone or or quite what we were you know trying to get out of this conversation.

OUGH (TO)

Ought (to) is the only modal auxiliary which cannot so easily be subsumed under either the category of modals or semi-modals because it somehow oscillates between the two. The situation is not as clear-cut as that of need and need to, which can be treated as two different verbs for syntactic reasons. The corpora provide some hybrid forms of ought (to) which display the syntactic features of both modals and semi-modals. In 72) and 73), for example, ought is negated with not but followed by a to-infinitive:

72) they raised very seriously the question of whether this oughtn’t to be uh one two eight or one nine two pages in extent uh (DCPSE_DL_A02_426)

73) it ought not to be forgotten (DCPSE_DL_F18_10)

The frequency of ought to is declining dramatically (-62.2%) and it is hardly used at all in the 1990s. Its semantic function is very similar to that of should, conveying participant-external necessity/obligation. This obligation is often considered to be weaker than that expressed by must or have to. Furthermore, obligation ex-
pressed by *ought to* often has got a moral implication (74) or contains a recommendation (75).

74) Uh and then having got that at the end of the day it ’s got to be your decision anyway <,> because I won't enter into a contract that says you *ought to* go and do that <„> (DCPSE_DI_A08_123)

75) It ’s very interesting to see and I think people *ought to* go and see it because they ’ll hear music they won't normally hear they won't hear it again (DCPSE_DI_E04_48)

Apart from its root uses, *ought to* can convey an epistemic necessity which is expressed carefully, similar to the epistemic necessity expressed by *should*. This meaning, however, occurs only very rarely (3% in the LLC).

76) well it *ought to* be the viceroy but I ’m sure that ’s not what they called him <,> but Anyway <„> it was all rhyming couplets basically (DCPSE_DL_B24_198)

Selected instances of *ought to* will be discussed in more detail as part of the discourse analysis.

**HAVE TO**

The frequency of *have to* remains relatively stable across the decades and so do its meanings. It is mainly used as root necessity (98% in LLC and 95% in ICE GB), though there are some epistemic uses in the later corpus (1% in LLC and 3% in ICE GB). This increase in epistemic uses, however, is statistically not significant so that epistemic uses remain only a marginal meaning in the corpora under investigation. Furthermore, *have to* is sometimes used in formulaic phrases like ‘I have to say/admit…’; as these uses are comparable to the instances of ‘I must say’ discussed above, they constitute a third category. These uses, however, are only very marginal (0% in LLC and 2% in ICE GB).

Root necessity of *have to* falls into different categories. It can express a rather neutral participant-external necessity, where external circumstances or conditions make it necessary to do something:

77) is to say because we can’t get up the nearest stair or lift to it <„> we *have to* go from here right to <„> central dome and back again <„> to get the <„> books peculiar to ourselves <„> (DCPSE_DL_A04_303)

78) And I mean you *have to* be a pretty efficient manager of time to do that and that ’s not really Bernard ’s strong point (DCPSE_DL_B26_41)
Moreover, *have to* occurs in obligations, imposed by regulations (79) or circumstances (80):

79) *we have to* obey their regulations on lots of things <,> (DCPSE_DL_A04_358)

80) I know it was imperative you *had to* get back that morning that day (DCPSE_DL_B23_89)

Additionally, *have to* is used with generic subjects where it sometimes has a habitual meaning, implying ‘whenever...’:

81) the Engineers are the fellows in the middle who *have to* give answers to all these things (DCPSE_DL_B20_389)

82) You *had to* say one thing about <,> your job and he mimicked that he he did uhm eh demonstrate the mimic he demonstrated that in you know <,> gave an indication of what that should sound like (DCPSE_DL_A12_133)

Example 83) represents a formulaic use of *have to*. In utterances such as ‘I have to say’, *have to* does not express a necessity or obligation but is rather reduced to a pragmatic function (cf. instances of ‘I must say’ discussed above).

83) And I *have to say* that the the the people who are dealing with the complex cases in in Nottinghamshire at least are people who are of my kind of generation (DCPSE_DL_D10_48)

There are only a few epistemic instances *have to*. In the following example, *have to* can be paraphrased by ‘it is (was) necessarily the case that’. Similar to *must*, the epistemic meaning of *have to* expresses a rather confident conclusion.

84) There *has to be* a certain amount of <,> of excitement I suppose (DCPSE_DL_E08_169)

The importance of the syntactic flexibility of *have to*, occurring in a number of constructions in which central modals could not be used, will be further discussed in chapter 4 because it might be one reason for its relatively high frequency. The past tense use illustrated in 90) is just one of many examples.

85) He picked out Allan Smith <,> who *had to* stretch for it <,> deep inside the area on the far side about ten yards inside the area about five yards from the by-line (DCPSE_DL_F01_63)

The present analysis considers all instances, irrespective of their syntactic context in order to provide an overview of changing uses of modal auxiliaries. Analysing
only syntactically interchangeable contexts of modals, however, can lead to slightly different results: Close and Aarts’ (2010) analysis of *must, have to* and *have got to* is restricted to contexts in which the three modals alternate. In this analysis, the frequency of *have to* increases by almost 32%. The variation analysis of the modals of obligation (chapter 5) will illustrate the same trend.

(HAVE) GOT TO
The semantic distribution of *(have) got to* is very similar to that of *have to*. Both verbs are no longer restricted to their uses as possession markers but have grammaticalised into semi-auxiliaries expressing necessity and obligation, as their range of different meanings illustrate. *(Have) got to* remains relatively stable during the two periods analysed and its basic meaning is root necessity, with very few – statistically insignificant – epistemic instances in the later corpus (2%). There is only one formulaic instance in ICE GB.

Just as *have to*, *(have) got to* either expresses necessity (86) or obligation (87):

86) But to do that and to keep up the momentum of change and to protect all we ’ve achieved in the eighties we ’ve got to win <,> (DCPSE_DI_J04_55)

87) English is a subject in which there ’s always too much reading to be done because there ’s there ’s there ’s there ’s there ’s the whole of literature you ’ve got to read but at the same time <,> (DCPSE_DL_A03_369)

Epistemic uses of *(have) got to* are still rare:

88) And he said well obviously this girl it's got to be silicon chips (DCPSE_DL_B22_208)

Finally, 89) is the only example in the analysed data sample that has been categorised as formulaic comparable to ‘I must/have to say’.

89) Pretty much yeah I ’ve got to admit (DCPSE_DI_A07_94)

Even though the semantic profile of *have to* and *(have) got to* is very similar, there are important differences between the two verbs. The frequency of *have to* is considerably higher than that of *have got to* and *have got to* occurs mainly in spoken language. Moreover, *have to* is syntactically more flexible than *(have) got to*. 

102
(**D**) **BETTER**

_Had better_ can be used as a modal of obligation, implying a weak obligation or recommendation. With 60 types in 1,000,000 words in LLC and 52 in ICE GB it still occurs only very rarely but its frequency remains relatively stable. _Had_ is often used as a clitic ‘_d_ which can even be left out, as demonstrated in 90). The semantic functions of (**d**) _better_ are very similar to _should_ or _need to_, conveying a weak obligation or recommendation which is meant to be in the addressee’s interest. The following quotations provide some examples.

90) Well he ‘_d better_ not get drunk and tell Jo what happened in the weekend <,> in the hope that she ‘ll finish with me  (DCPSE_DL_B25_274)

91) <laugh> <,> oh I _better_ not let Hart hear that <laugh> <,> (DCPSE_DL_C01_274)

(**D**) _better_ belongs to those modals of obligation which are used with a very low overall frequency.

**BE SUPPOSED TO**

_Be supposed to_ expresses root and epistemic necessity. However, it occurs only very rarely, (116 in 1,000,000 words in LLC) though it increases by 44.8% (168 occurrences in 1,000,000 words in ICE GB).  

The quotations conveying root necessity typically contain an obligation which is due to some rules or general agreement:

92) As far as I understand the rules they don’t state exactly where in the course of his remarks the member is _supposed to_ state that interest <,> (DCPSE_DL_G01_120)

93) we ‘re _supposed to_ be testing summary in that question <,> then why introduce paraphrase <,> (DCPSE_DL_B01_385)

Similar to root necessity, the epistemic necessity of _supposed to_ expresses a logical conclusion which arises from some general rules or agreement; it can also convey assumptions based on what somebody else has reported (94).

94) it’s _supposed to_ be good for you isn’t it (DCPSE_DL_B07_203)

95) no I ‘m _supposed to_ be getting an uh an assistant (DCPSE_DL_B05_594)

86 In LLC, 66.7% of all uses convey root and 33.3% convey epistemic necessity; the number of root uses is increasing to 77% in ICE GB where there epistemic uses only make up 33%.
In sum, the semantic analysis of the modals of necessity/obligation shows the following developments: *Must* remains relatively stable in its distribution of root, epistemic and formulaic uses within the thirty years; even though its overall frequency declines dramatically, its semantic distribution remains stable across the decades. The semantic distribution of *should* remains relatively stable, too. Even though there are some fluctuations between formulaic and epistemic uses in the thirty-year period analysed, its amount of root meanings remains relatively stable and is apparently the dominant meaning in both spoken and written language. Its proportion is even higher in spoken than in written language, which can be interpreted as a more advanced development. While *needn’t* is restricted to negative root uses, *need to* is syntactically flexible; it expresses only root but not epistemic necessity. Further investigations will show in how far it replaces other modals of obligation as a more polite means of expressing obligation. Epistemic uses of semi-modals are still rare. Thus, in this domain *must* is apparently the dominant means of expressing epistemic necessity even though some semi-modals convey a few epistemic instances; this might indicate the beginning of semantic change. However, it is hard to draw any conclusions about ongoing semantic change as the increase of epistemic uses of *have to* and *(have) got to* is statistically not significant. *Be supposed to* as well as *ought (to)* occur only rarely in the analysed data.

3.2.3 Volition, intention and prediction: *will, would, be going to, want to, shall*

Among the modals of volition and prediction *will* is most frequently used, being followed by *be going to* and *want to*. *Shall*, in contrast, sharply declines in frequency and is reduced to specific syntactic contexts, mainly occurring with first person subjects. Their meanings in the DCPSE have been coded as follows:

**Will**

*Will* is the only central modal which is increasing in frequency. Its semantic distribution remains stable as 30% of *will* express root meaning (volition/intention)

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87 Examples of *will* include instances if *will*, *won’t* and ‘*ll. All instances of clitic ‘*ll were subsumed under *will* rather than *shall*, as in Leech 2003).
in the 1960s and 32% in the 1990s. In the remaining samples under investigation will conveys prediction, which has been categorised as epistemic meaning.

Examples of will expressing volition (meaning ‘to be willing to’) occur only very infrequently. In these instances, the ‘volition’ expressed by will refers to the present tense. The following example illustrates this meaning:

96) I will have a cherry Actually (DCPSE_DL_B22_827)

More commonly, will conveys a future plan, promise or suggestion and thus expresses an intention. With this meaning, will mainly occurs with first or sometimes with second person subjects. This category is represented by the following examples. In 97) – 98), will evidently expresses the speakers’ intention

97) well I ‘m willing to consider any measure which would be of assistance uh to exporters <,> in any part of the United Kingdom <,> uh in relation to the E E C market and I will certainly consider this <,> (DCPSE_DL_G01_146)

98) yeah <,> O K and meanwhile I ’ll try looking for that file in <,> where you said (DCPSE_DL_C01_446)

In cases where will refers to some future action but instead of implying willingness expresses a prediction, will was coded as epistemic and can by paraphrased by ‘I predict that’. With 68% in the 1960s and 70% in the 1990s, prediction is the dominant meaning of will. With reference to Palmer’s classification of epistemic meanings, the conclusion expressed by will is “assumptive”, expressing a reasonable conclusion (Palmer 2001: 25).

99) if you can just wait a minute or two <,> we ’ll be Able to tell you the news <,> (DCPSE_DL_F07_140)

100) but if he looks at the figures for income of the self-employed he ’ll find very large numbers of them have very low incomes indeed (DCPSE_DL_G05_84)

101) Well the Tories will lose that one (DCPSE_DL_D09_41)

If will expresses a future prediction, it is sometimes interchangeable with shall. This can be seen in the following example where the two are juxtaposed:

102) <,> you see uh I shall get uh scripts from ten assistant examiners which will mean<,> a couple of days ’ work (DCPSE_DL_B01_67)
The frequency of *shall*, however, as will be discussed below, declines dramatically and *shall* is reduced to very formal contexts. Overlap between *will* and *be going to* will be explained in the section on *be going to*.

In short, *will* is the only central modal displaying an increase in frequency in spoken English. Its semantic distribution remains relatively stable with epistemic modality being its dominant meaning.

**WOULD**

*Would* is the most frequently used central modal in spoken and written English. Originating as the past tense form of modal *will*, *would* has got two major functions. It is either used as a hypothetical or as a past tense form of *will*. The hypothetical meaning is the more frequent one and increases from 72% to 86%. In both uses, epistemic meanings occur more often than root meanings.

In the following two examples, *would* is the hypothetical form of volitional *will*. 12% of all *would* have got this meaning in LLC and 17% in ICE GB. (This difference is statistically not significant).

103) I don't think I *would* because I've seen my mother do it <,> see (DCPSE_DL_B12_697)

104) I *wouldn’t* place such Emphasis on uh <,> on one period again (DCPSE_DL_A06_360)

105) if you *'d be so kind (DCPSE_DL_A02_285)

These uses of *would* contain the implication of willingness because they can be paraphrased by ‘*would* be willing to’. They could be substituted by *will* but with hypothetical *would*, the utterance sounds more tentative and thus more polite; *would* can also function pragmatically, for instance as a request as illustrated in (105).

*Would* can also have hypothetical meaning without any implication of willingness (55% in LLC and 69% in ICE GB; again, this increase is not statistically significant).

106) In an ideal democratic society if the Government was to propose a a an action like it <unclear-words> of some sort it ’s the people who *would* let their uh the elected members of parliament know and the elected members of parliament *would* vote that way in the House of Commons (DCPSE_DL_B81_171)
well I ’d like to have a chat with Upote (DCPSE_DL_B01_228)

well I would say he ’s very rational whereas he is <,> she ’s the one that can be a bit uh <,> irrational in her symptoms (DCPSE_DL_A08_303)

Conveying hypothetical predictions, these uses were categorised as epistemic uses of would (cf. Coates 1983: 23). A very common use is the polite expression of wishes with would/’d like to with the implied condition ‘if it is possible’. Choosing the hypothetical form instead of ‘I want to’ (cf. Leech 2004a), would makes wishes sound more polite because speakers apparently leave it open whether the addressee confirms or rejects these wishes. Utterances such as ‘I would say/imagine’, similar to the examples of ‘should think’, create a distance from what the speaker says.

Would is not only used hypothetically but also as a tense marker of will. Past tense volition uses such as the following occur only rarely (4% in the earlier and 2% in the later corpus).

I knew <,> really from the moment I started doing medicine I wouldn’t do surgery <,> and it ’s really <,> become just clearer and clearer and clearer <,> (DCPSE_DL_B21_317)

The subsequent quotations illustrate would used as past prediction of will. It is either used as tense marker, often as back shifted will in indirect speech (110), or can express habitual actions in the past (111). It is possible to paraphrase would by ‘used to’ in these habitual uses (Coates 1983: 209).88

<,> so <,> he said he was very sorry <,> he would have to <,> cos nobody else has the money to <,> (DCPSE_DL_B24_130)

Every now and then they <,> would insist on <,> stopping <,> and laying down their loads <,> and sitting down by the side of the track (DCPSE_DL_J01_55)

Would is used in past unreal conditional clauses. The if-clause is often only implied. In these conditional clauses, the causal relationship between protasis and if-clause is counterfactual because they express what would have happened if the situation had been different (cf. Palmer 1990: 171). Because these uses somehow

combine the hypothetical and the past tense meaning, they were treated as a separate category.

112) I would have had to do that a few days ago which I thought I didn’t want her to do (DCPSE_DL_B08_505)

113) it would have been nice to go with somebody <,> who who really knew about it <unclear-syllable> no <,> (DCPSE_DL_B29_166)

In short, would remains to be the most frequent modal auxiliary both in the grammar of spoken and written English. Its semantic development corresponds with general developments in the central modals since its epistemic meanings are on the increase, indicating ongoing grammaticalisation. Moreover, comparing the its past tense uses are decreasing; thus, would displays the same trend as might and could.

SHALL

Declining by 48.3% in use in the DCPSE, shall loses drastically in frequency. However, as Mair (2006: 102) points out, it was already moribund in the 1960s in both written American and British English (LOB and Brown).

The meanings of shall fall into root (volition and intention) and epistemic (prediction) meanings. In the present analysis (cf. appendix for details), the examples of shall expressing volition were regarded as special formulaic uses of the verb. As a result, the coded meanings are root (31% in LLC, 34% ICE GB), epistemic (48% LLC, 20% ICE GB) and formulaic (22% LLC, 45% ICE GB).

Quotation 114) illustrates shall expressing an intention; its epistemic use is represented by quotation 115). Shall could be substituted by will without much difference in meaning in both examples.

114) Right I shall bear that in mind for future reference when I ’m recording for phonetic reasons <laugh> (DCPSE_DI_B04_208)

115) and occasionally I sit down at home and I open my diary <,> for the year two thousand and fifteen <,> when I shall be ninety <,> ninety <,> (DCPSE_DL_D05_75)

In quotations 116)-117), shall expresses volition and could not be substituted by another modal auxiliary without different in meaning. In contrast to will and want to, the volition does not relate to that of the speaker but rather to that of the hearer and can be paraphrased by ‘do you want me to…?’. This is the dominant meaning
of *shall* in the 1990s. With this meaning, it also functions as question tag in imperative constructions with *let’s* (118).

116) Well what books *shall* I bring along (DCPSE_DL_B35_103)

117) O K s so <,> *shall* we make a definite time (DCPSE_DL_C04_621)

118) Let’s stop for the moment *shall* we (DCPSE_DL_A01_51)

For this reason, the volitional uses of *shall* can be regarded as formulaic or fossilised phrases comparable to the instances of *I must say*; they provide evidence that *shall* is on its way out of the modal system, not only declining drastically in frequency but also being almost reduced to fossilised or formulaic constructions.\(^{89}\)

Formulaic uses are more frequent than its epistemic uses in the ICE GB data. If fossilised uses are regarded as further stage of development, this distribution illustrates that *shall* is on its way out of the modal system in its epistemic and root uses, which are clearly declining, but remains to be used in formulaic utterances illustrated in the quotations above.

Finally, there are three occurrences in the analysed data sample (ICE GB) in very formal contexts, for example in legal documents. In these instances, *shall* is used for rules and regulations:

119) Congress *shall* pass no law restricting the freedom of press (DCPSE_DL_B81_157)

120) I was waiting for someone and <um> he - who *shall* remain nameless

However, only one example (120) really occurs in spoken discourse. The remaining two quotations occur in a university lecture where lecturer and student are talking about the constitution. Discussing similar examples of *shall*, Leech et al. (2009) point out that “(w)ith third-person subjects, *shall* as a special range of ‘stipulative’ meaning that tends to be restricted to legal or legalistic English, or to a few other contexts where archaism appears to be at work as a means of stylistic heightening” (Leech et al. 2009: 80).

\(^{89}\) Mair (2006), using apparent-time data from the BNC, shows that uses of *shall* in sentences such as ‘shall I’ are typical of child-adult interaction; he points out that with these uses, *shall* has a secure base in the youngest age group and is therefore not going to disappear completely (Mair 2006: 103).
This shows that in its obligation uses, *shall* has given way to other modals such as *must* and *have to*. It mainly remains to be used in a few epistemic and some formulaic utterances, but all in all *shall* plays only a marginal role in the present-day English system of modality.\(^90\)

**BE GOING TO**

Increasing by 31.2% *be going to* displays significant shifts in frequency within the period analysed. However, this increase is only observable in spoken but not in written English (cf. ch. 3.1). Its semantic distribution remains rather stable.

*Be going to* has got two different meanings: It either expresses an intention (categorised as root meaning) or a prediction (categorised as epistemic). Both meanings are relatively evenly distributed in both periods (root: 57% in LLC, 49% in ICE GB; epistemic: 43% in LLC, 52% in ICE GB); the small increase of epistemic uses is statistically not significant.

Quotations of *be going to* expressing an intention are represented by the following examples:

121) I *'m going to* play that same chord *<,> as loudly as possible *<,>* but immediately release *<,>* those keys *<,>* (DCPSE_DL_F08_371)

122) yes she was up until about a month ago and then she *'s going to* spend a couple of months whizzing round looking at Canada (DCPSE_DL_B22_645)

The next few quotations illustrate its epistemic uses:

123) A: The wind’s getting up
    B: I think it *'s going to* rain (DCPSE_DL_B58_307)

124) Can't play the tournament in the evening *<,>* so I *'m going to* be really busy (DCPSE_DL_B66_29)

125) In my own estimation the turning point of the economy certainly *<,>* is *not going to* be till the back end of this year at the very earliest (DCPSE_DL_D01_133)

It has often been argued that, as opposed to *will* and *shall*, the future action expressed by *be going to* refers to some immediate action which will either happen...
very soon or is related to the present state (cf. e.g. Coates 1983: 198, Leech 2004a: 59). This is true for quotations 123)-125). 123) is an illustrative example because the blowing wind indicates that it is about to rain.

Additionally, however, there are a number of uses where be going to can be substituted by will without much difference in meaning. In 126) and 127) will and be going to co-occur without any semantic difference.

126) Before the kick will be taken attention is going to be paid <,> to Kolianov who was brought down quite ruthlessly just a few yards outside the penalty area but still managed to get the pass through Jimmy to Mostovoi to make the penalty (DCPSE_DI_F12_275)

127) I mean I think that you ’ll find that although the pendulum at the moment has swung completely over to the side <,> of uh local treatment for cancer of the breast I think you ’re going to find that that ’s a tendency which will come back again (DCPSE_DI_B80_160)

Thus, there are a number of contexts where either will or be going to can be used without any semantic difference. There are, however, syntactic differences between the two verbs. As a semi-modal, be going to also occurs in a number of constructions not possible for will and shall .One example are past tense uses of be going to, illustrated by the following two quotations.

128) I think if I was going to Understand it I ’d have to read it again <,> (DCPSE_DL_A01_233)

129) Cos I was going to suggest uh that we could go to your <unclear-words> <unclear-words> humble abode (DCPSE_DL_C08_247)

Past tense uses of be going to often imply that the event referred to finally did not take place (cf. Coates 1983: 200).

In short, the dramatic increase in the frequency of be going to is restricted to spoken English. It does not display any significant semantic changes, as root and epistemic uses are distributed relatively evenly in the period under investigation. The fact that its central modal counterpart will increases in the frequency of spoken language as well demonstrates that there are no signs of semi-modal be going to replacing central modal will.\footnote{For a detailed corpus-based analysis of the variation of be going to, will and shall cf. Szmrecsanyi (2003).}
**WANT TO**

*Want to* originally expresses volition and has recently started to develop additional modal meanings (Krug 2000, Leech 2004: 105). In the analysed data, it does not only convey volition, but is used for recommendations or polite obligations, too. Rising by 39.6% *want to* displays the most significant increase in frequency after *need to*.

With 96% in LLC and 98% in ICE GB, the most common meaning of *want to* is volition. 130) and 131) represent volition referring to the present tense.

130) dear old Sandy Paterson ooh I *want to* see him now I wonder if he ’s in today <,>, (DCPSE_DL_B06_405)

131) Now she doesn’t *want <,> to* do this sort of thing a lot if you see what I mean <,> and uh <,> she does like well I think she actually likes it but <,> has a sense of proportion (DCPSE_Di_B49_140)

Naturally, the notion of volition is closely linked with future meaning (cf. Krug 2000: 249) as becomes clear in the next two examples.

132) one can’t start developing this sort of thing in a building where there ’s <,> not even the right sort of room for routine Scottish teaching <,> and uhm uhm <,> I I *want to* draw attention to this Aspect of what Jake has said <,> (DCPSE_DL_A04_51)

133) I *want to* see what happens next (DCPSE_DL_D06_219)

In the last two examples, *want to* does not refer to the volition of the speaker but to that of the hearer and thereby expresses a recommendation or polite command. In 134), the suggestion or recommendation implied by *want to* can be substituted by *should* and in 135), *don’t need to* would be an appropriate alternative to *want to*.

134) so I met Jake at the pub and I said oh you *want to* read this before you go in to this <,> <laugh> (DCPSE_DL_B24_210)

135) You don’t *want to* worry about fat (DCPSE_DL_B88_122)

This obligation meaning of *want to* still occurs very rarely; in the analysed data, there are only four instances in LLC and two in ICE GB.

*Want to* is apparently gaining ground as a modal marker, displaying new modal meanings. It is not only used for the expression of volition but is also beginning to be used as a future marker and as a marker of polite obligations. Krug
even quotes an example where it is used with epistemic meaning (Krug 2000: 150). This meaning, however, does not occur in the analysed data from British English.

The semantic analysis of will, would, shall, be going to and want to illustrates the following general trends: would is increasingly being used as hypothetical rather than past tense marker. Only one third of all instances of will analysed express the source meaning of volition, in the remaining uses it occurs in epistemic functions. This distribution remains stable, too. The increase of epistemic uses of be going to is statistically not significant; about half of the analysed examples express root, the other half epistemic necessity in both periods. Want to is beginning to develop modal meanings, too.

3.3 Interim Summary

The frequency analysis confirmed previous studies reporting drastic shifts in frequency and showed that most of them have already been going on for centuries. However, while a number of shifts are even more advanced in the spoken data, some developments are reduced to either spoken or written language and were interpreted as stylistic variation only.

The most frequent modals such as will and can do not decline in frequency and their semantic distribution remains relatively stable, too. Emerging modal be going to does not comprehensively replace its semi-modal counterpart will, since be going to is only increasing in spoken language. Would, the most frequent modal, displays a slight decrease in frequency. This might be due to the fact that its uses as a marker of past tense increasingly disappear. Its most important function is the expression of hypothetical root and epistemic meanings. The semantic development of could and might displays the same loss of past tense uses. Furthermore, might and may display a tendency towards monosemy as expression of epistemic necessity; however, while may displays a decrease in frequency both in the grammar of spoken and written language, might only decreases in the written corpora but slightly increases in the spoken component. Its major semantic function is epistemic possibility, where might is mainly used as a hedging device to express statements more carefully. It is possible that this is a feature typical of face-to-face conversation. One explanation for the loss of may could be that in
many contexts *may* and *might* are exchangeable so that functions previously expressed by *may* are now being replaced by similar uses of *might*.

The analysis has also shown that *be able to* and *be allowed to* do not replace their central modal equivalents either. Thus, neither the changes in the possibility nor in the volition domain can be attributed to an increasing use of semi-modals replacing the central modals. What we can observe is rather a general shift in function towards expressing utterances more carefully or more politely by using hedging devices (*may* and *might*) or hypothetical expressions (with *could* and *would*).

Some verbs which are already marginal in the 1960s, e.g. *ought* (*to*) and *shall*, continue to decrease in the present data. *Shall* is increasingly reduced to formulaic contexts rather than being used as a marker of future tense or obligation.

The analysis of the modals of necessity and obligation displays the most significant changes since this is the only domain where the decline of the central modals can to some extent be attributed to an increasing use of semi-modals. However, while *must* is decreasing in all of its functions, the semi-modals *have to*, *need to* and *have got to* are so far mainly used with root meaning; there are only a few instances expressing epistemic and formulaic uses. Furthermore, the increase of these three semi-modals differs across spoken and written genres; *(have)* *got to*, for instance, is mainly used in the grammar of spoken language. This group of verbs will be analysed in more detail in order to compare their different uses and functions. This will give further information on possible connections between semi-modal increase and central modal decrease.

All in all, the analysis has shown that the modal auxiliary domain displays ongoing change and grammaticalisation. A lot of changes are further advanced in the grammar of spoken language. However, looking at the individual verbs more closely, it has also been demonstrated that grammaticalisation does not proceed smoothly but rather takes place at different rate and speed. An overall increase of epistemic as well as formulaic uses in the central modals is visible; nevertheless, the rate of epistemic uses is still different across different verbs. While some modals display an increasing tendency towards monosemy of epistemic modality (*may*, *might*) or of formulaic meanings (*shall*), the distribution of different meanings of most of the other verbs remains relatively stable in this thirty-year period.
Comparing the semantic distribution of all verbs in the LLC and ICE GB it becomes clear that most modals have got one core meaning: With the exception of must, which displays about the same amount of root and epistemic meanings, the dominant meaning of the remaining modals of necessity is root necessity or obligation. About two thirds of the occurrences of should express root necessity, the remaining uses are formulaic or epistemic and there are only a few epistemic or formulaic uses of the remaining modals.

In the domain of volition, epistemic uses are the dominant meaning. The only exceptions are be going to, which displays about the same amount of root and epistemic uses, and want to, which – in the present data – is exclusively used with root meaning. Those two verbs are the most recent innovations in the modality system. An analysis of – not yet available – more recent data would have to show whether the two verbs display further changes along the grammaticalisation chain and display more epistemic or obligation uses, or if their distribution remains stable. In the domain of possibility, can, could, be able to and be allowed to are mainly used in their root meanings, while may and might display an increasing tendency towards epistemic uses.

4. Modals of obligation in British vs. American English - frequency, syntax and semantics (ICE GB, CSAE)

Chapter 3 has presented an overview of the distribution of modals and semi-modals in present-day spoken English. Both the comparison of spoken and written language and the real-time analysis based on spoken data from the 1960s and the 1990s have shown ongoing shifts in the modal auxiliary domain; many of these changes are further advanced in spoken language than previous research has already attested for written language.

Studying British English as focus of ongoing language change has got one drawback: as compared to American English, the British variety often represents a more conservative stage of development (cf. 2.2.3). Previous research has claimed that American English is leading most changes in the auxiliary domain. The present chapter is going to give a brief synopsis of previous research on modal auxil-
iaries in the two varieties. It will also take into account some studies on modal auxiliaries in further varieties of English, (Collins 2009, Diaconu 2011); the aim is to relate the investigations of British English, which are the focus of the present analysis, to general changes going on in the English language and to point towards general direction. This overview will be complemented by frequency analyses based on ICE GB and the CSAE in order to illustrate to what extent American English is leading the developments.

After this general overview of modal auxiliary use in the last chapter, the next chapters are going to focus on the modals of obligation. The modal expressions of necessity and obligation are a particularly interesting study object for the following reasons: Even though the overall frequency of modal expressions of obligation is the smallest as compared to the remaining two, it is nevertheless the only one in which the semi-modals surpass the central modals in frequency (cf. Collins 2009: 34). What is more, this is also the only group where modals and semi-modals can be regarded as competitive (cf. 2.3.4 on the ‘ecology’ of obligation) as chapter 3 has shown: While have to and need to might be replacing must in many of their uses, can, for instance, is not being replaced by be able to, and will is not being replaced by be going to. Additionally, shifts in this domain have often been attributed to changing attitudes in general (cf. 2.2.2; 2.3.4).

4.1 Synopsis of previous research

As discussed in chapter 2.2.3, Leech (2003), Smith (2003), and Leech et al. (2009) state that British English is following American English in the decline of the central modals and only in American speech have the semi-modals been catching up with the core-modals in frequency (Leech et al. 2009: 100). What remained surprising, however, is the fact that even though written American English displays a larger semi-modal increase than written British English, it starts from a lower point and ends at a lower point than British English. This fact has been related to a possible ‘prestige-barrier’ which prevents American speakers from using semi-modals (Leech et al. 2009: 104f., cf. 2.2.3).

92 For easier reference, in the following this group of verbs will be summarized as modals of obligation, subsuming modal auxiliary uses expressing a bare necessity as well as those expressing an obligation under one category.
Collins (2009) presents an overview of modal frequencies in British, Australian and American English. Let’s consider the modals of obligation only: Looking at overall frequencies without any distinction between spoken and written language, the number of modals (must, should, ought to, need) is smaller than the number of semi-modals (have to, have got to, need to, had better, be supposed to, be to, be bound to) in all three corpora under investigation. With a ratio of about 1:5 (1,318:6,783), however, this difference is largest in American English. This confirms the trend observed by Leech et al. (2009). Collins provides very detailed descriptions of each individual modal; he compares some of his results with Leech et al. and confirms the general trends. This section is going to summarise the findings of selected modals of obligation from Collins 2009: 33ff.) in order to see which areas need to be complemented by further research of this analysis.

Must confirms the trend observed by Leech and Mair (2006) because it is less common in speech than in writing (0.6:1). Comparing its use across varieties, Collins points out that the regional differences are sharpest in its deontic meaning, American English shows the greatest dispreference for using must (Collins 2009: 44ff.). The overall picture of should is similar to that of must because it is more often used in writing than in speech, too. Its overall frequency is lower in C-US than in AUS and ICE GB. In all corpora under investigation, the deontic sense of should is the strongest with only 11.8% epistemic uses on average (Collins 2009: 44f. 52).

Collins’ findings support previous analyses reporting a decrease of needn’t, which is most advanced in American English, and a dramatic increase of need to, which is most popular in American speech. He points out that a relevant factor in the “dwindling fortunes” (Collins 2009: 59) of need is its preferred use in writing. This fact can also be viewed as an indicator of ongoing language change, not only as a reason. Collins relates the decline of must with the increase of have to, which is most common in American speech, too. 93 He states that this increase of have to is due to the fact that have to is syntactically more flexible and semantically more democratic than must (2009: 67ff.).

The overall frequency of have got to makes only one quarter of that of have to and one half of that of must. In 67.8% of instances in all corpora, it occurs

93 He reports a ratio between must and have to of 1:3.5 in CUS, 1: 1.8 in ICE GB and 1:2.1 in ICE AUS).
as the reduced form got to (Collins 2009: 2). Collins attests the following differences between have to and have got to in order to show that the two verbs should not be treated as variants: Syntactically, have got to is not as flexible as have to (cf. 4.2.2). Stylistically, have got to is hardly used in other genres than conversation while have to is stylistically neutral. Semantically, he points out that have got to is more subjective and incompatible with habitual situations. (Collins 2009: 68ff.). In contrast to the remaining semi-modals, have got to is not common in American English. This might be due to a traditional stigma attached to got to, which has been discussed as ‘prestige barrier’ by Leech et al (2009) (cf. 2.2.3, 4.1). A number of studies even show that (have) got to, at least in its full form, is increasingly giving way to have to in spoken Canadian (Tagliamonte/D’Arcy 2007) and North American English (Jankowski 2004, Lorenz (2013)).

Collins (2009) findings in general support previous studies on changes in the modal auxiliaries. A few issues, however, still need further investigation. First of all, in Collins as in the previous chapter of the present investigation, the syntactic context of individual modals has not been taken into account quantitatively. It has been argued that have to is syntactically more flexible than have got to and must. In order to find out to what extent the flexibility is a reason for the particularly high frequency of have to, a closer analysis of the syntactic context is necessary. Second, the analysis will compare the syntactic stage of development of modal expressions of obligation in British and American English and discuss them in the context of ongoing grammaticalisation. This will point towards parallel but also divergent developments in the two varieties.

The following table is adapted from Mair (2007: 14ff,) and compares the syntactic forms of must, needn’t, need to, have to and have got to in different varieties of English (American, British, New Zealand, Ireland, India and Jamaica) based on the CSAE and the conversation components of the respective ICE corpora. Have to is the most common modal of obligation in all varieties with American, Irish, Indian and Jamaican English displaying the highest but British and Irish English displaying the lowest frequencies. The decline of must and of need is most advanced in the American data. Comparing the status of have got to across the varieties shows interesting results: it has been stated before that have got to is hardly used in American speech; this is confirmed by this overview; however, while have got to/have gotta are quite rare in spoken American English,
it often occurs as a reduced form *gotta* and is hardly used in the remaining varieties.\(^{94}\) Thus, focussing on the two varieties important for the present investigation, the following differences will be important:

What are the differences between *have to* and *have got to*? To what extent is the syntactic flexibility of *have to* responsible for its frequency? Which status does *have got to* have? Reducing the DPCSE to colloquial registers, the starting point of ongoing changes, are the semantic changes in the modals of obligation more advanced than in the first overview?

<table>
<thead>
<tr>
<th>Form:</th>
<th>Santa Barbara</th>
<th>ICE GB</th>
<th>ICE-NZ</th>
<th>ICE-IE</th>
<th>ICE-India</th>
<th>ICE-JA</th>
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<td><em>must</em></td>
<td>59</td>
<td>97</td>
<td>136</td>
<td>118</td>
<td>206</td>
<td>124</td>
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<td>*must not/<em>mustn’t</em></td>
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<td>6</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<tr>
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<td>1</td>
<td>0</td>
<td>3</td>
<td>11</td>
<td>0</td>
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<td>57</td>
<td>50</td>
<td>18</td>
<td>156</td>
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<td>8</td>
<td>15</td>
<td>6</td>
<td>1</td>
<td>4</td>
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<td>269</td>
<td>364</td>
<td>430</td>
<td>585</td>
<td>627</td>
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<td>27</td>
<td>29</td>
<td>22</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>HAVE* <em>got to</em></td>
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<td>118</td>
<td>114</td>
<td>11</td>
<td>4</td>
<td>2</td>
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<tr>
<td>HAVE* <em>gotta</em></td>
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<td>1</td>
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<td>42</td>
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<td>1</td>
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Table 4.1: Obligation and necessity in the Santa Barbara Corpus of Spoken American English and the conversation components of four ICE-corpora (Mair 2009: 18)

### 4.2 Corpus findings

#### 4.2.1 Frequencies in conversation

The following figure compares the frequency of modals of obligation in spoken British and American English based on the following corpus data: The Santa Barbara corpus (CSAE), consisting of approximately 249,000 words of American English conversation, will serve as a source for American English. The use of the modals of obligation in American English will be compared with that of British English, based on data from the genre ‘private conversation’ of ICE GB; this genre consists of 205,627 words of private dialogue and telephone calls.

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94 This, however, might also be due to transcription conventions of the different corpora.
Figure 4.1: Frequency of modals of obligation in British and American English conversation (CSAE, ICE GB) normalised for 100,000 words.

Figure 4.1 demonstrates the frequency of must, should, need, have to, have got to and need to in British and American English conversation. As regards the overall frequencies, have to by far outnumbers the other modals of necessity and obligation in both British and American English. Need is almost absent in both varieties (there is only 1 example in the British data), must is the least frequently used modal of obligation in American and need to in British English. Must and should are used less often in American than British conversation. The log-likelihood scores, being 16.62 for must and 6.13 for should (cf. appendix) demonstrate that these differences are highly significant in the case of must and significant for should. The frequency differences in the use of semi-modals, in contrast, are not relevant, as the log-likelihood scores show.

These findings support the Americanisation theory according to which the changes in the modal auxiliary domain are more advanced in American English.

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95 Cf. Table 4.1 (appendix) for log-likelihood scores.
96 For all analyses, ICE GB was searched with the text retrieval program ICE CUP, allowing both manual searches and searches using Fuzzy Tree Fragments; the Santa Barbara Corpus was searched with Wordsmith version 5. As the Santa Barbara Corpus is not tagged, examples irrelevant for the analysis (such as main verb need, perfect or main verb constructions of to get (I got interested/ got to university) as well as words beginning with should- or must- were sorted out manually.
Compared to the findings in the DCPSE discussed above, *need*, displaying the most significant decline in the thirty-year period in British English, is not used at all in the American English corpus (and occurs only once in the British data), and *must*, showing the most drastic decrease after *need*, shows the most significant differences between American and British English. With respect to the loss of central modals on the whole, American English appears to be more advanced than British English. The fact that the differences in the frequency of semi-modals between the two varieties of English are not significant statistically (cf. appendix) is not surprising since the frequency of *have to* and *have got to* remains relatively stable in the DCPSE as well (cf. 3.1.2). The only exception is *need to*, which displayed a drastic increase in frequency in the DCPSE but is used at similar rates in British and American English. Reducing the frequencies displayed in figure 4.1. to occurrences in present-tense affirmative contexts, the differences between British and American English are even more obvious with American English taking the lead in the decline of central modals *must* and *should* and in the increase of semi-modals *have to* and *need to*. *(Have) got to* is still more frequently used in British English (cf. appendix table 4.2).

All in all, the findings correspond with findings of previous research. The reasons for the outstanding frequency of *have to* and the status of *have got to* still need further investigation. An analysis of the syntactic characteristics will illustrate to what extent individual modals could be exchanged by another modal of obligation with respect to their syntactic context; analysing to what extent modals and semi-modals occur in these interchangeable contexts can illustrate to what extent syntactic flexibility is one responsible factor for the rising frequency of *have to*. Furthermore, the differences between *have to* and *need to* will have to be analysed in more detail since *need to* shares the syntactic characteristics with *have to* and is often claimed to be a more polite replacement of *have to* (cf. Smith 2003, Nokkonen 2007, Seggewiß 2008).

### 4.2.2 Syntactic distribution

Figure 4.1 above presents the frequency of modals and semi-modals of obligation in all possible syntactic environments and does not distinguish between base forms and inflections and contracted and uncontracted forms. However, since
there are important differences in possible syntactic environments of modals and semi-modals, and the semi-modals are used in a number of contexts which are not available for the central modal, the following section will compare these different environments and forms in British and American English. The only contexts in which central and semi-modals can be used without syntactic difference are present-tense affirmative uses with the modal auxiliary functioning as operator. The following figures display the distribution of syntactic uses of each verb in percent.

Figure 4.2: Syntactic forms of must CSAE vs. ICE GB

The syntactic distribution of must is very similar in both varieties with one important difference: Negative uses of the following kind only occur in the British data.

1) Oh we mustn't be too late then.<> (ICE_GB_S1A_099_124)

In contrast to the remaining modals of obligation, must express a negated permission rather than lack of necessity. These uses play only a minor role in British English and, at least in a small corpus such as the CSAE, have become obsolete. In about 61% of all uses in American and about 70% in British English must occurs in affirmative context and could be substituted by other modals of obligation with regard to their syntax.

The syntactic profile of should is very similar in both varieties, too. Again, there are a few more interchangeable contexts in British than in American Eng-
lish. One feature typical of American English is the use of *should* in interrogatives. In formulaic uses of the type illustrated in 2); this use corresponds with occurrences of *shall* in British English illustrated in chapter 3 above. These uses are a possible reason for the larger amount of interrogatives in American than in British English. In the remaining corpus examples, *must* and *should* are used in perfect constructions which only rarely (one instance in ICE GB) occur with the semi-modals.

2) 188 985.144 ... Oh okay s- -- 985.144 992.289 ... Okay so, 992.289 994.264 *should* I just call back in a little bit maybe? 994.264 1000.672 ... Okay, 100 (sbc047.trn)

3) was .. had the ball, 48.222 48.959 CAM: ... Nice. 48.959 50.794 WESS: But he *must've* pushed it up there or something, 50.794 51.405 I don't know, 51.405 5 (sbc059.trn)

4) eighty .. gra=ms of carbohydrate .. per day. 156.903 160.936 ... Actually [I *should've*] done that. (sbc041.trn)

![Figure 4: 3: Syntactic forms of *should* CSAE vs. ICE GB](image)

Figure 4: 3: Syntactic forms of *should* CSAE vs. ICE GB

Although 73% of *need to* occur as operator in present tense, affirmative contexts in American English, only 53% of all occurrences are used in such contexts in British English. In the remaining contexts, *need to* is syntactically flexible, being used in negations (5), preceded by auxiliaries (6), and is used as participle form (7) or in the simple past (8).

123
5) You don't need to explain to us (ICE_GB_S1A_042_45)

6) um, 25.510 26.600 If he does not improve, 26.600 28.105 we may need to take some X-rays, 28.105 30.795 and he's got some bone=s, 30.795 32.015

7) And I wasn't sure when I thought that whether we were supposed to be looking at <,> skills <,> you know whether we were needing to persuade someone or <,> or quite what we were you know trying to get out of this conversation (ICE_GB_S1A_064_33)

8) But I mean it’s because I needed to go on a trip for a week in Leningrad (ICE_GB_S1A_014_137)

![Figure 4.4: Syntactic forms of need to CSAE vs. ICE GB](image)

This syntactic flexibility is most important in the use of have to, where less than half of all occurrences are in interchangeable contexts. There are quite a few instances of inflected had to or having to (e.g. 9), 10 and about as many examples where have to is preceded by another auxiliary such as might/ will have to (11), allowing combinations of different modalities or of tense and modality. It is only rarely used in questions.

This differentiation between interchangeable and non-interchangeable contexts needs to be kept in mind while comparing the frequencies of modals and semi-modals. Thus, one important factor for the high frequency of have to in both British and American English is its syntactic flexibility (cf. also Smith 2003, Collins 2005, 2009).
9) I had to sit next to Theresa Coffey (ICE_GB_S1A_068_129)

10) The French guy in the studio says that he’s been going on about having to go to London to cut a record tomorrow so it sounds OK (ICE_GB_S1A_100_83)

11) LEA: ... I think you’ll have to wait on that one. 997.759 998.850 (sbc048.trn)

Figure 4.5: Syntactic forms of have to

Figure 5.6. illustrates the syntactic forms of have got to. Its syntactic distribution is not so relevant here because it is almost restricted to affirmative contexts. Moreover, there aren’t any inflected forms other than has got to such as having got to or had got to. There are only one interrogative and one negative example in the whole data, both of them occur in ICE GB. Nevertheless, the distribution into its different forms with respect to contractions and clitics shows significant differences between the two varieties.
The full form *have/has got to* only occurs in ICE GB, where it constitutes 8% of all uses (12). The major form in British English is the contracted form ‘ve/’s got to with 82%. In another 8%, *have/has got to* is reduced to *got to* without any form of *have*. Interrogative and negative contexts hardly occur.97

In American English, the status of grammaticalisation is further advanced. Instead of layering of old and new forms, the older form *have got to* has become so rare that it doesn’t show up at all in a small corpus such as the CSAE. In 8% of all uses *have got to* occurs as contracted ‘ve/’s got to (13), and in 19% it is further reduced to ‘ve/’s gotta (14). In the majority of American English uses (69%), however, *have got to* is contracted to *gotta* (15) without any form of *have got to*. Thus, the syntactic development clearly indicates that *have got to* displays a later stage of grammaticalisation in American English. Paradoxically, however, though being further grammaticalised in American English, *have (got) to* occurs less frequently than in British English.

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97 For details on the development of *got to* cf. Lorenz (in progress), who analyses frequency effects on the contractions *gotta, wanna, gonna* by means of very recent US data.
A and more likely I suppose primary because your first degree has got to relate pretty closely if you’re going to get on a course in most cases (ICE_GB_S1A_033_174)

FRANK: [I’ve got to start working] on my grade cards (sbc019.trn)

KIRSTEN: But basically, 1167.821 1168.939 you’ve gotta separate, 1168.939 1171.551 (H) the fresh water from the salt water, 11 (sbc058.trn)

TIM: ... Flash didn’t go. 190.818 191.911 JUDY: You gotta look for the green light, 191.911 192.565 and then press. (sbc0010.trn)

Although it needs to be kept in mind that different transcription conventions in ICE GB and the Santa Barbara corpus might blur the results because occurrences transcribed as gotta in the CSAE could have been transcribed as got to in British English, the status in spoken American English is still more advanced as there are far more uses of got to/gotta with ellipted have than in British English. In American English, however, rather than layering of the old and new forms, have got to does not occur in the CSAE, which is quite surprising.

The conspicuous development of have got to could be due to the following reasons. Have got to is the only of these verbs with a reduced paradigm since, as the syntactic analysis has shown, it is hardly used in questions and negations. In the data analysed here, the frequency differences between British and American English are not significant; a number of studies, however, report a substantial loss of have got to in American English (e.g. Jankowski 2004: 95). Comparing frequencies of modals of obligation in other varieties of English, it was shown that (have) got to belongs to the less frequently used modals of obligation in other varieties than British English. It is mainly used in spoken British English and was therefore interpreted as a Briticism. It is surprising to note, however, that the syntactic development in terms of grammaticalisation and emerging modal characteristics, displays a more advanced stage in American English. In this variety, the full form have got to is hardly used and the majority of occurrences are the reduced form gotta. Mair (2012) uses the web as a corpus, which offers the chance of analysing non-standard and informal forms which often remain unnoticed if analysing traditional corpora. He finds a number of instances where got to/gotta is used with do-support. These instances are, however, restricted to informal and nonstandard American English (Mair 2012: 248). With main verb syntax, (have) got to would be syntactically more flexible.
The American dislike of \((\text{have})\ \text{got to}\) could date back to negative associations with \text{got} in American English a few centuries ago. Tagliamonte et al. (2010) analyse variation in the use of possession marking and compare the variation of \text{have} and \((\text{have})\ \text{got}\) in Canadian English. They find out that the expression of possession correlates with social factors and mirrors the history of the Canadian settlement. Referring to prescriptive language guides at the beginning of the 20\textsuperscript{th} century, they point out that \text{have got} was stigmatized by American but not by British writers (Tagliamonte et al. 2010: 155). In present-day Canadian English, \text{have} is regarded as the most prestigious form, being mainly used by female, more educated speakers and \text{have got} is used by less educated speakers (without any gender effect). They point out that “although these forms are complementary linguistically, they are not complementary socially” (Tagliamonte et al. 2010: 169) because \text{got} is socially stigmatized as a non-standard form, being mainly used by male speakers with less education.

Similar social and regional marking could be responsible for the variation of \text{have to} and \((\text{have})\ \text{got to}\), which have these possession markers as their source forms. This would also support Leech et al.’s (2009: 140) claim that a ‘prestige barrier’ prevents \text{have (got) to} from spreading in American English (cf. 2.3.3). In a gradual process of grammaticalisation, (Krug 2000) \text{have to} and \((\text{have})\ \text{got to}\) developed semi-modal (emerging modal) characteristics. \text{Have to} is the most common modal of obligation in written and spoken registers of British and American English. \text{Have (got) to} is typical of colloquial language in both British and American English. The fact that it is more common in British English probably still dates back to its social stigma in American English.

4.2.3 Semantic distribution

The following two figures focus on the semantic distribution into root, epistemic and formulaic uses of the modals of obligation in contexts where they are interchangeable. Thus, any inflections, negations and interrogatives were excluded from the semantic analysis.
It can be seen that the semantic distribution is relatively similar in both varieties. The major meaning of most modals and semi-modals is root necessity. The central modals *must* and *should*, however, are also used in epistemic contexts. About half
of the uses of *must* occur with epistemic meaning in both British and American English. The numbers of epistemic uses of *have to* and *have got to* are very low. One of the few examples from the CSAE is represented by quotation 16) below. The data suggests that formulaic uses of the type ‘I must say’ and ‘I should think’ are Briticisms; formulaic uses of *should* in questions, which were discussed above, are Americanisms. Thus, in both British and American English *must* and *should* move along the grammaticalisation paths from root to epistemic necessity. Both also develop formulaic uses which, however, can differ across varieties.

16) I-.. it *has to* work I guess with numbers in it (sbc017.trn)

17) I *must* say I have driven once <,> uhm in Australia uhm <,> and uhm (ICE_GB_S1A_097_155)

18) I mean I *should* think you 'd get over the uhm <,> the voyeuristic aspects in the early stages and uhm you 're really dealing with people 's lives pretty wrecked <,> and that can be very bitter in some cases (ICE_GB_S1A_061_268)

On the whole one can say that *have to* and *have got to* replace *must* and *should* in their root but not in their epistemic or formulaic uses. Considering the three different meanings as diachronic stages of grammaticalisation, it becomes clear that the central modals are further advanced and, as the few instances of epistemic *have to* and *have got to* indicate, the semi-modals are beginning to show signs of ongoing grammaticalisation as well. Nevertheless, the epistemic instances occur in such a small number that it is not possible to make any generalisations for this development.

### 4.2.4 British and American as opposed to other English varieties

The following figure compares the frequency of the modals of obligation in British and American English with some varieties with English as a first language, with comparable ICE corpora available: New Zealand and Irish English. The findings are based on the private conversation components and include occurrences of all possible syntactic forms and environments. The figures largely correspond with the results of Diaconu’s (2011) analysis.98

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98 In the present analysis, the aim of including other varieties than British and American English is just to see whether the distribution of modal expressions is similar across varieties and points towards general developments. For more detailed investigations of the modals of obligation in
Comparing the frequencies of modal auxiliaries in these four varieties it becomes clear that American English is leading most changes in this domain not only compared to British but also compared to Irish and New Zealand English. The decline of *must* is most pronounced in American English and the decline of *should* as well, though there is hardly any difference in frequency of *should* between American and Irish English. *Should* is still relatively popular in New Zealand English. Modal *need(n’t)* occurs only four times in ICE Ireland and is non-existent in the other varieties apart from one single instance in ICE GB. *Have to* is the dominant modal of obligation, its frequency is highest in Irish and American English. The frequency of *need to* is relatively similar in all four varieties, the highest frequency was found in American English again. The analysis of *(have) got to* displays interesting results. This modal of obligation occurs more often in ICE NZ and ICE GB than in American English and there are hardly any instances in the Irish data. In the Irish data, there is only one contracted form *gotta*. Note, however, that the Irish corpus is the only corpus where contracted forms of *have to*, such as ‘ve to/’s to were found in quite a large number (6% of all had to are

Figure 4.9: Frequency of modals of obligation in different varieties (ICE NZ, ICE IE, ICE GB, CSAE), normalised for 100,000 words.

varieties of English cf. Diaconu (2011), who presents a number of corpus-based analyses of *must, have to, have got to and need to* in British, American, Jamaican, Irish and Indian English.
reduced to ‘d to, 17% of all has to to ‘s and 16.7% of all have to to ‘ve to). These contractions do not occur in the other corpora under investigation and show that in the deontic domain Irish English apparently specialises to have to. The situation in Irish English might thus be comparable to that of Canadian English analysed by Tagliamonte and D’Arcy (2007) (cf. 2.3.5).

4.3 Interim summary
To conclude, the investigation into spoken American and British English has shown that the modal auxiliary domain is currently changing with most changes being further advanced in American than in British English; the analyses therefore confirm previous investigations of changes in the written domain by Smith (2003) and Leech (2003) among others. Developments in further varieties of English, in this case Irish and New Zealand English, point into the same direction. Further research is necessary in order to get a clearer picture of the ongoing changes. The following two chapters will analyse in more detail which modal verbs fill the gap apparently being left by decreasing must and need. Although (have) got to displays a stage of ongoing grammaticalisation in American English, its frequency is outnumbered by that of have to in all varieties, most dramatically in Irish and also in Canadian English, as Tagliamonte and D’Arcy (2007) have shown. It was discussed that the dispreference of using (have) got to in American English probably dates back to 20th century prescriptivists, criticising the use of got as a possession marker. The negative association with its source form could still be reflected in associations with semi-modal (have) got to. Although need to displays a drastic increase in frequency in the thirty-year period in the DCPSE and in written English, it still displays a relatively low frequency in general. The analysis has also shown that – while looking at changing frequencies of modals and semi-modal – the syntactic context needs to be taken into consideration. The semi-modal are far more flexible syntactically, and it is only in a restricted number of contexts that modals and semi-modal of obligation are interchangeable. Thus, the large increase in the use of have to across varieties is clearly related to its syntactic flexibility. Need to shares its syntactic paradigm but is not as frequently used. Thus, differences between the four modals of necessity and (strong) obligation must, have to, (have) got to and need to will be further analysed in the variation
analysis. Restricting the analysis to contexts in which a speaker has a choice over these four verbs with regard to their syntax and semantics will provide further information on similarities and differences between them.

5. Variation in the modals of obligation – a multivariate analysis (DCPSE)

Previous chapters have mainly dealt with descriptive frequency accounts of the changes currently going on in the modal auxiliary domain. It has been shown that there are significant shifts in frequency, syntax and semantics; the necessity/obligation domain proved to be particularly interesting, as these changes have been linked with changing attitudes in society in previous literature (e.g. Leech 2003, Smith 2003). Explaining the shifts in terms of grammaticalisation means talking about a long-term development, which can take place across several centuries. As the discussion of previous research has shown, democratisation is often viewed as an explanatory factor for changes in the modals of obligation. However, it has also been stated that the development of modal auxiliaries is part of a long-term process. As the analysis of modals in ARCHER has illustrated, the decline, increase and emergence of different modal items is in fact a long-term development so that the current shifts need to be regarded as part of a longer process. Applying Myhill’s observations for the 19th century to ongoing changes to present-day English, democratisation in the 20th century would mean taking into account changing attitudes in society only since the end of World War II. Though the tendency of democratisation might be one possible influencing factor, for example in the decline of must, it is not a sufficient explanation for the whole process. An analysis of variation of the modals of obligation will identify the influence of both language-internal factors and language-external factors on language change and ongoing grammaticalisation in the modals of obligation.

The idea of linking grammaticalisation and social processes is an important idea. As Hopper/Traugott state in their 1993 edition and still point out in their revised 2003 edition “a fuller integration of sociolinguistic and developmental research with research on grammaticalisation still remains to be worked out”
(Hopper/Traugott 1993: 30, cf. Tagliamonte 2006: 78, and Hopper/Traugott 2003: 30). Therefore, the present chapter will present a variation analysis of the modals of obligation in order to get a closer insight into possible factors influencing the changes by using variationist sociolinguistic techniques:

Variationist sociolinguistics is most aptly described as the branch of linguistics which studies the foremost characteristics of language in balance with each other – linguistic structure and social structure; grammatical meaning and social meaning – those properties of language which require reference to both external (social) and internal (systemic) factors in their explanation (Tagliamonte 2006: 5).

The underlying concept of variation stipulates that it is systematic, can be quantitatively modelled and may be indicative of language change in those cases in which the layering of different forms shows ongoing grammaticalisation (Tagliamonte 2006: 77).

Using variationist sociolinguistic techniques, this chapter is going to analyse variation of selected modals of obligation with regard to internal and external factors since “variation analysis puts language in context, socially, linguistically, synchronically and diachronically” (Tagliamonte 2006: 14ff.).

Tagliamonte (2004), Tagliamonte/Smith (2006) and Tagliamonte/D’Arcy (2007) analyse variation in the modals of obligation in York English, different English dialects and Canadian English respectively. Jankowski (2004) investigates these verbs in British and American English plays. The results of their analyses were discussed in 2.3.5. While previous analyses had to rely on apparent-time data based on age or region or on real-time written data, the present analysis is based on the DCPSE and can therefore use real-time data of spoken language to compare the distribution and interaction of different variables in the 1960s and the 1990s. It is to a large extent going to follow the procedure of the previous studies mentioned above. After chapter 3 focused on the syntactic differences of central and semi-modals of obligation and compared British and American English, this chapter is going to consider semantic and stylistic criteria more detailed and focus on British English again. The aim of this analysis is to find out to what extent must, (have) got to, have to and need to are interchangeable, and to what extent we can talk about ‘ecology’ of obligation with regard to their semantic profile. The impact of social and stylistic criteria will also be analysed: Previous variation
studies have shown methods of analysing degrees of obligation quantitatively by identifying variables indicative of prototypical strong and weak obligation. Thus, a clustering of these variables can show to what extent modals differ in their degree of obligation. If these differences are connected with change and variation, this can offer further insights into possible democratisation tendencies discussed above. Comparing the distribution of these variables in the 1960s and the 1990s will give additional information on changes in the modals of obligation: It will indicate if the modal auxiliaries are changing not only in frequency but also in function within the thirty-year period covered by the DCPSE. A further question addressed here is the issue of genre-specific changes. Comparing formal and informal spoken registers will illuminate the origin of variation and change.

5.1 Methodology of the variation analysis

The analysis will proceed as follows: First of all, the variable context needs to be defined since it is only in variable contexts that a speaker has a choice between the verbs under investigation. It was discussed in 4.3.2., that central and semi-modals are interchangeable in a restricted syntactic and semantic environment; a detailed definition of this variable context will be given in 5.2.1. 5.2.2. will introduce the different variables.

The analyses as such consist of three parts: first of all, the distribution of individual verbs according to the different variables provides insights into variation and possible language change and illustrates similarities and differences between individual verbs. However, the idea of a variation analysis is that looking at the different variables separately makes it difficult to identify the explanatory factors for language change among the variables. Assuming that the different factors contribute to the variation at different degrees, a cross-tabulation of two variables can show which factors interact (Tagliamonte/Smith 2004: 364). In the present analysis, cross-tabulations of different variables with the variable time can indicate changes in the distribution of variables in the 30-year period under investigation. Finally, a multivariate analysis will supply statistical data and will indicate
which combination of different variables accounts for the variation of each individual verb. 99

5.1.1 Definition of the variable context

For the present investigation, all instances of must, have to, have got to and need to occurring in variable contexts have been extracted from the DCPSE. Thus, negative contexts have been excluded because the scope of negation of must (1) differs from that of have to (2) or need to (3) and have got to hardly occurs in negations; for the same reason negative contexts such as 4) are excluded from the analysis. Interrogative uses, occurring mainly with have to (5) and need to (6), have been excluded, too.

1) they said you mustn't think it this is an acquired skill which needs practice you must just keep on going at it <,> (DCPSE_DL_B34_146)

2) You don't need to explain to us (DCPSE_DL_B34_45)

3) Anyway <,> we we don't have to do that <,> (DCPSE_DL_B18_20)

4) If you buy The Sun every day this week you you only have to pay five quid for a coach trip (DCPSE_DL_C09_286)

5) how many hours do you have to do (DCPSE_DL_B09_558)

6) Why do you need to chop them down <,> (DCPSE_DL_B20_97)

The same applies to any time references other than present. While must is frequently used with perfect have (7), have to is more often used in the simple past (8) and have got to is mainly used in the present tense. Moreover, only instances where the modals under investigation function as operator since must cannot occur in constructions such as will have to (8).

7) You must have been a very fast driver <,> and <,> without having a decision Over it we had to abide by the University regulation to allow <,> students who failed in part one <,> some of them <,> haven't done it yet you see <,> uh to <,> be Able to resist (…) (DCPSE_DL_A04_362)

8) we 'll have to discuss your financial situation in more detail (DCPSE_DL_C04_227)

99 The analyses in this chapter were conducted with SPSS Statistics for Windows.
This leaves a total of 473 instances of must, 410 of have to, 364 of have got to and 101 of need to. Table 1 illustrates the distribution of their semantic functions in syntactically interchangeable contexts.\footnote{The table includes root necessity, epistemic necessity and formulaic uses. Additionally, there are a few indeterminate cases (10 of must, 5 of have to, 1 of have got to) that have not been considered in this table.}

<table>
<thead>
<tr>
<th></th>
<th>must</th>
<th>have to</th>
<th>(have) got to</th>
<th>need to</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root necessity/obligation</td>
<td>N 243</td>
<td>N 386</td>
<td>N 353</td>
<td>N 101</td>
<td>1083</td>
<td>81.3%</td>
</tr>
<tr>
<td></td>
<td>% 22.4%</td>
<td>% 35.6%</td>
<td>% 32.6%</td>
<td>% 9.3%</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>N 8</td>
<td>N 0</td>
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<td>% 91.5%</td>
<td>% 4.0%</td>
<td>% 4.5%</td>
<td>% 0.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formulaic uses</td>
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<td>% 2.8%</td>
<td>% 0.0%</td>
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</tr>
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<td>N 405</td>
<td>N 363</td>
<td>N 101</td>
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<td>% 34.8%</td>
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</table>

Table 5.1: Semantic distribution in the root/necessity domain (DCPSE)

As table 5.1, however, shows, epistemic meanings as in 9) occur mainly with must (91.5% of all epistemic instances), while have to and have got to display just a few epistemic uses and need to is only used with root meaning. Formulaic uses (e.g. 10) prominently feature with must (80.6%), there are quite a few of have to (16.7%), only 2 instances of have got to, and need to does not occur in formulaic uses.

9) It seems that there must be quite a lot of late parrots in Cloud Cuckoo Land if the right honourable gentleman can come out with that stuff (DCPSE_DL_G02_35)

10) I must say I haven’t had the opportunity to speak to him about it <,,> hm <,,> (DCPSE_DL_B17_791)

11) And the first which which I have to say sounds to those who don’t share this point of view <,,> always sounds the noisier one uh is dominated by a view which I can express as follows (DCPSE_DL_I01_19)

For this reason, the following analyses concentrate only on those instances where the four modals under investigation express root necessity and occur in possible variation: 243 tokens of must, 386 of have to, 353 of have got to and 101 of need to. These 1083 tokens were coded according to a number of variables, which will be discussed in more detail in the next section.
5.1.2 Variables used in the analysis

Table 5.2 provides an overview of the variables analysed. Variables 6)-10) finally did not prove to be statistically significant; in the multivariate analysis, no model was found in which any of these three variables had a significant impact on the variation. This is why they will not be discussed in more detail. A more detailed discussion of the remaining variables will follow in the next sections.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) source corpus</td>
<td>LLC examples represent the period from 1958-1977 and those from ICE GB the period from 1990-1992. Are there any shifts in time?</td>
<td></td>
</tr>
<tr>
<td>2) register</td>
<td>Summarising informal face-to-face conversation and telephone-calls as representative of colloquial and the remaining genres as formal language, are there any differences in register?</td>
<td></td>
</tr>
<tr>
<td>3) subject person</td>
<td>Are the individual modals preferably used with 1st/2nd or 3rd person subjects? The underlying assumption is that obligations with 2nd person subjects can prototypically express stronger obligation than those with 1st or 3rd person subjects.</td>
<td></td>
</tr>
<tr>
<td>4) subject type</td>
<td>This variable is particularly important for 2nd person subjects, is the subject definite (and prototypically expresses strong obligation) or generic (expressing necessity or weaker obligation)?</td>
<td></td>
</tr>
<tr>
<td>5) dependent verb type</td>
<td>Is the dependent verb dynamic (prototypical of strong obligation) or stative in meaning?</td>
<td></td>
</tr>
<tr>
<td>6) genre</td>
<td>Looking at the distribution of each modal in each individual genre, are there any genre-specific preferences?</td>
<td></td>
</tr>
<tr>
<td>7) gender</td>
<td>Are there any gender-specific preferences of different verbs?</td>
<td></td>
</tr>
<tr>
<td>8) animacy</td>
<td>Is the subject inanimate or animate?</td>
<td></td>
</tr>
<tr>
<td>9) voice</td>
<td>Does the dependent verb have active or passive voice? (Obligations with passive voice often express more tentative obligations than active ones.)</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.2: Variables analysed

5.1.2.3 Variables register and genre

The DCPSE consists of spoken texts from seven different categories: the majority of texts are face-to-face conversations (both formal and informal). Additionally, there are transcriptions of telephone conversations, broadcast discussions and interviews, spontaneous commentary, parliamentary language, legal cross-examination, assorted spontaneous and prepared speech (2.2.3.1). As change typically starts in colloquial language before it spreads to more formal and written
registers (2.2.3), the face-to-face conversation component of the DCPSE is particularly important. Moreover, this genre constitutes about one half of the whole corpus. For this reason, the whole corpus was divided into two major categories: one containing informal face-to-face conversations and telephone calls (comprising a total of 451,086 words) and thus representing colloquial English, the other one containing the remaining categories (435,350 words) as representative of formal English. A more fine-grained distinction between different formal genres did not prove significant statistically which might to some extent be due to the fact that individual genres are not distributed evenly (cf. 2.2.4 for the number of words in each sub-corpus).

5.1.2. Subject person, subject type and verb type

In interpreting modals of necessity and obligation semantically, one can distinguish between strong and weak obligation (cf. 3.2.2). As argued before, however, this distinction is often hard to make, even by looking at the larger context. For this reason, Coates (1983) analyses modal meanings in terms of fuzzy sets and arranges the corpus examples on a scale ranging from prototypical strong obligation, meaning ‘it is imperative/obligatory’, to weak obligation, implying that ‘it is important’ (Coates 1983: 32). Prototypical examples of strong obligation thus have the following features:

(i) Subject is animate.
(ii) Main verb is activity verb.
(iii) Speaker is interested in getting subject to perform the action.
(iv) Speaker has authority over subject.
(Coates 1983: 33)

Coates illustrates the two extremes of the clines by means of the following two examples:

12) “You must play this ten times over”, Miss Jarrova would say, pointing with relentless fingers to a jumble of crotchets and quavers (Lancl-G332), expressing prototypical obligation as opposed to

13) Clay pots /.../must have some protection from severe weather (Lancl-403),
conveying necessity or weak obligation. The remaining examples range between these two extremes, satisfying some but hardly ever all of the four criteria (Coates 1983: 33).

Some of these criteria for strong and weak obligations can be used as variables to analyse the degree of obligation quantitatively (cf. e.g. Tagliamonte 2004, Jankowski 2004). Since features iii) and iv) are hard to categorise objectively if analysing individual sentences, only subject animacy and main verb type were analysed as variables in the multivariate analysis. Additionally, the subject person and subject type provide prototypical features of strong and weak obligation. The analysis distinguished between definite and generic subjects (cf. e.g. Tagliamonte 2004:45ff.). Modal expressions of obligation with generic subjects can be paraphrased by ‘one must/has to’ etc. and therefore express a more general necessity or weak obligation while those with definite subjects prototypically express a strong obligation, especially in the second person.

The following quotations\(^\text{\ref{101}}\) from the DCPSE illustrate the different subject types. 14) contains a definite subject where the obligation is addressed at a definite person.

14) you must tell me how to get to it (DCPSE_DL_B10_583)

In 15) and 16), the subject is generic because the obligation is due to preconditions or circumstances which apply in general.

15) And I mean you have to be a pretty efficient manager of time to do that and that's not really Bernard's strong point (DCPSE_DI_B26_41)

16) I want to go cos it 's free but you got to pay for your spouse (DCPSE_DL_B25_31)

While prototypical generic subjects are second person subjects, there are also a few third person subjects with generic meanings, in particular with have to. Example 17) is a general statement on singers, and example 18) has the generic subject ‘one’.

17) I mean singers have to learn you see <,> not to sort of go into a hall and <,> and do all this (DCPSE_DI_B37_87)

18) and <,> a certain amount of that <,> uh one has to take <,> as <,> a donnée <,> at the beginning of an honours course <,,> (DCPSE_DL_A01_308)

\(^{101}\) Cf. Tagliamonte/Smith (2006: 359) for similar quotations.
All in all one can say that generic subjects convey weaker obligations or necessities while definite subjects tend to express stronger obligations. However, as the difference between necessity and obligation is rather in terms of gradient scales and fuzzy sets, the classification of weak and strong obligation in terms of subject or verb types must be regarded as tendencies only. Of course there are also examples of definite subjects expressing weak obligation/necessity, e.g. in 19).

19) You have to walk through the middle of Kingston as well (DCPSE_DL_B02_305)

Still, the analysis of subject types is an empirical means to investigate these tendencies as empirically as possible, in particular in combination with other variables.

Subject person and passive uses also have an impact on the degree of obligation. Example 20) illustrates that passive uses with modals of obligation express (at least seemingly) weaker obligations because they do not refer to any direct addressee.

20) At daybreak everything has to be dried (DCPSE_DL_J10_98)

The following quotations demonstrate modals of obligation with first and third person subjects. First person plural uses by including the speaker in the obligation as well tend to express commands more tentatively (21). With regard to first person singular subjects, it is debatable whether one can speak of obligation at all or whether they rather express necessity as it is hard to impose an obligation on oneself (22). The distinction between necessity and obligation for verbs with third person subjects is often hard to make (23).

21) ‘,,> we ‘ve got to bear that in mind (DCPSE_DL_D06_186)

22) Christmas is coming I ‘,,> need to get an obscure present <unclear-word>

23) if I get in before half past nine which I do because my flat-mate teaches and has to leave Early so I get up Early and want to leave <,,> so the department has to redistribute (DCPSE_DL_B18_124)

Not only subject types but also verb types provide information about the degree of obligation: Stronger obligations prototypically include dynamic verbs while
weaker obligations often occur with stative verbs. The following two examples contain stative verbs:

24) I think you ‘ve got to be very honest with yourself and not not many people are prepared to be because it brings in their personal life (DCPSE_DL_B35_137)

25) they say nasty things like you have to have a good second-class degree (DCPSE_DL_A07_148)

26) And the students also keep diaries of their clinical experiences which must include ethical issues which are then brought back into the college and discussed in seminar groups again and in in big uh plenary sessions (DCPSE_DL_E04_120)

As verbs express general states of existence (24, 25) or relationships (26), modals of obligation with stative verbs cluster at the weaker end of the scale of obligation. Dynamic verbs are typically activity verbs (e.g. 27, 28) but there are also communication (29) and mental verbs (30) with dynamic meaning.

27) You don't know whether it’s one of those or whether it’s one of the five per cent that are malignant so you ‘ve got to remove it (DCPSE_DL_B80_89)

28) I must make a note of that yes (DCPSE_DL_A07_25)

29) and uhm looking at feelings is more difficult for him and he has to say oh well there’s nothing wrong dynamic communication (DCPSE_DL_A08_94)

30) I ‘ve still got to sort of decide what I want to do But uhm (DCPSE_DL_C07_232)

The following analysis will show whether the four modals investigated differ in their degree of obligation, assuming that the linguistic features of those verbs expressing stronger obligation will prototypically have 2nd person, definite subjects and dynamic verbs while those expressing weaker obligation will cluster at the other end of the scale, having generic subjects and stative verbs.

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102 Most stative verbs express general states of existence or relationships. For details on the distinction between these two verb types and their semantic domains cf. e.g. Biber et al. (1998: 118 ff. and 360ff.).
5.2 Distribution analyses

5.2.1 Distribution across time and registers

The following two figures represent the distribution of modal expressions of obligation in the period from 1958-1977 and from 1990-1992 in the DCPSE in order to investigate changes in the within this thirty-year period:

Figure 5.1: Distribution of modal expressions of obligation 1958-1977 (DCPSE)

Figure 5.2: Distribution of modal expressions of obligation 1990-1992 (DCPSE)
It becomes evident that the distribution in these two periods differs significantly: The only modal that remains stable with 33% is *have got to*. The amount of *need to* drastically increases from 5% to 14% and that of *have to* from 31% to 40%, both at the expense of *must*. While the proportion of *must* is 30% in the 1960s, this number decreases to only 13% in the 1990s. Thus, *have to* and *need to* are apparently taking over deontic functions previously expressed by *must*. A more detailed analysis will reveal to what extent and in which particular functions the two verbs replace *must* and in how far they differ from each other and from *have got to*, which remains stable in frequency across the period.

The following figures compare the distribution of modals of obligation in different registers by comparing formal and informal registers. They also point out differences in time:

Figure 5.3: Distribution of modal expressions of obligation 1958-1977 in colloquial registers (DCPSE)
Figure 5.4: Distribution of modal expressions of obligation 1990-1992 in colloquial registers (DCPSE)

- must: 35%
- need to: 11%
- have to: 41%
- (have) got to: 13%

Figure 5.5: Distribution of modal expressions of obligation 1958-1977 in formal registers (DCPSE)

- must: 28%
- need to: 32%
- have to: 5%
- (have) got to: 13%
There are interesting differences in genre distribution in the two periods: While in the 1960s, the domain of necessity and obligation is relatively evenly distributed among *must*, *have to* and *have got to* in both formal and colloquial registers, this situation is different in the 1990s. The proportion of *must* decreases to 12% in colloquial and 14% in formal registers, while *have to* with a proportion of 49% of all modals of obligation is gaining ground in formal genres. *Have got to*, by contrast, decreases down to 23% in formal registers and is mainly used in colloquial genres, where its proportion constitutes 40% of all verbs under investigation. Along with its increase in frequency, the amount of *need to* rises to 13% in colloquial and 14% in formal genres, but *need to* remains evenly distributed among colloquial and formal text categories. Assuming that language change initiates in colloquial English from where it spreads to more formal and then written language, the most advanced change can be seen in the distribution of *have to* with its spread to more formal registers. This finding is in line with its general increase in frequency. The development of *have got to* is going into the opposite direction: Although its frequency remains relatively stable in general, it is now concentrating in more colloquial rather than written genres. This shift corresponds with findings in previous research, attesting its decrease in frequency (e.g. Tagliamonte/D’Arcy 2007, cf. 2.3.5). Further investigations into their different uses need to find out to what extent far *have to* and also *need to* are replacing *must* and maybe even *have got to*.
5.2.2 Distribution according to subject types

Table 5.3: verb * subject type cross tabulation

<table>
<thead>
<tr>
<th>Subject type</th>
<th>verb</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>definite subject</td>
<td></td>
</tr>
<tr>
<td>must</td>
<td>222</td>
<td>239</td>
</tr>
<tr>
<td>have to</td>
<td>266</td>
<td>384</td>
</tr>
<tr>
<td>(have) got to</td>
<td>270</td>
<td>354</td>
</tr>
<tr>
<td>need to</td>
<td>94</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>852</td>
<td>1078</td>
</tr>
<tr>
<td></td>
<td>generic subject</td>
<td></td>
</tr>
<tr>
<td>must</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>have to</td>
<td>118</td>
<td></td>
</tr>
<tr>
<td>(have) got to</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>need to</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>226</td>
<td></td>
</tr>
</tbody>
</table>

The graphs in figure 5.7 are the results of a cross tabulation and contrast the distribution of must, have to, have got to and need to in terms of subject type, distinguishing between definite and generic subjects. Table 5.3 displays the actual frequencies and shows that definite subjects occur four times more frequently than generic subjects. Looking at the distributions, it becomes clear that the definite subject domain is relatively evenly shared by must, have to and have got to with each having a share of about 30%. Need to is more often used with definite than with generic subjects, taking 11% of the definite subject types but only 3% of the generic subjects. Have to shows the most significant differences between the two subject types as more than half of the generic subjects occurring in the data analysed occur with have to. The amount of have to with 32% in the definite subject and 37% in the generic subject domain is relatively similar. Must, by contrast, is
preferably used with definite subjects whereas only 7% of generic subjects occur with *must*.

The next table displays the distribution of the four modals with regard to subject person. It is interesting to note that, although the frequency of *need to* is lower than that of *must*, their overall distribution of subject person is very similar; both are rarely used with 2nd person subjects but more often with 1st person or 3rd person subjects. *(Have) got to* displays the highest frequency among the second person subjects while *have to* in most instances has got 3rd person subjects. Consequently, there are a number of uses where the four modals occur in similar contexts and are interchangeable.

<table>
<thead>
<tr>
<th>verb</th>
<th>subject person</th>
<th>Total</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st person</td>
<td>2nd person</td>
<td>3rd person</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>verb</td>
<td>Count</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>must</em></td>
<td>106</td>
<td>51</td>
<td>86</td>
<td>243</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within verb</td>
<td>43.6%</td>
<td>21.0%</td>
<td>35.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>have to</em></td>
<td>103</td>
<td>130</td>
<td>152</td>
<td>385</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within verb</td>
<td>26.8%</td>
<td>33.8%</td>
<td>39.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(have) got to</em></td>
<td>121</td>
<td>137</td>
<td>95</td>
<td>353</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within verb</td>
<td>34.3%</td>
<td>38.8%</td>
<td>26.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>need to</em></td>
<td>42</td>
<td>24</td>
<td>35</td>
<td>101</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within verb</td>
<td>41.6%</td>
<td>23.8%</td>
<td>34.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>372</td>
<td>342</td>
<td>368</td>
<td>1082</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within verb</td>
<td>34.4%</td>
<td>31.6%</td>
<td>34.0%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.4: verb * subject person cross tabulation

### 5.2.3 Distribution according to verb types

Comparing the four modals in terms of verb types by making a distinction between stative and dynamic verbs does not display as significant differences between individual verbs as the subject type. In general, dynamic verbs occur a lot more often in the data than stative ones. *Have to* takes the same amount of both types of verbs, *(have) got to* is 9% more frequent in the dynamic verb domain, *must* in contrast is 8% more frequent with stative verbs. Jankowski (2004) points out that in the process of grammaticalisation, *must* is - alongside with its decrease in frequency – specialising into two major functions: the first one is the expression of direct, authoritative obligations, and the second one is the use with stative verbs such as *be* and *have* (Jankowski 2004:105). Since *must* is the only modal
expression of obligation which prefers stative verbs, this tendency might also be reflected in the DCPSE data. The following two examples illustrate the two verb types by means of examples of *must*, 31) contains a stative and 32) a dynamic verb. The amount of *need to* with 9.7% and 8.7% respectively does not show any important differences between dynamic and stative verb usage.

31) the answer I think *must* be no <,> because the great strength of the self-employed sector is precisely that most of these people do not want the kind of intervention or interference or even pseudo-protection that the honourable lady suggests (DCPSE_Di_G05_87)

32) And one of the things that I feel very strongly about is that we *must* commission new writers to write for the main stage <,> (DCPSE_Di_E10_47)

![Figure 5.8: Verb types: Distribution of *must*, *have to*, *have got to*, *need to*](image)

<table>
<thead>
<tr>
<th>dependent verb type</th>
<th>dynamic verb</th>
<th>stative verb</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>verb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>must</em></td>
<td>183</td>
<td>52</td>
<td>235</td>
</tr>
<tr>
<td><em>have to</em></td>
<td>310</td>
<td>67</td>
<td>377</td>
</tr>
<tr>
<td><em>(have) got to</em></td>
<td>295</td>
<td>48</td>
<td>343</td>
</tr>
<tr>
<td><em>need to</em></td>
<td>85</td>
<td>16</td>
<td>101</td>
</tr>
<tr>
<td>Total</td>
<td>873</td>
<td>183</td>
<td>1056</td>
</tr>
</tbody>
</table>

*Table 5.5: verb * dependent verb type cross tabulation*

This section has dealt with the different variables separately and independently and has used statistics nearby to tabulate frequencies for easier reference. These descriptions will be complemented by a multivariate analysis in order to determine the extent to which the differences between individual verbs discussed
above are statistically significant. Moreover, the analysis will show which factors interact with the factor time since differences in the distribution of must, have to, have got to and need to in the 1960s and in the 1990 can indicate ongoing language change.

5.3 Multivariate analysis: results and discussion

The following table contains the results of the multivariate analysis. It presents the results of four independent multivariate analyses conducted with SPSS 15.0, using the binary logistic regression model, which “estimate(s) which of two outcomes is more likely to occur given that one or more independent variables (…) influence the outcome” (Szmrecsanyi 2006: 53).

The basic design of the statistical analysis is that “the dependent variable is a speaker’s choice for one of two linguistic options” (Szmrecsanyi 2006: 58); thus, table 5.6 represents four independently conducted regression analyses, in which the respective modal expression functions as dependent variable as opposed to all other modal expressions (e.g. must as opposed to have to, have got to and need to) and is analysed in relation with a number of independent variables. The variables source corpus (time), formality, subject person, subject type and verb type, provided the best models in order to explain the variation.103

As Nagelkerke’s R-square values show, this model is significant for all modals except for have got to. A model is statistically significant if it accounts for at least 5% of the variation, thus if $R^2 \geq 0.05$ (cf. Szmrecsanyi 2006: 55). This means that the present models are satisfactory though not perfect for explaining the complete variation in the modals of obligation. Maybe a larger data set with more tokens or some additional variables might result in better R-squares.

The table illustrates the contribution of the independent variables in terms of odds (or exp(b) values) in order to analyse how important individual independent variables are, in how far they influence the dependent variable in a statistically significant way and how well they predict the dependent variable. Odds higher than 1 indicate that the variable is favoured by the modal under investigation, while odds below 1 indicate that this variable is disfavoured (cf. Szmrecsanyi

103 At the beginning of the study, the data was coded for some variables which finally proved to be insignificant because they did not have an influence on the variation. These variables (e.g. gender, animacy, voice, education) were therefore excluded from the analysis again.
To illustrate this by means of an example, definite subjects have got a favouring effect on *must*; if the subject is definite, the chances that *must* is used increase by factor 4.712; the chances that *have to* is used, in contrast, decrease by 0.639. The odds have been tested for statistical significance and significant odds are indicated in bold print.

<table>
<thead>
<tr>
<th>Source corpus (LLC vs. ICE GB)</th>
<th><strong>Must</strong></th>
<th><strong>Have to</strong></th>
<th><strong>Have got to</strong></th>
<th><strong>Need to</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>LLC (1960s)</td>
<td>Exp(b) (odds ratios)</td>
<td>*<strong>3.331</strong></td>
<td>*<strong>.591</strong></td>
<td>1.066</td>
</tr>
<tr>
<td>Formality (formal vs. colloquial)</td>
<td>Exp(b) (odds ratios)</td>
<td><strong>1.372</strong></td>
<td>1.073</td>
<td>*.747</td>
</tr>
<tr>
<td>Subject type (definite vs. generic)</td>
<td>Exp(b) (odds ratios)</td>
<td>*<strong>4.712</strong></td>
<td>*<strong>.394</strong></td>
<td>.841</td>
</tr>
<tr>
<td>Subject person (1st, 2nd, 3rd person)</td>
<td>Exp(b) (odds ratios)</td>
<td>1.163</td>
<td><strong>.639</strong></td>
<td>1.359</td>
</tr>
<tr>
<td>Subject person (1st, 2nd, 3rd person)</td>
<td>Exp(b) (odds ratios)</td>
<td>.971</td>
<td><strong>.634</strong></td>
<td><em>1.719</em></td>
</tr>
<tr>
<td>Dependent verb type (static vs. dynamic)</td>
<td>Exp(b) (odds ratios)</td>
<td><strong>.590</strong></td>
<td>1.088</td>
<td>1.385</td>
</tr>
<tr>
<td>Percentage correct</td>
<td></td>
<td>77.5%</td>
<td>66.0%</td>
<td>67.4%</td>
</tr>
<tr>
<td>Nagelkerke’s r-square-2</td>
<td></td>
<td>.154</td>
<td>.069</td>
<td>.033</td>
</tr>
</tbody>
</table>

* = exp(b) values are significant at p< .05, **= p<0.01, *** p< 0.001; exp(b) >0  variable has got favouring effect, exp(b) < 0  disfavouring effect; Nagelkerke’s R-square: values $R^2 \geq 0.05$ are significant (cf. Szmrecsanyi 2006: 55ff.)

Table 5.6: Four independent multivariate analyses

The results of the multivariate analyses can be summarised as follows: *must* decreases in frequency, is favoured with definite subjects and mainly used with stative verbs. *Have to*, in contrast, increases in frequency, favours generic subjects and third person subjects. *Have got to* is preferably used in colloquial registers and with 2nd person subjects and it is the only modal under investigation which remains stable in frequency. *Need to* clearly increases in frequency and favours definite subjects. Must also favours definite subjects, decreases in frequency and is more often used in formal contexts. In general, the results of the multivariate analysis corroborate a number of the findings discussed in the preceding chapters.

The following quotations represent one prototypical example of each verb:

33) and one has to face this <,> <,,> (DCPSE_DL_B08_172)
34) You ‘ve got to say he or she (DCPSE_DL_B43_290)

35) oh I I absolutely of course they must talk to the nurses <,> but <,,> for-
formal formal therapy sessions is a different matter (DCPSE_DL_A08_341)

36) Just just uh just uh <,> I think he just needs to talk to someone really
DCPSE_DL_C04_153

If looking at the overall shifts in frequency it becomes clear that have to is the
dominant means of expressing obligation. Must is decreasing and this decrease is
linked with the increase of need to as well as have to since have got to is only in-
creasing in colloquial registers. In how far are the shifts in frequency related with
their function if looking at the variables analysed?

The decrease of must appears to be compensated by need to to some cer-
tain degree because both favour definite subjects and must is decreasing. This
supports theories of democratisation viewing need to as a more distanced means
of expressing obligation. Have to, in contrast, favours generic subjects; moreover,
being used with 3rd person subjects, have to conveys weaker obligations than
must. This finding is in line with Jankowski’s (2004) analysis of British English,
pointing out that have to is the favoured expression of weak obligation in British
English. Have (got) to does not increase in frequency but remains stable and
spreads to colloquial English. In this register, however, have got to is used in
similar contexts as must and need to, expressing comparatively direct obligations
with 2nd person subjects. This lends further support to the fact that have got to is a
stylistic marker, being typical of colloquial language. As explained before, some
studies even report a decrease in frequency of have got to. Tagliamonte/D’Arcy
(2007), for instance, predict that have got to might exit the modal system at least
in Toronto English, and Jankowski (2004) reports a decrease of (have) got to in
American English as well. Since (have) got to is not (yet?) decreasing in fre-
quency in the DCPSE, it can be regarded as Briticism. An analysis of have got to
at an even later period would show if British English is going to follow American
or Canadian English in this respect in the long run.

As a next step, it was tested whether these variables display interaction
with the factor time, thus whether any variables are significant in the 1960s but no
longer in the 1960s or vice versa. However, trying out a number of different com-
binations of variables including interactions with the time factor, the only signifi-
cant differences were an increasing use of definite subjects for must and an in-
crease of have got to in colloquial registers. All remaining combinations remained insignificant so that the model displayed above is the only comparable model for all modals (except have got to). This illustrates that even though there are some shifts in frequency within the thirty-year period, the functions of individual modals hardly change within this thirty-year period.

5.4 Interim summary

The multivariate analysis is a helpful tool in analysing variation quantitatively by calculating the interaction of different factors. It can point towards differences and similarities of individual modals and provides statistical foundation. Important results of this analysis are for instance that by comparing increasing need to with decreasing must there is some evidence that need to is taking over some functions previously being expressed by must. Have got to does not spread to more formal genres but rather increases in colloquial contexts; have to displays a significant increase in frequency but, in contrast to must and need to, is the modal which is the most popular modal with generic as well as third person subjects, thus to some extent expresses weaker obligation or necessity.

All in all, the present analysis showed important insights even if it did not answer all questions being posed at the beginning of this chapter. First, the aim was to conduct a real-time analysis and to see in how far the modals investigated differ in various functions, e.g. their degree of obligation, within the thirty-year period. The fact that – apart from shifts in frequency – there are hardly any differences in functions might, however, be due to the fact that either the period under investigation is too short for investigating significant shifts in usage or the corpus as such is too small to yield significant results. Moreover, the aim was to investigate social variation. However, the only social information on speakers in the DCPSE are education and gender. The variable education was not considered in the end because the only distinction that is being made in the DCPSE is that between primary and secondary education. Analysing the variation according to differences in gender did not yield any statistically significant results. For this reason, social variation cannot be attested by means of the DCPSE data. It might be useful to take into consideration larger corpora, such as the BNC, containing a number of further social as well as regional factors. The diachronic dimension,
however, would then be missing or would have to be based on apparent-time data; this is why the DCPSE was still favoured over analysing data from other corpora.

The results point towards differences between individual verbs because some tendencies with regard to subject and verb type preference are observable. However, it is hard to draw any general conclusions since for none of these verbs the characteristics of strong or weak obligation cluster. For example, must favours definite subjects, which are typically found in expressions of strong obligation, but at the same time it occurs more often with stative rather than dynamic verbs which would prototypically belong to the weaker end of the scale. However, this might also indicate that - apart from strong obligation - must has specialized to uses where it occurs with second person subjects and stative verbs (you must have/you must be..., cf. Jankowski 2004: 105).

This shows that the degree of obligation cannot be completely quantitatively measured by means of this type of analysis even though it reveals important tendencies. It also indicates that the system of modals of obligation is still very flexible, which allows change and grammaticalisation to set in. Furthermore, it needs to be kept in mind that previous analyses have identified British English as more conservative than American and other English varieties in terms of changes in the modal auxiliary domain. Still, the DCPSE is the only diachronic corpus of present-day spoken English available. Having similar data from further varieties could provide a clearer picture of the situation.

The fact that the present combination of variables did not achieve perfect but only average models shows that variation in this domain cannot be completely modelled by means of the present analysis. The addition of further variables might be helpful to yield better results: Possible fields for further research would be a closer investigation of the syntactic environment such as preceding or following word, sentence length, main or subclause etc., comparable to Szmrecsanyi’s (2003) comparison of be going to and will.104 Furthermore, a corpus with even more social factors might provide important information. As Tagliamonte and Smith (2006) illustrate, there is considerable regional variation in the use of have got to. Thus, the impact of regional factors on have got to as well as on the re-

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104 Szmrecsanyi (2003) analyses the variation of will, shall and be going to. In contrast to previous studies focussing on social, stylistic and regional criteria, he investigates the syntactic environment of these future markers and analyses the impact of negations, dependent/independent contexts, main/-if-clauses and sentence length.
maining modals might be interesting for future studies. \textsuperscript{105} The focus of the present investigation, however, will remain on the question in how far the modals of obligation display different degrees of obligation in different speech situations in order to find further information on possible democratisation or colloquialisation processes. As a means to finding out in how far politeness or speaker hierarchies influence variation in the modal auxiliary domain, the analyses made so far will be complemented by a discourse analysis, taking into account factors such as speaker role and speech situation. This type of analysis will also illustrate advantages and drawbacks of concentrating on frequencies and statistical data only.

6. Modals of obligation in different speech situations – a discourse analysis (ICE GB)

Most language change starts in colloquial language and the layering of the modals of obligation in spoken English show are an important source for further research. The following chapter will discuss the use of modals expressions of obligation in different speech situations and look more specifically at some aspects that the variation analysis could not investigate completely. This chapter is called ‘discourse analysis’. Previous literature provides various definitions on the term ‘discourse’. Baker (2006: 3ff.) and Biber et al. (2007: 1ff), Fairclough (1992), for example, give an overview of previous definitions. Every corpus-based analysis as such, looking at language in use, is a kind of discourse analysis because it describes the use of linguistic forms in context (Biber et al. 2007: 2). What I mean by discourse analysis here, however, is the idea of looking at the modals not only quantitatively by means of frequency data and selected sentences, but by investigating individual occurrences of modal auxiliaries in their larger discourse context by looking at complete texts. Corpora, providing systematic collections of written and transcribed spoken data and containing information on genre and speakers offer a valuable source for this type of analysis. Still, an interest of combining

\textsuperscript{105} Krug (2000: 112ff) shows that there is significant regional variation of \textit{gotta} in the spoken BNC. Krug (2000: 190ff.) shows that region has a significant impact on the use of emerging modals in general. He points out that innovations spread from the South to the North. Tagliamonte/Smith (2006: 367) also show that “each dialect can be distinguished based on its unique distribution of frequencies of forms for deontic modality.”
corpus linguistics and discourse studies developed only recently. In the introduction to a collection of papers combining these two approaches, Partington et al. (2007) state:

For some considerable time, then, the dichotomy was virtually complete: corpus linguists were generally unaware that their quantitative techniques could have much to say about discourse, while discourse analysts rarely saw reason to venture forth very far from their qualitative ivory tower (Partington et al. 2007: 13).

With the increasing availability of computer techniques and the internet as well as with the development of specialised corpora, this situation has changed over the last decade (Partington et al. 2007: 13f.) as this collection of articles demonstrates among others. Further examples of combining discourse analysis with corpus analysis are Baker’s (2006) work “Using corpora in discourse analysis.” Biber et al.’s (2007) study “Discourse on the move – using corpus analysis to describe discourse structure” develops empirical corpus techniques in order to analyse the structural organisation of texts. Biber et al. state that “(...) individual ‘texts’ often have no status whatsoever in corpus investigations. Instead, what we find are comparisons of the distributional patterns in one sub-corpus to the patterns in a second sub-corpus” (Biber et al. 2007: 2). With its variety of formal and informal spoken genres and the availability of the sound files, the ICE GB corpus offers a valuable source for looking at individual texts. It will therefore be used here to complement the results of the preceding chapters.

The first section will start with an overview of the frequencies of individual modals in different ICE GB genres in order to show their prototypical distributions. This short quantitative overview will be followed by a qualitative discourse analyses. In contrast to previous chapters where the focus was mainly on frequencies and distributions of the modal auxiliaries and the interpretation of selected examples on the sentence level or within their immediate environment only, this section will concentrate on selected examples within their wider discourse context. The focus will be on several different spoken genres and two categories of written language where speakers make use of modals of obligation. The aim of the chapter is to investigate which pragmatic or stylistic factors are responsible for the changes discussed in the remaining chapters since “both for modality and other functional domains (...) other factors such as genre and pragmatics are often more influential than diachrony in accounting for overall variation” (Lech et al. 2009: 117). All texts are taken from ICE GB and are thus from the 1990s, and have been
analysed by means of the texts as well as by listening to the sound files of the spoken texts.

The first text (S1B-36) is a political broadcast discussion focussing on the question whether Saddam Hussein should stand trial for war crimes. The most common modal in this text is *should*, which is often used for moral issues, in this case whether trying Saddam Hussein would be justified. The use of *should* and the use of the other modals in this text will be discussed in the first section. The second text, S2B-30, is an address to the nation, dating from 1991, in which John Major justifies the war in Iraq and makes his point of view clear to the nation. The most prominent modal used in this text is *must*, making the speaker’s decision clear without leaving room for discussion of moral issues. The analysis of these political texts will be followed by the analysis of a public dialogue with *need to* as most frequent modal. In this classroom lesson (S1B-20), a university teacher in Biochemistry gives his students advice on their current research-projects. After that, some private conversation extracts will display typical uses of *have to* and *have got to* in spontaneous face-to-face conversation.

In order to compare spoken and written English usage of the modals of obligation, this chapter will conclude with analysing two written genres with prototypical obligation uses, and investigate selected examples from the genres instructional writing.

6.1 **Distribution across selected spoken text categories**

Prior to the analysis of individual texts, the following two figures give an overview of the distribution of modals of obligation in different speech situations in ICE GB. They include only root uses occurring in any syntactic environment. Figure 6.1 compares the frequency of five modals of obligation in private and public dialogues.
The overall frequency of obligation uses is slightly lower in the private dialogue component since people typically don’t impose many obligations in every-day conversation. The public dialogue component, consisting of broadcast discussions and interviews, business transactions, classroom lessons, legal cross-examinations and parliamentary debates displays a higher frequency of obligation uses. The overall tendency is in line with findings in previous chapters: must is hardly used in private conversation and only a little more often in the public component; have to is the most frequent modal of obligation in both genres. There is no difference in the use of need to between the two text categories; have got to, however, being more typical of colloquial language, occurs more often in the private component. While should is hardly used in private dialogues, it is the second frequent modal after must in public dialogues.
Figure 6.2 investigates two public conversation genres which display typical obligation uses, namely classroom lessons and broadcast discussions. Two texts from this category will serve as examples in the discourse analysis: in broadcast discussions modals of obligation are used in different persuasion strategies, for example. This kind of use will be exemplified in the first section of the discourse analysis, where the most frequently occurring modal is *should*. On the whole, *should* and *have to* are the most prominent modals of obligation in the broadcast discussion component, *must*, *have got to* and *need to* occur only rarely at roughly the same frequency rates. In classroom lessons, which display obligation uses in teacher-pupil hierarchy, *have to* is the most frequent modal, being followed by *should* and *need to*, both offering a rather polite way of expressing obligations as will be exemplified in the second section of the discourse analysis.

6.2 Discourse analysis 1: “Any Questions?” (S1B-36)

(total words. 2060, *must*: 2, *should*: 6, *have to*: 3, *have got to*: 2, *need to*: 1, *be to*: 4)

This public dialogue is a broadcast discussion called ‘Any questions?’ which was released in 1991. There are five different speakers: A: James Naughtie, a 40-year-old broadcaster, B: William Wallace, a 50-year old Senior Research Fellow in
The first question the discussion panel faces is whether ‘Saddam Hussein should stand trial for his war crimes’ (#004). This question is formulated with the modal should, opening a moral discussion of whether trying Saddam Hussein is justified or not. The first speaker, William Wallace, argues that he should not stand trial for his crimes. In Wallace’s eyes, the Arabs themselves are responsible for indicted Saddam Hussein as he believes that the concept of war crimes would impose Western values on the Arab world. One of the key sentences of his short speech is the following, which demonstrates an interesting use of three different modal expressions of obligation:

1) But we need to get out of this war into a peace which the Arabs themselves have to make and anything which suggests that the Western Christian world is imposing its own values on the Muslim world is something which we ought now to avoid (S1B-036 #009:B)

In this one sentence the three different modals are used with different implications. In ‘we need to get out of this war’, the speaker reminds his own people of the necessity to establish a peace process in the Middle East, including himself as an addressee by using the first person subject. The emphasis is on the necessity of getting out of this war in which British troops are involved. However, it is the Arabs’ responsibility to start the peace process, and this responsibility sounds more neutral and distanced through the use of have to in ‘a peace which the Arabs themselves have to make’. The clash of Western and Muslim values, however, is formulated as a sensitive issue in ‘we ought now to avoid’. This use of ought to is very similar to that of should discussed above and implies the necessity of considering in how far Western involvement in the Middle East would be morally justified. Using should would be equally possible here, but ought now to puts more emphasis on this statement than should would do. It is interesting to note that in those examples, where the speaker includes himself or his nation within the obligation, he uses different means of expressing obligations, namely need to and
ought to, while imposing an obligation on a third person (another country) with have to. Ought to is only rarely used and belongs to a more formal register than the remaining modals. Its use in this context sounds rather distanced and euphemistic. Listening to the sound files gives further interesting insights into the emphasis the speaker puts on different words. These words are indicated in bold print. His most important point is the necessity of ending this war immediately; so in the first part of the sentence there is more emphasis on out than on need to. In the second part of the sentence, however, which discusses the Arab’s responsibility, the emphasis is on both have and make in order to underline their obligation to take the necessary steps. The problematic issue of the opposition of Muslim and Christian Values is underlined through the emphasis on Western Christian as well as on ought to.

William Wallace continues his statement with a list of what the British have already done (‘we have pursued…, we have won…’) and concludes with his appeal to ensure the peace process:

2) Now it is most important to make sure that we restore to the Middle East as far as possible a lasting peace settlement (S1B: 36 #013: 1:A)

In this sentence, the obligation to take immediate steps is circumscribed by ‘it is most important to’ rather than being expressed by a modal of obligation. Through this formulation the appeal receives additional emphasis and is formulated in a more neutral way because there is no direct subject involved in this obligation, the subject ‘we’ only occurring in the dependent ‘that’ clause. This necessity also becomes clear in the choice of words which get special emphasis, namely now, most important, restore and lasting peace settlement.

The next speaker, George Robertson, agrees with this opinion, and after reporting on the horrors Saddam Hussein and former tyrants have done to the people in Iraq and Kuwait states:

3) But I feel along with William Wallace that we must be very careful about the future (S1B-036 #021: 1:C)

In this statement, the necessity of being careful in taking steps against Saddam Hussein is formulated with must, which makes it a very clear statement and does not leave much room for discussion or evaluation. In the remaining part of his
speech, however, he uses *should* repeatedly, making it clear that it is not Britain’s responsibility alone to decide on pursuing Saddam Hussein. In the following statement *should* is used for a suggestion:

4) (...) that *should* perhaps more fruitfully be used in other directions (S1B-036 #024: 1:C)

However, the discourse analytical perspective offers interesting insights that have not been considered in the quantitative analyses of the previous chapters. In quotation 4), for example, *should* occurs in collocation with perhaps. Through the use of the adverbial, the whole statement is weakened and *should* loses its force to some extent.

In his remaining comments, the speaker uses *should* in similar contexts as discussed below, referring to the question in how far Saddam Hussein should be punished for his crimes.

5) But I don’t think it *should* be up to us even to the alliance that fought Saddam Hussein in this case to make the decision about war crimes or whether there *should* be a prosecution. I believe that that *should* be a decision taken by the United Nations as a whole (S1B-036 #025: 1:C)

He formulates the decision whether he should be pursued rather tentatively with *should* and leaves the decision to the United Nations: ‘If they decide it’s necessary so be it’ is his answer in which he poses a neutral necessity with ‘it is necessary’. This example also illustrates that looking at the larger discourse context points towards some pragmatic uses which often remain unnoticed in quantitative analyses. For example, the statement starts with ‘I don’t think’, so the whole statement actually expresses a negation. In previous chapters, where instances of negated *should* were excluded, only instances of direct negation, i.e. *shouldn’t* or *should hardly* were excluded. The fact that pragmatic uses can sometimes cancel syntax, stresses the importance of qualitative analyses in addition to the insights quantitative analyses can give. ‘I don’t think’ as well as ‘I believe’ in the quotation above, are comparable to the collocational use of *perhaps* in 4) and to some extant weaken the modal meaning.

106 Looking at collocations of perhaps with selected modals in the spoken ICE GB component, there are 12 collocations of *should* with preceding/following *perhaps*, only 1 *perhaps* collocating with *have to*, 0 *must perhaps* and 7 *may perhaps*. This shows that the context often has got a constraining effect on the choice of different modals, too.
The next speaker, Mary Kaldon, agrees with her two former speakers as well but is more careful about the distinction between Western and Muslim values. Her modal auxiliary usage is comparable to that of the two speakers discussed above:

6) I have no doubt that they are also considered horrible according to Muslim values it’s probably up to the Arabs and the United Nations to decide whether or not he should be prosecuted (S1B-036 #033: 1:D)

The first necessity in this sentence is expressed by ‘it’s probably up to’, being followed by the use of should on the question whether Saddam should be prosecuted.

The next speaker, John Patten, displays a different auxiliary usage and answers the questions not as tentatively as the antecedent speakers, as he puts it himself:

7) It is necessary for me to uh put in a preamble before I answer the questioner’s question directly (S1B-036 #040: 1:E)

In his preamble he talks about the hostages having been taken by the regime in Iraq and reminds the audience of the necessity to ensure that they come back in the following two statements:

8) We all have to be a bit careful because hostages have been taken (S1B-036:042: 1:E)
   And the most important thing of all is to make sure that (…) they come back as quickly as possible (S1B-036 #043: 1:E)

Using ‘we all have to’ as well as ‘the most important thing of all is to’, the speaker puts additional emphasis to the necessity to undertake the necessary steps in order to ensure that the hostages will be brought back. After his preamble, John Patten reminds his listeners of the fact that Saddam Hussein has not been found yet, however, he does not have any doubts that there will be war trials as soon as he has been caught:

9) And there’s no doubt at all about it that if war crimes trials are to be mounted they could be mounted (S1B-036 #051: 1:E)

John Patten in general puts these demands very directly and not as tentatively as the previous speakers, who mainly use should. The following quotation, where the
obligation markers are *going to have to* and repetitive *are to*, express his opinion very clearly. It needs to be noted, however, that the syntactic context *going to have to* restricts the choice of using *must* or *should*. However, this example nicely demonstrates that combinations of modal auxiliaries like this can help strengthening the utterance; the obligation with *be going to* is more definite and thus stronger than it would be when only using *must* or *have to*.

10) I think it’s absolutely clear to me that uhmm as far as war crimes trials are concerned (...) it’s the Arab nations perhaps encouraged by the international community who’re *going to have to* decide in the end how far war crimes trials *are to* be conducted and if they *are to* happen (S1B-036 #057: 1:E).

As the answers the discussion panel give to the second question do not include many modals of obligation, this part will only be discussed very briefly: The answers of the second part focus on the question what the panel think will happen in the region if Saddam Hussein was to hang on. George Robertson, not believing that he actually will hang on, states very clearly:

11) And I think that they *must* be encouraged to implement a democratic structure to follow this and not just have yet another regime (S1B-036 #072: 1:C)

In the very last part of this text, John Patten points out:

12) You’ve got to have them behind secure borders but at the same time the Palestinians *have got to* be brought in from the cold (S1B-036 #105: 1:E).

This is the only example from this whole text where *have got to* is used. It sounds like a spontaneous and comparatively informal utterance; for this reason, it is to some extent more direct or even more emotional than *have to*. This might fit into the general language use of this speaker, which in quotations 7)-11) was characterised as very direct in general. However, it is difficult to interpret this quotation as this is the last sentence of the whole text. Still, the fact that *have got to* occurs twice in one sentence again illustrates that speakers tend to adhere to using the same modal of obligation while listing several necessities/obligations.

The analysis of this broadcast discussion has depicted different modals of obligation used in persuasion strategies. It has been shown that *should, need to, ought to, must, have to, have got to* and *be to* are used with slightly different functions. While *should* as well as *ought to* are mainly used for deliberations and moral decisions on the necessity to do something, with *must* and *be to* the obliga-
tion is expressed very directly. *Have to* and *have got to* are relatively neutral and express necessities and obligations from an objective point of view. *Have got to*, as the instance above illustrates, often bears an emotional or stylistic connotation. *Need to* in this text expresses a bare necessity and contains an appeal to do something. It is interesting to note that with the exception of quotation 1), where the speaker apparently uses three different modals of obligation on purpose because each of them has got a slightly different undertone, in most of the remaining statements the speakers resort to the same modal repetitively; this becomes clear by looking at example 4), where *should* occurs three times, and the repetitive use *are to* (10) and of *(have) got to* in 12).

6.3 Discourse analysis 2: “Address to the Nation” (S2B-30)

(total words: 905, *must*: 6, *should*: 2, *have to*: 2, *(have) got to*: 0, *need to*: 0)

The analysis above will be complemented by an analysis of one text which display a relatively high density of *must*. S2B-30, 001-076 is an address to the nation by the British Prime Minister John Major. It was broadcasted in 1991 after British forces had been sent to the Iraq. He says:

13) Tonight I want to explain to you why they are there and what this conflict is about. Our troops are part of an international force. It is drawn from many countries. It is acting under the authority of the United Nations and its purpose is to end Saddam Hussein’s ruthless occupation of Kuwait.

His whole speech is clearly structured because of the use of relatively short and simple sentences. The parallelisms and anaphora make his address sound rather forceful and easily accessible; the use of modals of obligation is very definite and clear cut as well.

In the part following quotation 13), the speaker explains and justifies the necessity of having sent troops to the Iraq. This explanation falls into different subparts displaying parallel text structures. He shifts back and forth from contrasting Saddam Hussein’s atrocities with the futile attempts of the United Nations to avoid this war. The inevitability of this war gets further emphasis by means of anaphora: (*‘Our troops are part of an international force...’*, ‘it...’, ‘it...’ contrasted with ‘he invaded’, ‘his army has conducted’, and ‘if such brutality’, ‘if you
appease…’. The report about Saddam Hussein’s invasion into Kuwait and his atrocities (#008-011) is followed by an enumeration of the attempts of the United Nations:

14) We did not want a conflict, I need hardly tell you that (S2B-03#1:A-011)

15) We have tried hard to avoid it We have given Saddam Hussein every opportunity to withdraw (S2B-03#1:A-014).

Through the anaphoric ‘we’, this statement sounds very pronounced and the comment ‘I need hardly tell you that’, where need conveys a bare absence of necessity and is basically like negated must/needn’t, puts additional emphasis on the issue as need mainly has the rhetorical function of a paralepsis.

After reporting further attempts of peaceful solutions, which the regime in Iraq finally has rejected, John Major draws the necessary conclusion:

16) At the United Nations the world agreed that Iraq must withdraw or be driven out of Kuwait <,> (S2B-030 #019: 1:A)

In this quotation, must is used to express a direct and strong obligation posed by the United Nations which, after the preceding explanations and justifications, sounds particularly persuasive.

The next obligation uses occur in 030-034, where the speaker talks about the deadline which was set to Saddam Hussein:

17) Then the world set him a deadline <,> Free Kuwait we said or we will have to free it from you<,> but Saddam Hussein has rejected all appeals (S2B-030 #024-27: 1:A)

This deadline is expressed directly by means of the imperative ‘free Kuwait’ and will have to expresses the inevitable steps if this deadline won’t be obeyed. In this example, have to expresses an objective and relatively strong necessity. The sound files demonstrate that have to in the quotation above gets emphasis, while in quotations with must the emphasis is typically on the dependent verb, e.g. on withdraw in 16). This emphasis makes the statement sound even more pronounced. It remains to be noted that must in this context with will would not be possible syntactically.

John Major continues reporting that Saddam Hussein has rejected every peaceful solution, talks about his atrocities and his invasion into Kuwait and fi-
nally points out that all warnings by the United Nations were effortless (#0027-#0034).

By means of these facts, he justifies the war in Iraq, regarding it as the responsibility of the United Nations.

18) Saddam has chosen instead to defy the world, The deadline passed on January the fifteenth and still he refused to withdraw, That is why we and our partners are now facing up to our responsibility, It is to compel him to obey the United Nations,<>(S2B-030 #035-038: 1:A)

In this example, the modal is to is used for the expression of necessity. As this necessity to take further steps is explicitly characterised as responsibility, it can be interpreted as a strong obligation. After explaining why it is compulsory to act now and not to delay this war any longer, John Major lists the major aims of the UN. He presents them in the first person plural, thus including Britain as well as the other nations as subjects:

19) Our aims are clear, They have been set out for all to see by the United Nations Security Council, First we must get Iraq out of Kuwait right out of Kuwait, Second we must restore Kuwait’s legitimate government, And third we must uphold the authority of the United Nations,<>(S2B-030 #43-046: 1:A)

In this list of the three aims of the United Nations, must occurs three times. Through the use of must the aims are made explicit and are expressed very directly; moreover, the repetitions add further importance. The stress, however, is always on the dependent verb and adds special emphasis on these words, which are indicated in bold print. In a later statement, in contrast, the speaker uses should:

20) We are simply doing what the United Nations said should be done,<>(S2B-030 #050: 1:A)

Here, should is used in reported speech and John Major points out that Britain is only acting in the name of the United Nations. Since should implies some kind of moral obligation, the operation in Iraq is expressed as Britain’s duty. Thus, by means of this quotation, he justifies the efforts in Iraq, regarding them as Britain’s moral responsibility towards the UN and the whole world. After this, he further explains and defends the necessity of the military interventions. In 21), however,
he shifts into a more neutral tone, pointing out that he is aware of the dangers this operation in Iraq will involve.

21) The operation on which we have embarked involves danger and sacrifice <,> but I am confident that it will succeed and we know it is a battle which has to be fought <„>(S2B-030 #053: 1:A)

In this utterance, the speaker uses have to which makes it sound relatively objective. This gives him the possibility of presenting the necessity of military interventions as an inevitable fact. It also mirrors his confidence in a successful outcome. In quotations 20) and 21), the stress falls on should and have to respectively, while the stress is on the dependent verbs rather than must as discussed in 19) above. This makes the statements sound more objective and distanced.

Major then continues his speech by reporting on the majorities this decision has received in Parliament, pointing out again that this was not his decision alone, and concludes this justification with referring back to the moral obligation of Britain in this situation; in this context, should is used:

22) And it is right that we in Britain should play our part <,> I take no pleasure in this conflict<,> but I do know what we are doing is right <,> (S2B-030 #057:58: 1:A)

The speaker goes on with further appeals on the necessity of this military operation:

23) The military operation must go on <,> on until the decisions of the United Nations are enforced <,> (S2B-030 #061: 1:A)

(…) 

24) We must try to work out security arrangements for the future so that these terrible events are never repeated <,> and we shall I promise you <,> bring our own forces back home just as soon as it is safe to do so <,> (ICE GB:S2B-030 #063: 1:A)

In these appeals, the obligation is expressed by must, having a strong and direct undertone. He reminds his audience again of the inevitability of this military intervention. In the context of this utterance and in the remaining speech, John Major promises his nation a fast and successful outcome; he not only has to present himself self-confident and determined of this whole operation but also has to make promises ensuring the security of British soldiers. The repetitive use of must
underlines the urgency and expresses his determination in the whole operation. After the numerous explanations and justifications on the necessity and inevitability of the war in Iraq, in the remaining speech John Major praises the soldiers courage and promises ‘Britain’s wholehearted support <,> and prayers of all of us for a save return home’ (24) to both the soldiers and their families in Britain.

This monologue has depicted a different use of the modals of obligation than the broadcast discussion analysed before. While the first text displayed a relatively high frequency of should in contexts where people deliberated on the necessity of undertaking military interventions in Iraq, the context of the present text is a justification of these military interventions after the decision in favour military operations has been made. The modal which is most frequently used in this text is must, which expresses the speaker’s opinion very directly and clearly. Have to occurs as well, mainly stating a neutral necessity from a more objective point of view. Moreover, there are two instances of should, which can both be interpreted as moral obligations.

Thus, the text serves well to illustrate the use of different modals for different persuasion strategies depending on whether the speaker would like to present the obligation as a direct and strong obligation displaying his own opinion (must), as a duty imposed by somebody else (should) or simply as a matter of fact (have to).

These two texts have discussed the use of obligation markers in a public dialogue and a scripted monologue. The latter genre of course is closely related to written language but it still provides a good source for exemplifying prototypical obligation uses in persuasion strategies. Must and should are very prominent in these two texts, there are only a few instances of have to and hardly any occurrences of need to. Moving on to public and private dialogues and investigating face-to-face interaction, however, it becomes clear that this genre displays a different use of modals of obligation. The analysis will start with a closer look at the semi-modal need to, which is the most frequent obligation marker used by a university lecturer talking to his students.
6.4 Discourse analysis 3: S1B-020: classroom lesson

(The total words: 2,208, must: 0, have to: 7, (have) got to: 2, need to: 14, ought to: 2)

The following text, S1B-020, is a public spoken dialogue, recorded in 1992. In this classroom lesson, a university lecturer in Biochemistry (speaker A), M. Titchener-Hooker, gives two male students, aged between 18-25 (speakers B and C) advice on their current projects. The modal of obligation which occurs most frequently is need to, but there are some instances of have to, have got to and ought to as well.

In this dialogue, the lecturer gives his students instructions in a very advisory and helpful manner. His language use will be exemplified by means of a few quotations from the text: In the first part of the dialogue (#00-#0054), the lecturer gives one student instructions on how to continue working on his project.

They are talking about the contents of the executive summary. The teacher asks:

25) What are you going to do after you've introduced the summary <,,> What else <unclear-word> do you think needs to come out of the work that you 've done on the on the design <,,> that it 's important to note <,,> (S1B-020 #0010-11: 1:A)

In this example, need to expresses an objective necessity and the lecturer tries to point the student into the right direction. After a couple of comments and questions, (e.g. ‘I think there are some other things that (…) were also important to note <,,> (#0014), ‘by which you mean…’ (#0017)) he finally suggests what is still missing in the student’s summary:

26) But I suppose what I 'm trying to get at is just as with the economic analysis you said <,,> (…) uhm <,,> you ought to be saying <,,> identifying if there are a any particular problems associated with the equipment or any particular technical <,,> aspects associated with the equipment (S1B-020 #0023-27: 1:A)

The use of ought to implies that this way of writing the summary corresponds with some general rules. Ought to, being rather formal and direct, would normally be a rather impolite way of addressing an obligation, might, for example, would make the statement a lot more polite. However, by means of the parentheses such
as ‘But I suppose what I’m trying to get at’, the statement is formulated in a very polite way. This example illustrates nicely that the pragmatic context of an utterance can actually ‘kill’ its original semantics.

In the following sentences the lecturer further explains the problems or technical details that need to be mentioned in the summary:

27) So for example when you’ve been looking at the design of your process are there any uhm features of the equipment that you’ve had to pay particular attention to (...) What sort of things have you have you had to think about very hard in in the design process (S1B-020 #0027-29: 1:A)

It is striking that all instances of have to in this text occur in contexts where must would not be possible syntactically, i.e. in past tense inflections, questions etc. (cf. also #0057, #0080, #0134, #0135, #0160). In these contexts, have to reports a neutral necessity. This supports the fact that one reason for the high frequency of have to is its syntactic flexibility.

The remaining text continues in the same way as discussed above. In the part which is following quotation 28), the lecturer helps the student to find out what exactly is still missing in his summary and tries to discuss this question with the whole class. (‘Can anybody else...’ (...), ‘anybody going to get the ball rolling’, #0032); his helpful language use continues throughout the whole dialogue, as becomes clear by looking at #0034ff., for example:

28) <S1B-020 #0033: 1:B> The fermentor
#0034: 1:A> OK but what about the fermentor
#0035: 1:A> Is there anything particularly distinctive about that fermentor <,,>
#0036: 1:B> Well it’s it’s the one equipment that we designed and I mean to detailed design and uh
#0037: 1:A> OK but why did you design the fermentor <,,>
#0038: 1:B> It’s the core of the process isn’t it <unclear-syllables> <,,>
#0039: 1:C> Yeah <laugh>
#0040: 1:A> OK #0041: 1:A> Well that that
#0042: 1:C> That needs to be specified more than any other piece of equipment
#0043: 1:A> Right #0044: 1:A> OK
#0045: 1:A> Yeah #0046: 1:A> As you say it’s right at the heart of the process isn’t it <,,> #0047: 1:A> OK <,,> #0048: 1:A> Isn’t it true to say that if you get the get the design of the fermentor wrong <,,> the costing wrong then the rest of the process is is a little bit academic isn’t it
#0049: 1:C>Mm
#0051: 1:A> Yeah <,,>
#0052: 1:A> OK
So you would actually say I would have thought within your executive summary something to the effect that your the detailed design work you've done has been focused on one the key element of the design uh sorry the key element of the process which is the mentor.

The lecturer resumes the students’ thoughts (e.g. ‘ok but’, ‘right’, ‘as you say’, ‘isn’t it true to say’ etc.) and tries to point them into the right direction. His whole language use can be characterised as cooperative and tentative. This also becomes clear in the circumscriptions and hedging strategies he is using, e.g. by means of ‘I would have thought’, ‘something to the effect that’, he formulates his expectation of the content of the summary in a very careful way. In this quotation, need to is used by one of his students and expresses a necessity. However, there are a number of instances of need to which have got the same or a very similar function as in 29) in the second part of the dialogue (#0055ff.), where the teacher gives similar advice to another next student, e.g. the following example, where need to occurs twice:

29) You know you’ve made a distinction between flameproof areas and non-flameproof areas and you need to justify that as well

You need to explain why you’ve done that < ICE GB:S1B-020 #0129-30: 1:A>

In this example need to not only expresses a bare necessity but also a weak obligation having the pragmatic function of a recommendation which fits into his general language use. (For further instances of need to cf. also text units #0079, #0097, #0116, #0129, #0137, #0179, #0188, #0199, #0204.)

Need to is used both in syntactic contexts where it could easily be substituted by must, as well as in constructions where another auxiliary functions as operator, e.g. in future tense (‘they’ll need to be able to stay awake’, #0179) or with hypothetical meaning (but you ‘d need to think carefully’, #0204).

As an alternative means of expressing this obligation, the speaker also uses ‘you could’ repeatedly, e.g. in #0089ff. The hypothetical possibility conveyed by could in the following examples functions pragmatically as a request (#0089,#0099) or recommendation (#0095).

30) <S1B-020 #0089: 1:A> Could you be a bit more specific than that

#0090: 1:A>Could you home in on
Additionally, there are two situations in which the lecturer expresses a necessity very directly using have got to:

31) Uhm <,,> but you you ’ve got to sh try and show that the the bits where you ’re plus or minus three hundred per cent are not critical to the overall success of the project <,,> <ICE GB:S1B-020 #0111: 1:A>

In this example have got to expresses the obligation in a more direct way than need to and ought to illustrated above. In the other instance of ’ve got to, the lecturer imposes the obligation very directly as well, but by choosing himself as the subject, which therefore implies ‘if I were in your situation I would...’, the speaker takes some force out of this statement and makes it sound more polite:

32) I mean if I ’m going to look for where I ’m going to site this plant are there is there anything that I’ve got to have available <,,>S1B-020 #0133: 1:A>

The conclusion of what finally needs to be in the executive summary of student C is again formulated with ought to, having the tone of a recommendation which simultaneously complies with some general rules. The hedge ‘I think’ helps formulating the statement in a more distanced and careful way, too.

33) So I think within the executive summary you ought to be making a statement about the way in which you approach the design (#0127: 1:A>

To summarise, the relatively high frequency of need to is remarkable in this text (it is – with only one exception – only used by the lecturer). One reason for this is the speaker’s polite language use. As stated by means of a number of examples above, he formulates his instructions and recommendations in a very helpful and advising way.

A further reason is of course that this text is a discussion about issues which are necessary in the summary. Therefore, there are a number of further
words expressing a need apart from the modal auxiliaries, e.g. ‘what you need is..’ (#0031), require (#0096, #0150, #0201), important (e.g. #0012, #0056, #0074, #0097, #0101, #0102). This is another important reason for the frequent use of need to in this text. As quotation 34) illustrates, the use of need to can apparently be influenced by the context surrounding it.

34)

< S1B-020 #0137: 1:C> You need water <,,> uhm in cooling <,>
#0138: 1:C> You need water <unclear-word> <unclear-word>
#0139: 1:C> Electricity <,,> <unclear-syllables> <,>
#0140: 1:A> Right
0141: 1:A> What’s the other thing you need to have in order to operate this process <,,>

The student uses main verb need in her list of what conditions are needed and the teacher continues her suggestions by using auxiliary need to in a verbal construction. In this example, need to expresses a bare necessity.

Thus, there are two reasons for the relatively high frequency of need to: One being its expression of a bare necessity in contexts where the teacher talks about the necessary content of their summary. The second reason, however, is its polite expression of obligations which can be imposed less face-threatening than with must, for example. In this hierarchy between teacher and students, the teacher can be characterised as very cooperative through his careful language use as was illustrated above.

6.5 Discourse analysis 4: (Have) got to in private dialogues

The texts above represented spoken texts with dense occurrences of should, must and need to respectively. It is hard to find comparable texts with prototypical use of (have) got to. Its highest frequency is in the genre private conversation; this section will, instead of focussing on a complete text, illustrate a few instances of (have) got to in context by means of selected extracts. These examples will demonstrate that there is hardly any inter-speaker variation in the use of modals of obligation. Note that speakers using (have) got to generally hardly ever use must.

The first section is an extract from a private conversation, which is a singing lesson recorded in a private London home in 1990. Speaker A is a 55-year-old
female singing teacher and speaker B his 31-year-old student. The whole text contains 3 instances of (have) got to, 2 of have to but no occurrences of need to, must (only mustn’t), deontic should or ought to. This text is a private, more colloquial conversation. This is also mirrored in speaker B’s language and his use of have got to in particular.

Four instances of have got to occur in the following extract, where the student realises that while singing he needs to raise his voice above the normal speech level. He is reminded of his flamenco lessons and gets very emotional while talking about his experiences:

35)

S1A-044 #316: 1:A> Of course you can if you can place it
#317: 1:A> It’s just a bigger effort that’s all <,> keeping the ball in the air
#318: 1:B> When you were saying about the analogy it’s the rising sun
#319: 1:B> I’m doing a flamenco course and there’s a marvellous movement <,>
when you do this
#320: 1:B> You go You have to hold
#321: 1:B> She keeps You’ve got to keep the tray on the hand <,>
#322: 1:B> And then it’s like one two three one two three one two three
#323: 1:B> You’ve got to keep it up high when you are doing the footwork <,>
#324: 1:B> And it’s like <,> the same thing with the voice you got to while you’re <,>
moving
#325: 1:B> you’ve got to keep it there and the audience has got to see it up there
#326: 1:B> It mustn’t dangle <,>
#327: 1:B> It’s wonderful flamenco
#328: 1:B> And the thing that’s so wond wonderful
#329: 1:A> Oh gosh

The speaker starts with ‘you have to hold’ and then shifts over to using ‘ve/has got to in the remaining dialogue. There is no difference in meaning between the two modals of obligation. In text unit 321, the student starts using have got to as part of reported speech of what the flamenco teacher keeps saying. However, he continues using have got to through the remaining dialogue. In these instances, have got to expresses a necessity/weak obligation. This becomes clear by looking at the subject type: have got to is used with 2nd person generic subjects, implying ‘in order to dance proper flamenco/sing properly, one has to…’. The necessary conditions for dancing flamenco (#0323) are being compared with the necessary conditions for singing (#0325) with similar sentence structures and repetitions. Once the speaker starts using have got to, he apparently persists in using this modal, even with another subject type, the direct subject ‘the audience’ in #0325. In
In this section, the speaker gets quite emotional and displays a rather colloquial language use. This becomes clear not only in the use of *have got to*, which, as discussed in previous chapters, is preferably used in colloquial than in formal contexts, but also in the use of discourse markers such as ‘she keeps’ (#0321) and ‘it’s like’ (#0322, #0324). The ‘one two three…’ exclamation mirrors his colloquial language use as well.

In this conversation, *have got to* is used for the expression of objective necessities. Searching the informal conversation component, it is hard to find many instances where the modals under investigation express a ‘true’ obligation, as obligations are not typically imposed in face-to-face or in telephone conversations but rather in more hierarchical contexts. The following telephone conversation exemplifies the use of *have got to* and *have to* for the expression of obligation. These obligations, however, are only reported but not imposed directly. As in the text discussed above, there are no instances of any other modal of obligation apart from 6 instances of *have got to* (speaker A in #0027, #0028, #0040, #0184, #0221, #0233) and 2 of *have to* (speaker B in text units #0043, #0089).

In this sequence, two female students (A: Laura Tollfree, 18-25; B: Eleanor Tollfree, 20) are talking about Laura’s plans and tasks for the next few weeks:

```
< S1A-093 #027: 1:B>Probably but I ’ve got to do like
#028: 1:B> Uhm I might go back to Cambridge early or something because I ’ve
got to write an extended essay <,>
#029: 1:A> What <ICE GB:S1A-093 #030: 1:A>is that for the competition
#031: 1:B> Well yeah but it ’s just to keep my hand in essay-writing
#032: 1:B> We ’ve all been told to do it
#033: 1:B>And Joe refuses to do it <,>
#034: 1:B> And as I say I don’t know about the other two but I ’m going to do one
#035: 1:A> Mm
#036: 1:A> Oh shame
#037: 1:A> Yeah
#038: 1:A> Yeah
#039: 1:B> And I ’ve got like loads of texts to read
#040: 1:B> So I ’ve been told I ’ve got to do a a month o o a month of reading <,,>
<unclear-words>
#041: 1:B> so I ’ll do that in September <,>
#042: 1:A> Oh that ’s horrible
#043: 1:A>Thank God I don’t have to do any at the moment
```
In this text, speaker A uses ‘ve got to’ while reporting on the essays, which she has to write for her university. By saying ‘we’ve all been told to do it’/‘I’ve been told’ (#0032, #0040) she points out that writing this essay (#0028) as well as reading a large amount of texts (#0039) are obligatory. As in the text discussed above, the language of the speaker who uses have got to can be characterised as rather colloquial. This becomes evident in her use of interrupted sentences and discourse markers, e.g. ‘Probably but I’ve got to like’, ‘or something’ (#0027, #0028). Her language use is similar in the remaining text examples of have got to which won’t be discussed in detail here. Speaker A, in contrast, only uses have to; note that these two instances of have to occur in contexts where have got to would not be possible syntactically: ‘I don’t have to’ (cf. #0043 in the text above’, and ‘he’ll have to wait’ in text unit #0089). For this reason, it is difficult to make any general claims on the speaker’s obligation uses.

6.6 Discourse analysis 5: have to in private conversation

The flexible use of have to is one reason for its high frequency. It occurs in a number of different syntactic environments and is used for the expression of rather objective necessities as well as obligations as was illustrated in some quotations discussed before. The following two extracts illustrate two possible uses. The first text is part of a private, direct conversation between a teacher and two female students (speakers B and C). In this section, they are talking about their experiences in working with disabled people.

<ICE GB:S1A-002 #037: 1:B> But uh you you were saying that working so closely with other people that’s definitely true because it really means that you listen <,> with your body I suppose to to people that you’re working with <,> and that’s of as you were saying you become blasé about that
#038: 1:C>Uhm
#039: 1:B> often you you d you don’t do that because <,> in a way you don’t have to in other situations
#040: 1:C> Uhm
#041: 1:C> Uhm
#042: 1:C> There has to be a l a greater sensitivity <,> to that person because it’s very easy <,> uhm to hurt someone and somebody who has a disability because they haven’t got so much control
#043: 1:C> so you have to be very very sensitive to their particular <,> uh disability in order to s stop them from damaging themselves
In this discussion, all instances of *have to* state objective necessities. They are used for the expression of necessities formulated as general truth, occurring with either second person generic subjects or having existential-there as subject, implying ‘if working with disabled people, one has to be very sensitive’.

The next section displays *have to* being used for more direct necessities or obligations. It is part of a private conversation recorded in a private home in 1990. Apart from two deontic uses of *should* and one instance of *‘ve got to*, *have to* is the only modal of obligation being used in this whole conversation. Four out of six instances of *have to* occur in the following section where the family talks about forms that their daughter has to fill in:

38)

<S1A-007 #234> 1:B> And yet she *has to* put on her form you see that he she ’s living with him in that address
#235: 1:D> Doesn’t get sent the forms
#236: 1:A> Why
#237: 1:B> Because you *have to* fill in how many members there are in your your uhmm <,> thing
#238: 1:B> I it ’s a question on the form
#239: 1:B> Yes
#240: 1:A> Is it
#241: 1:A> I don’t remember that
#242: 1:B> Well she says she *has to* anyway because it ’s in the form she gets anyway <,>
#243: 1:A> Well she probably *has to* put the number of people occupying the whole property <,> presumably
#244: 1:B> Well I don’t suppose she knows how many people are living in the whole property

In this section, *have to* is either used for the expression of general necessities, explaining general rules how to fill out the forms they are talking about (237); in these instances, *have to* occurs with 2nd person generic subjects, comparable to the instances discussed above. In the same context, it is also used for more direct obligations in ‘she has to’, referring to the daughter’s task to fill out these forms. This obligation to fill out the forms, however, is not imposed directly by the participants of the dialogue but rather by an absent authority and is thus comparable to the instances of *have got to* discussed in quotation 36).

As the four examples representing the use of *have to* and *have got to* have shown, these two modal expressions are used with almost the same meaning. In most cases, the choice over one of these two verbs rather depends on the speech
context in which the modal is used: (Have) got to is more often typical of colloquial speech, as the quotations above illustrated. Moreover, (have) got to, in contrast to have to, is restricted to present tense affirmative uses. Both verbs can either report general necessities or refer to specific situations where they often express reported rather than direct obligations.

6.7 Distribution in two written text categories: persuasive and instructional writing

In order to conclude this analysis, the findings of present-day spoken British English will be complemented by a short overview of prototypical obligation uses in two written genres, focussing on the text categories instructional writing as well as persuasive writing. The instructional writing component consists of two parts, namely administrative/regulatory writing (21,142 words) as well as a hobbies/skills section (21,199 words); the persuasive writing category contains press editorials (20,791 words). The normalised frequencies of their obligation uses (again in any syntactic environment) are displayed in figure 6.3.

There are some differences in modal of obligation uses in the three text categories: must is by far the most frequent modal in administrative/regulatory writing, being followed by should and have to, while should is the most frequent modal in the hobbies/skills section, being followed by must and then have to. Thus, while must is used for imposing strong obligations or strict rules, should is used for recommendations or less severe/weaker obligations. Need to hardly occurs in these two genres and there are no instances of (have) got to in any of the three written genres under investigation. In the persuasive writing component, the use of should is dominant, being followed by must and then by have to, there are even less instances of need to than in the instructional writing part. This distribution reflects the same tendency as discussed above: should is frequently used in more careful persuasion strategies or for deliberations; the use of must, in contrast, can often be found in contexts where the situation is clear already and does not need to be discussed any longer.
The following section will illustrate these uses in written English only briefly by means of some extracts of the text categories mentioned:

Text W2D-006-1 is a leaflet, containing the regulations for the use of reading rooms in the humanities/social societies section of the British Library. Must occurs most frequently in this text (21 affirmative must, 13 negative must not), should occurs 11 times. The following quotation is an extract from this text:

39) <ICE GB:W2D-006 #037: 1>Readers must obey the instructions on the care of books supplied at each reader’s place, and should report to the issue desks or Reading Room Centre staff any defects or damage in the books issued to them. #038: 1> In particular: a) #039: 1> They must not write on or mark any books, etc, belonging to the British Library, or moisten their fingers to turn pages. #040: 1> b) They must not lay the paper upon which they are writing on any such book, etc., open or closed. #041: 1> Nothing must be put on an open book, and if it is necessary to hold the book open it must be placed on one of the lecterns provided, and the special weights available from the North Library counter placed against, but not on, the book. #042: 1> Readers must not lean on books, etc, or handle them roughly: #043: 1> they must not put them on the floor; #044: 1> they must not bend them back, lay them face downwards when open, or do anything else which might damage the binding; #045: 1> they must take care not to drop them; #046: 1> they must not fold any page, or straighten out creased or dog-eared pages as this may damage the book further #047: 1> c ) Large books must be treated with special care and read on the lecterns provided
This section illustrates clearly how *must* is used for stating either strong obligations (e.g. ‘readers *must* obey’, ‘large books *must* be treated…’) or prohibitions (‘they *must not* lay the paper…’) very clearly and directly. *Should*, as occurring in #0038, which expresses the demand to contact the library staff in case of noticing damaged books, is formulated as a very polite obligation or rather as a request. The remaining uses of *should* occur in similar environments and typically express requests to do something (e.g. ‘readers *should* try to make as little noise as possible when using microfilm readers or other machines’ in text unit #0064). *Should* obviously is more polite than *must*, while *must* is used in contexts which express strict rules and do not allow any discussion or exceptions to these rules. These instructions are exclusively formulated by means of *must* and *should*, there are no other modals of obligation in this text. However, in some instances the obligation is formulated more carefully as a necessity and circumscribed with ‘required to’, e.g. in the following two examples:

40) [ICE GB:W2D-006 #027: 1] On leaving the reading rooms, readers are *required to* submit for inspection any possessions (including handbags) which they are carrying.

41) [ICE GB:W2D-006 #033: 1] Readers are *required to* take the utmost care of all books, periodicals, maps and other material in the Library’s collections or temporarily in its care, in particular those in fragile condition, and *must not* damage them or do anything likely to damage them.

Moreover, prohibitions are sometimes formulated with *may not* rather than *must not*, sounding more polite. One example is

42) [ICE GB:W2D-006 #029: 1] NO BOOK OR OTHER LIBRARY MATERIAL MAY BE TAKEN FROM THE LIBRARY’S PREMISES

On the whole, it is very interesting to observe that *must* and *should* are the dominant means of expressing stronger or weaker obligations respectively. Instructions expressed by *have to* are in most cases general preconditions, as represented by quotation 43). Looking at all instances of *have to* and *need to* in more detail, it becomes furthermore clear that these two forms occur in constructions or forms where *must* and *should* would not be possible. 12 of all instances of *have to* in instructional writing occur in negations, 24 in constructions with another modal
auxiliary as operator and 7 in inflected forms. In the remaining 15 examples, it mainly expresses an objective necessity rather than direct obligation. The instances of *need to* are distributed in a similar way, of the 17 instances only 7 could syntactically be substituted by *must*. The meaning of *need to*, however, is always necessity and never obligation, as illustrated in 43).

43) To get a mandatory grant you *have to* be eligible as well as having been admitted to a designated course (ICE_GB_W2D_003_42)

44) To play this shot you *need to* get down to the ball, so bend your knees and take a short back-swing to come forwards with a low-to-high action. (ICE_GB_W2D_013_127)

Finally, the following extract from a Sunday Times press editorial, dating from 21. October 1990 (W2E-010-001), illustrates prototypical uses of *must* and *should*. In the text titled ‘A president adrift’, the journalist comments on President Bush’s policy. A sarcastic, criticizing tone is characteristic of the whole text.

45) <ICE GB:W2E-010 #038: 1> If Saddam’s military machine is not destroyed by war, it *must* be steadily emasculated by other means. #039: 1> This *should* involve maintaining military and economic sanctions against Iraq, even after it withdraws from Kuwait, until Saddam agrees to destroy his chemical and nuclear weapons programmes. #040: 1> Such a step would require intrusive verification. #041: 1> It is, of course, far-fetched to think that any of this can be achieved without war. #042: 1> But the momentum has gone out of America’s anti-Saddam crusade, and the Bush administration’s statements on the Gulf grow increasingly far-fetched. #043: 1> At home, Mr Bush is also determined to fudge reality, for the fundamental reason that he will not decide whether or not he is a Reaganite. #044: 1> If he is, he *must* stand up for low taxation, deregulation and cuts in government spending. #045: 1> If he is not - and most Republicans think he isn’t - he *must* give some substance to his so-far empty rhetoric about a “kinder and gentler” America.

In the text units preceding this extract, the author criticises the President’s ‘Gulf Policy’, which ‘seems to have descended into drift and dither’ (#0023). He believes that Bush’s strategy of ‘containment of Saddam, not confrontation’ (#0029) won’t work out and draws his necessary conclusions in the extract above. In the first text unit (#0038), *must* is used for the expression of the author’s belief that it is necessary to weaken the military machine in Iraq. By means of using *must*, the speaker makes his conclusion sound definite and inevitable. The further explana-
tions and suggestions how to deal with the regime in Iraq are formulated with *should* in the following sentence (‘This *should* involve’, #0039), having a recommending or even moral undertone. In the last part of the quotation above, the author sharply criticises Bush’s policy at home, where he in his eyes ‘fudges reality’ because he does not decide which policy to follow. The journalist expresses his demands for either decision – being a Reaganite or not – by means of conditional ‘if-clauses’ with *must* occurring in the main clause. Through the use of *must*, his demands sound very direct and strong, particularly in the last sentence, where he directly criticises the President’s ‘so-far empty rhetoric’ in a sarcastic tone.

### 6.8 Interim summary

The present analysis has shown that the use of individual modals of obligation to a large extent also depends on their environment and the text category in which they are used. There are some differences in modal auxiliary usage not only between written and spoken language, but also between individual genres. There are some genres, particularly in the written text categories discussed in the last section, which display a very clear-cut and direct obligation usage. Especially the domain of direct regulations and rules appears to be reserved for *must* which is used almost normatively. It would be interesting to compare this genre in particular with obligation uses in other varieties of English, e.g. American English, in order to see whether this way of expressing direct obligations is typical of British English or applies to strong obligations in general.

Obviously, in other genres the obligation usage is not as direct for pragmatic reasons. In some contexts, e.g. in spoken language in particular, speakers try to avoid face-threatening speech acts and express obligations in a more polite way. The same applies to genres such as persuasive writing and broadcast discussions where authors/writers try to convince their readership/audience by means of more careful rhetoric strategies. The modal use also depends on the person to whom the obligation is addressed; obligations in face-to-face conversation are normally expressed more carefully than obligations directed to an absent person. Obligations expressed by an absent institution can also be stated more directly. As illustrated by means of a few examples, obligations cannot only be stated by the modals which are discussed in the present study. To name but a few examples, *is*
to (cf. 6.2) can express rather strong obligations, and there are a number of ways
to circumscribe obligations by means of be important to/be required to (cf. 6.2
6.4) etc. or by means of modals of possibility, e.g. could (cf. 6.4). All these and
other means of expressing obligation, e.g. adverbials such as necessarily etc. cannot
be discussed exhaustively in the present analysis.

Of course this discourse analysis has depicted only selected situations
which cannot be regarded as representative of their whole range of possible uses
in the entire corpus. Still, it offers the possibility of studying some of their proto-
typical occurrences and of looking at some factors that often remain unnoticed in
quantitative analyses on the sentence level. These analyses have shown that there
are a number of uses which cannot be covered by larger-scale, quantitative analy-
eses and that some of them can only be analysed by means of the larger context
providing additional insights. Thus, while there are hardly any “knock out” struc-
tural constraints such as double modals, there are a number of contexts which ac-
tually influence the individual modal semantics. For example, it has been shown
that should frequently collocates with perhaps. By means of hedges such as per-
haps or ‘I believe’, the actual modal semantics is weakened in this context. How-
ever, these factors have not always been taken into account in the quantitative
analysis of previous chapters. As a further example of pragmatic forces of the
discourse context, section 6.4 discussed the use of ought to being introduced by a
paraphrase which actually made it sound far more polite than other, maybe more
prototypical uses of ought to. This shows that in actual language use, the abstract
sequence from strong to weak obligation must>ought to>should>might is not
necessarily activated in the specific discourse. Moreover, this chapter discussed
some negative contexts without any direct negations such as ‘I don’t think this
should’. It is important to keep these pragmatic factors, which are to large extent
typical of spoken language use in particular, in mind while evaluating the results
of previous chapters.

Furthermore, it was observed that speakers in general tend to persist in
using one modal several times. There are hardly any speakers using (have) got to,
for instance, who use must in different contexts. In the few examples, in which
speakers change their modal use within only one sentence, e.g. in the first quo-
tation illustrating a change from need to to ought to and have to, speakers appar-
etly choose each individual modal for rhetoric functions, making use of their
specific, prototypical implications. The influence of persistence might need further investigation in future research, since, as Szmrecsanyi (2005: 205) points out “persistence is a characteristic of spoken language in particular.” Comparing the variation of be going to and will, he shows that persistence plays an important role in the selection of these two variables. Speakers avoid switching from one future marker to the other and prefer be going to over will if go has recently been used in a related context (Szmrecsanyi 2005: 127). The important role of psycholinguistic priming becomes evident not only in speakers typically using the same modal of obligation repeatedly but also in contexts where main verb need precedes occurrences of modal auxiliary need to and clearly influences its use.

Additionally, quantitative analyses cannot take into consideration the overall tone and language use of the speaker (writer), e.g. the sarcastic tone of the author of the press editorial, the supportive language use of the lecturer or the direct language use of some persons in the discussion panel. Style and formality, however, can have important effects on auxiliary usage. For example, the multivariate analysis of the previous chapter has demonstrated that text category does not have any significant impact on the choice of individual modals apart from the colloquial-formal distinction – at least in the DCPSE where some genres are comparatively small. However, the present chapter showed that looking at the instances in more detail there are important differences depending on the individual text types.

The different quantitative and qualitative approaches complement each other. Obviously a discourse analysis of selected examples can never be representative, but it can point towards important factors that often remain unnoticed in more representative and large-scale quantitative analyses.

To conclude, the discourse analysis has shown that the ‘real’ semantics of individual modals clearly depends on the syntactic and pragmatic environment in which they are used; thus, modal semantics is usually implemented in context but not necessarily so every time. However, the fact that not all uses can be exactly measured by means of quantitative analyses does not provide any cause for concern, but rather shows that the whole system of modality in English is very flexible. And it is this flexibility which finally makes change and grammaticalisation possible.
7. Summary and conclusion
There has already been a considerable amount of research on modal auxiliaries observing current shifts in frequency. However, these studies either mainly rely on written language or on apparent-time data of spoken language and provide a number of largely quantitative insights into long-term and current developments. The present analysis is the first study to use real-time data of spoken English, the starting point of most innovations, to provide a comprehensive overview of ongoing developments. The combination of different approaches – analyses of frequency, semantics and syntax, a variation analysis and a discourse analysis – helped to identify different factors influencing this ongoing change.

The English modal auxiliaries are paradigm cases of language change and ongoing grammaticalisation. This study demonstrated that the grammaticalisation of English modal verbs does not proceed smoothly but interacts with a number of stylistic, regional and pragmatic factors.

In the first part of this study, various frequency analyses provided an overview of ongoing developments by means of real-time data of spoken English. It became clear that a lot of central modals are declining in frequency while semi-modals are on the increase. However, it was also shown that the overall picture is far more complicated than just semi-modals replacing the central modals. Note that the semi-modals though in general decreasing are used in a far lower frequency than the central modals. On the whole, central modals with a high frequency remain comparatively stable. It is those central modals which are used less often that are displaying the most interesting developments. Comparing shifts in spoken and written English provided important insights into the overall picture of changes: With spoken English regarded as the more advanced stage of development, it was shown that the change of some modals is parallel in both registers. The decrease of the central modals needn’t, may, must, shall, and ought (to) was interpreted as instances of comprehensive structural changes in the grammar of English since their loss is even more substantial in the spoken data. In a similar way, the increase of the semi-modals need to and want to is more evident in the spoken data. These verbs can therefore be regarded as innovations in the modal system. Nevertheless, some developments are restricted to either spoken or written English so that their frequency shifts were interpreted as genre-specific devel-
opments. The semi-modals *be going to* and *(have) got to*, for instance, are mainly used in spoken language and only *be going to* is increasing in frequency. Some genre-specific differences of *will* and *might* (increasing in spoken language), *could* (increasing in written but decreasing in spoken English) were observed, too. The ARCHER corpus related the recent developments to the overall picture of changes and illustrated three important issues: First, the developments have not started recently but have already been going on for a longer time period. Second, the modals of obligation are the only group of verbs where semi-modals might be replacing the central modals in the long run. Third, with few exceptions, British and American English display parallel developments. This confirms previous concepts of Americanisation (e.g. Leech et al. 2009), viewing American English as the more advanced variety with regard to shifts in the modal auxiliaries without American English directly influencing British English.

The first part of the analysis presented not only shifts in frequency but also analysed if there are any semantic changes in spoken English. Comparing the semantic distribution of each modal expression of volition/intention, possibility/permission and necessity/obligation as regards their progression on grammaticalisation paths it became clear that for many of them, the semantic distribution does not change significantly within the thirty-year period, assuming that their epistemic meaning presents a more advanced stage of development than the root meaning. A number of trends were obvious: First, the frequently used modal expressions hardly change their semantic distribution of root, epistemic and formulaic uses respectively. Those central modal which are declining most visibly in frequency, in contrast, show an increasing reduction of their semantic paradigm and thus a tendency towards monosemy. The only central modal which is declining but does not display semantic changes is *must*, which has got root, epistemic and formulaic uses. The central modals as a group show a further advanced development with regard to their modal semantics since epistemic and formulaic meanings are far more common among this group of verbs. The semi-modals don’t show any significant increase in epistemic uses; the only exception is *be going to* since a number of future uses were categorised as epistemic. Three important overall tendencies became obvious: First, the modals of possibility *may* and *might* display an increasing monosemy of epistemic uses, which (in the case of *may*) is even more visible in spoken language than in Leech’s (2003) analysis of *may* in
written language. These epistemic uses of *may* and *might* are mainly used in statements which pragmatically function as hedges because they help formulating utterances more carefully. Second, the original past tense uses of *might, would* and *could* have given way to hypothetical uses. Third, the semi-modals of obligation seem to replace decreasing *must* in its root but not in its epistemic uses. (Formulaic uses occur mainly with *must* even though there are a few formulaic uses of the remaining modals of obligation.) It is possible that all of these developments are related to democratisation tendencies not only in American (Myhill 1995) but also in British English (Leech 2003, Jankowski 2004, Görlach 1987, Trudgill 1999) because they mirror a tendency of expressing utterances more carefully. A more detailed analysis of the modals of obligation confirmed these tendencies.

The analysis of regional variation in the modals of obligation offered further insights into important issues: The comparison of frequencies in British and American conversation confirmed the trend shown in the ARCHER corpus and in previous research that American English represents a more advanced stage of development for most but not for all changes. This was seen as further support for the fact that both varieties are undergoing the same development at different speed. Second, the syntactic investigation emphasised the role of the syntactic context in the discussion of the ‘ecology’ of modals of obligation. It was shown that *have to* and *need to* are far more flexible syntactically since they can occur in a number of syntactic contexts which are not possible for the central modals. For instance, they are used in inflections other than 3rd person singular (e.g. past tense, participles) and in combination with other modal verbs. The syntactic distribution of modals of obligation is similar in both varieties with a few notable differences, though: In the CSAE, *must* is not used in negations and the number of negated *must* is rather small in ICE GB as well. Thus, while declining in frequency, the syntactic paradigm of *must* is being reduced, too, with American English leading the development. The distribution of *have to* is comparatively similar in both varieties; syntactic flexibility of *need to* plays a larger role in British than in American English. *(Have) got to* demonstrated the most surprising development. It is more frequently used in British English but displays a later stage of grammaticalisation in American English in its morphosyntactic development. In American English it mainly occurs as reduced form *gotta*. It remains open if – in the long
term perspective – American English is leading the way in the decrease of (have)
got to or if it remains to be a colloquial Briticism.

In sum, the frequency analyses and the semantic analyses of individual
quotations offered important insights into ongoing change in the English modal
auxiliaries and showed that changes depend on stylistic, semantic and regional
factors. The variation analysis investigated the ‘ecology’ of obligation more
closely by studying the semantic and stylistic profile of the modals of obligation.
Looking at interchangeable contexts only, the data confirmed the fact that have to
is the most frequent modal of obligation and that must is declining. It provided
evidence that need to is taking over some functions previously expressed by must.
(Have) got to is increasingly restricted to colloquial genres. The analysis of sub-
ject and verb types was used as a means to analyse the degree of obligation quan-
titatively and showed that have to is preferably used to express weaker obliga-
tions. It was also discussed that a thirty-year period is probably too small to ob-
serve differences in the functions of the modal system of obligation since the vari-
able time did hardly have any significant impact on variation. One aim of the
variation analysis was to find out if the changes in the obligation domain are
linked with changing attitudes in society. Even though there weren’t any statisti-
cally significant social factors, the results summarised above support the theory
that pragmatic issues of politeness influence the choice of modals because need to
is increasingly taking over functions of must and because have to, the most neutral
means of expressing necessity and obligation, is the most frequent modal of obli-
gation.

Since pragmatic issues and the role of the speaker can best be analysed by
looking at a larger context, the last chapter presented a discourse analysis. It inter-
preted the use of modals of strong and weak obligation not by means of individual
sentences but by means of complete texts or longer extracts of texts; the texts
were mainly spoken though some written data was added, too. The analyses not
only confirmed many results of the preceding chapters but also pointed towards
some facts that often remain unnoticed while looking at statistical data or occur-
rences out of context only. To name but a few examples, the role of the speaker –
e.g. as tutor, friend or public speaker – and the context – a classroom lesson, face-
to-face conversation, written rules – can have an important impact on the choice
of one modal over the other even though some of these factors had shown to be
statistically insignificant in the variation analysis. Furthermore, persistence phenomena play an important role since most speakers tend to stick to the use of one modal; if speakers change modal usage within a few sentences, they often do it on purpose by making use of the undertone of strong obligation expressed by must or giving a moral advice by means of should or ought to. By means of this choice speakers can put additional emphasis on statements. Thus, the real semantics of modal expressions of obligation depends on the context in which they are used. The discourse analysis also demonstrated that the modal semantics can be weakened by the larger discourse context. For example, paraphrases and hedges can change the modal semantics; by adding ‘perhaps’ or taking back the force of an utterance by means of a paraphrase, speakers can weaken the obligation pragmatically. Therefore, the order from strong to weak obligation of must > ought to > should, for example, is not necessarily activated in its discourse context. It is important to keep this in mind. Still, the fact that the modal semantics is usually implemented in context but not necessarily so illustrates that the system of English modality is a very flexible system which instantiates language change and grammaticalisation.

In order to recall and compile the most important results of chapters 3-6, the following table summarises the prototypical characteristics of the modals of obligation.

Table 7.1 is a synopsis of the corpus-based analyses of this study and illustrates the layering of modals of obligation in present-day English. It shows that Americanisation, democratisation and colloquialisation have an important impact on ongoing grammaticalisation and can either promote or inhibit this development. The table demonstrates that individual verbs mirror different stages of grammaticalisation: for example, the historically older central modals with their epistemic and formulaic uses show a further advanced semantic development; the semi-modals have to and (have) got to are only beginning to be used with meanings other than root meanings. Need to, the most recent modal expression among them, does not (yet?) have epistemic and formulaic uses according to the data analysed in this study.
<table>
<thead>
<tr>
<th></th>
<th>semantics</th>
<th>syntax</th>
<th>frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>must</strong></td>
<td>imposes direct obligations, epistemic necessity and occurs in formulaic expressions</td>
<td>modal syntax but reduced syntactic paradigm with regard to negations; in the American data only affirmative uses</td>
<td>drastically decreasing in the frequency of all registers and varieties of English</td>
</tr>
<tr>
<td><strong>ought (to)</strong></td>
<td>used as relatively formal expression of weaker obligation than <strong>must</strong>, often with moral implication/ or functioning as recommendation</td>
<td>oscillating between main verb and modal syntax</td>
<td>infrequent and decreasing in written and spoken English</td>
</tr>
<tr>
<td><strong>should</strong></td>
<td>mainly imposes weaker, often moral obligations; is also used for more tentatively expressed epistemic necessity and occurs in formulaic expressions</td>
<td>modal syntax</td>
<td>lower to middle frequency; minor decrease in written and spoken English</td>
</tr>
<tr>
<td><strong>have to</strong></td>
<td>expresses necessity and (weak) obligation; epistemic and formulaic uses occur only rarely</td>
<td>main verb syntax, syntactically flexible</td>
<td>most frequent modal of obligation across genres and varieties; the overall frequency remains stable; in the variation of the modals of obligation its proportion is increasing</td>
</tr>
<tr>
<td>(have) <strong>got to</strong></td>
<td>mainly colloquial uses, meaning similar to <strong>have to</strong>; epistemic and formulaic uses hardly occur</td>
<td>auxiliary syntax but in standard English mainly reduced to affirmative contexts; in AE mainly occurs as reduced form <strong>got to/gotta</strong>; possible development in non-standard American English: main verb syntax with do-support (cf. Mair 2012)</td>
<td>comparatively stable in spoken and written British and American English in the data analysed; preferably used in colloquial language, especially in British English; according to other studies decreasing in American English (Jankowski 2004, Tagliamonte/D’Arcy 2007)</td>
</tr>
<tr>
<td><strong>need to</strong></td>
<td>expresses necessity and obligation with inherent meaning of necessity so that obligations can be formulated more politely</td>
<td>main verb syntax, syntactically flexible</td>
<td>still infrequent but significantly increasing</td>
</tr>
<tr>
<td><strong>needn’t</strong></td>
<td>necessity</td>
<td>reduced to non-affirmative contexts</td>
<td>drastically decreasing across registers</td>
</tr>
</tbody>
</table>

Table 7.1: Layering in the modals of obligation: summary of findings

The table also shows that syntactic features have an impact on ongoing language change since the more flexible the form the greater the increase in frequency in
present-day English. Less flexible or already defective verbal expressions such as *must* and *needn’t* (the same is true for *shall*) are less likely to survive and are decreasing instead. This development is even more advanced in American English. The lack of syntactic flexibility may be one reason for the stability or even decline of the semi-modal *(have) got to*, which does not follow the same trend as semi-modal *have to* because syntactically, English modality is increasingly expressed by modal expressions with main verb syntax such as *have to* and *need to*. These verbs are far more flexible and can be used in a number of contexts not possible for central modals. Thus, the tendency is for former main verbs to take on the semantic characteristics of modal auxiliaries and to develop new modal meanings.

Stylistic and regional factors can promote or inhibit ongoing language change, too, because most changes spread from colloquial to written registers; in the case of *(have) got to*, the increase takes mainly place in colloquial British language. Regional and social marking dating back to 20th century prescriptive tendencies in the US were discussed as a possible explanation for the different development in the two varieties.

American English has got the most advanced stage in the overall development, but the analysis has shown that these shifts are part of long-term drifts rather than due to direct American English influence. Pragmatic factors advance language change as the development of *have to* and *need to* as less face-threatening means of expressing obligations illustrates.

In sum, those central modals which are declining most visibly in frequency have already been declining in frequency for decades and – according to some studies (e.g. Leech 2003) – are either going to persist in some formulaic and fossilised uses or will disappear completely. A lot of the modals which are declining most visibly display a reduced paradigm in the grammar of present-day English. Among all semi-modals, those modals which display emerging modal characteristics (Krug 2000) illustrate the highest overall frequency in the spoken data (*be going to, have to, have got to, want to*) and often even increase in frequency. Therefore, the analyses clearly support the theory of a development towards a new focal point in the auxiliary domain (Krug 2000); in this class of auxiliaries, main verb syntax is prevalent. As a consequence, future grammaticalisation studies will have to deal with the fact that semantic change in the auxiliaries can take place
with main verb characteristics in more detail: The development of *be going to* represents a perfect example of grammaticalisation with its increase in discourse frequency, semantic extension and morphosyntactic change. The development of *need to* and *want to* is parallel, but with main verb syntax. According to Mair (2012: 248) and Krug (2000: 240f.) even lexically less frequent *have* *got to* is following *gonna* and *wanna* in this direction in non-standard American English because *gotta* takes on *do*-support in questions and negations (Mair 2012: 248). These instances, however, occur only rarely in non-standard uses so that it is hard to draw some general conclusions about the future syntactic development of *(have) got to* here.

This study used different types of analysis and showed that different approaches and methods of analysis complement each other. While frequency studies based on real-time data can illustrate important trends, variation and discourse studies can analyse individual aspects more closely. The data of frequency analyses and multivariate analyses can be verified by statistical tests, but a discourse analysis can point towards developments and pragmatic factors that often remain unnoticed in large-scale quantitative analyses. Taken together, the different approaches provide a reliable picture on the state of ongoing language change.

Since the DCPSE is the only corpus available yet for conducting such a real-time analysis, the present study focussed on British English. Corpora of similar design containing data from different varieties or even more recent British data could provide a more comprehensive picture of the ongoing changes.

There are a number of areas which still need investigation by further research; some ideas were discussed in the interim summaries of chapters 5 and 6. To name but a few, future variation studies could include additional syntactic, regional and social factors. The discourse analysis raised awareness that the discourse context should not remain unnoticed if conducting quantitative analyses. It also showed that spoken corpora in particular provide a valuable source for studying ongoing change and genre-specific variation. Additional analyses of the remaining modals would provide more information about current and long-term developments. Moreover, the study has considered syntactic flexibility as one factor promoting ongoing changes among others. More detailed investigations of morphosyntactic and phonological developments by means of recent spoken data
could provide additional information on the future direction of the categorisation of English modals.

As the study showed, the English modal system is highly complex and flexible at the same time. The analyses illustrated that the more factors are considered in the variation of modal auxiliaries, the more reliable results can be obtained. For these reasons, alongside with the development of additional corpora, the study of the English modals will remain a promising field of research to study the dynamics of language.
### Appendix

#### Auxiliary Criteria

<table>
<thead>
<tr>
<th>(Op = operator)</th>
<th>Auxiliary</th>
<th>Main verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Op in negation</td>
<td>He cannot go.</td>
<td><em>He hopes not to go.</em> (cf. note)</td>
</tr>
<tr>
<td>(b) Negative contraction</td>
<td>can’t</td>
<td>*Hopen’t</td>
</tr>
<tr>
<td>(c) Op in inversion</td>
<td>Can we go?</td>
<td>*Hope we go?</td>
</tr>
<tr>
<td>(d) emphatic positive</td>
<td><em>Yes, I dò can come.</em></td>
<td>Yes, I dò hope to come.</td>
</tr>
<tr>
<td>(e) Op in reduced clause</td>
<td>I can come if you can.</td>
<td>*I hope to come if you hope.</td>
</tr>
<tr>
<td>(f) Position of adverb</td>
<td>We can always go early.</td>
<td>We always hope to go early.</td>
</tr>
<tr>
<td>(g) Postposition of quantifier</td>
<td>They can all come.</td>
<td>?They all hope to come.</td>
</tr>
<tr>
<td>(h) Independence of subject</td>
<td>Ann can do it.</td>
<td>He hopes to do it.</td>
</tr>
<tr>
<td></td>
<td>It can be done by Ann.</td>
<td>*It hopes to be done by him.</td>
</tr>
</tbody>
</table>

#### Modal auxiliary criteria

<table>
<thead>
<tr>
<th></th>
<th>Modal auxiliary</th>
<th>Main verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(j) Bare infinitive</td>
<td>I can go.</td>
<td>*I hope go.</td>
</tr>
<tr>
<td>(k) No non-finite forms</td>
<td>*to can/ *canning/ *canned</td>
<td></td>
</tr>
<tr>
<td>(l) No –s form</td>
<td>*She cans come.</td>
<td>She hopes to come.</td>
</tr>
</tbody>
</table>

| (m) abnormal time reference | You could leave this evening. | You hoped to leave this evening. [past time] |
| | [not past time] | |

Note: *He hopes not to go* is acceptable in the sense ‘He hopes that he will not go’; but this is then a case of the negation of *to go*, not of *hopes*.

Figure A1.1.: auxiliary criteria (adapted from Quirk et al. 1985: 137)
<table>
<thead>
<tr>
<th>Modals</th>
<th>spoken</th>
<th>written</th>
<th>log likelihood</th>
<th>Diff. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>can</td>
<td>3554</td>
<td>3074</td>
<td>17.6</td>
<td>-13.50</td>
</tr>
<tr>
<td>could</td>
<td>1590</td>
<td>1464</td>
<td>2.6</td>
<td>-8.0</td>
</tr>
<tr>
<td>dare</td>
<td>19</td>
<td>12</td>
<td>0.81</td>
<td>-37.3</td>
</tr>
<tr>
<td>may</td>
<td>651</td>
<td>1898</td>
<td>336.12</td>
<td>191.7</td>
</tr>
<tr>
<td>might</td>
<td>674</td>
<td>621</td>
<td>1.12</td>
<td>-8</td>
</tr>
<tr>
<td>must</td>
<td>503</td>
<td>859</td>
<td>48.75</td>
<td>70.7</td>
</tr>
<tr>
<td>need(n’t)</td>
<td>39</td>
<td>64</td>
<td>3.06</td>
<td>62.6</td>
</tr>
<tr>
<td>ought (to)</td>
<td>102</td>
<td>35</td>
<td>16.56</td>
<td>-65.3</td>
</tr>
<tr>
<td>shall</td>
<td>201</td>
<td>217</td>
<td>0.33</td>
<td>8.2</td>
</tr>
<tr>
<td>should</td>
<td>939</td>
<td>1221</td>
<td>18.86</td>
<td>29.9</td>
</tr>
<tr>
<td>will</td>
<td>3593</td>
<td>3754</td>
<td>1.8</td>
<td>4.5</td>
</tr>
<tr>
<td>would</td>
<td>3790</td>
<td>2826</td>
<td>71.11</td>
<td>-25.4</td>
</tr>
<tr>
<td><strong>Semi</strong>-modals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(’d) better</td>
<td>34</td>
<td>33</td>
<td>0.02</td>
<td>-4.2</td>
</tr>
<tr>
<td>able to</td>
<td>326</td>
<td>401</td>
<td>3.99</td>
<td>23.0</td>
</tr>
<tr>
<td>allowed to</td>
<td>56</td>
<td>50</td>
<td>0.23</td>
<td>-12.2</td>
</tr>
<tr>
<td>going to</td>
<td>1494</td>
<td>163</td>
<td>592.42</td>
<td>-89.1</td>
</tr>
<tr>
<td>have got to</td>
<td>336</td>
<td>40</td>
<td>127.81</td>
<td>-88.0</td>
</tr>
<tr>
<td>have to</td>
<td>1273</td>
<td>902</td>
<td>32.09</td>
<td>-29.2</td>
</tr>
<tr>
<td>need to</td>
<td>263</td>
<td>290</td>
<td>0.67</td>
<td>10.2</td>
</tr>
<tr>
<td>supposed to</td>
<td>129</td>
<td>40</td>
<td>23.96</td>
<td>-68.8</td>
</tr>
<tr>
<td>used to</td>
<td>201</td>
<td>43</td>
<td>54.42</td>
<td>-78.8</td>
</tr>
<tr>
<td>want to</td>
<td>1029</td>
<td>399</td>
<td>142.11</td>
<td>-61.2</td>
</tr>
</tbody>
</table>

Table A3.1 Normalised Frequencies of central and semi-modals in ICE GB spoken vs. written English. Significant log-likelihood scores are indicated in bold print.
<table>
<thead>
<tr>
<th></th>
<th>present</th>
<th></th>
<th>past</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Root LLC</td>
<td>Epistemic LLC</td>
<td>idiomatic LLC</td>
<td>Root LLC</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>ICE GB</td>
<td>ICE GB</td>
<td>ICE GB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>can</strong></td>
<td>LLC</td>
<td>97 (96)</td>
<td>3 (4)</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>94 (98)</td>
<td>6 (3)</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(1.02)</td>
<td></td>
<td>---</td>
</tr>
<tr>
<td><strong>could</strong></td>
<td>LLC</td>
<td>48</td>
<td>3</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>59</td>
<td>11 (4.86)</td>
<td>28 (4.87)</td>
</tr>
<tr>
<td></td>
<td>(1.13)</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>may</strong></td>
<td>LLC</td>
<td>6</td>
<td>79</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>1</td>
<td>85</td>
<td>5</td>
</tr>
<tr>
<td><strong>might</strong></td>
<td>LLC</td>
<td>12</td>
<td>78</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>15</td>
<td>85</td>
<td>0</td>
</tr>
<tr>
<td><strong>be able to</strong></td>
<td>LLC</td>
<td>100</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>100</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>be allowed to</strong></td>
<td>LLC</td>
<td>32</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>22</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Table A3.2: Semantic distribution of possibility in two random samples of 100 occurrences of each verb for each period. Numbers in brackets contain the results of a second subsample which was analysed to illustrate that a sample of 100 verbs shows a representative distribution of modal meanings.

<table>
<thead>
<tr>
<th>necessity</th>
<th>LLC</th>
<th>Root</th>
<th>epistemic</th>
<th>idiomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>must</strong></td>
<td>LLC</td>
<td>43</td>
<td>46</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>47</td>
<td>45</td>
<td>7</td>
</tr>
<tr>
<td><strong>need</strong></td>
<td>LLC</td>
<td>15</td>
<td>1</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>2</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td><strong>need to</strong></td>
<td>LLC</td>
<td>45</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>100</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>should</strong></td>
<td>LLC</td>
<td>74</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>75</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td><strong>ought (to)</strong></td>
<td>LLC</td>
<td>98</td>
<td>2</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>43</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td><strong>have to</strong></td>
<td>LLC</td>
<td>99</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>95</td>
<td>3</td>
<td>---</td>
</tr>
<tr>
<td><strong>(have) got to</strong></td>
<td>LLC</td>
<td>100</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>98</td>
<td>2</td>
<td>---</td>
</tr>
<tr>
<td><strong>’d better</strong></td>
<td>LLC</td>
<td>60</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>52</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>be supposed to</strong></td>
<td>LLC</td>
<td>36</td>
<td>18</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>ICE GB</td>
<td>54</td>
<td>16</td>
<td>---</td>
</tr>
</tbody>
</table>

Table A3.3: Semantic distribution of possibility in two random samples of 100 occurrences of each verb for each period.

---

To test whether the shifts in the different distribution LLC vs. ICE GB are significant, the log-likelihood scores were calculated for each meaning. Significant log-likelihood scores (cf. footnote 1) are indicated in bold print.

---

107 To test whether the shifts in the different distribution LLC vs. ICE GB are significant, the log-likelihood scores were calculated for each meaning. Significant log-likelihood scores (cf. footnote 1) are indicated in bold print.
<table>
<thead>
<tr>
<th>volition</th>
<th>present</th>
<th>past</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Root (volition/intention)</td>
<td>Epistemic (prediction)</td>
</tr>
<tr>
<td>will</td>
<td>LLC ICE GB</td>
<td>33/30</td>
</tr>
<tr>
<td>would</td>
<td>LLC ICE GB</td>
<td>12/16</td>
</tr>
<tr>
<td>be going</td>
<td>LLC ICE GB</td>
<td>57/49</td>
</tr>
<tr>
<td>to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>want to</td>
<td>LLC ICE GB</td>
<td>100/100</td>
</tr>
<tr>
<td>shall</td>
<td>LLC ICE GB</td>
<td>31/31 (34%)</td>
</tr>
</tbody>
</table>

Table A3.4: Semantic distribution of possibility in two random samples of 100 occurrences of each verb for each period. Numbers in brackets contain the results of a second subsample which was analysed to illustrate that a sample of 100 verbs shows a representative distribution of modal meanings.

<table>
<thead>
<tr>
<th>all occurrences</th>
<th>observed frequencies</th>
<th>log likelihood</th>
<th>affirmative only</th>
<th>observed frequencies</th>
<th>log likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSAE</td>
<td>ICE GB</td>
<td></td>
<td>CSAE</td>
<td>ICE GB</td>
</tr>
<tr>
<td>must</td>
<td>24</td>
<td>52</td>
<td>16,62</td>
<td>14</td>
<td>36</td>
</tr>
<tr>
<td>should</td>
<td>71</td>
<td>87</td>
<td>6,13</td>
<td>45</td>
<td>64</td>
</tr>
<tr>
<td>need</td>
<td>0</td>
<td>0</td>
<td>---</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>have to</td>
<td>203</td>
<td>140</td>
<td>2,72</td>
<td>93</td>
<td>63</td>
</tr>
<tr>
<td>have got to</td>
<td>89</td>
<td>87</td>
<td>1,25</td>
<td>41</td>
<td>62</td>
</tr>
<tr>
<td>need to</td>
<td>89</td>
<td>65</td>
<td>0,57</td>
<td>35</td>
<td>15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>249000</td>
<td>205627</td>
<td></td>
<td>249000</td>
<td>205627</td>
</tr>
</tbody>
</table>

Tables A4.2 and A4.3: Observed frequencies of modals of obligation in CSAE vs. ICE GB, significant log-likelihood scores are indicated in bold print. The first table depicts all occurrences, the second restricts the analysis to interchangeable contexts.
<table>
<thead>
<tr>
<th></th>
<th>observed frequencies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>private dialogue</td>
<td>public dialogue</td>
</tr>
<tr>
<td><em>must</em></td>
<td>34</td>
<td>50</td>
</tr>
<tr>
<td><em>should</em></td>
<td>86</td>
<td>158</td>
</tr>
<tr>
<td><em>have to</em></td>
<td>284</td>
<td>223</td>
</tr>
<tr>
<td><em>(have got) to</em></td>
<td>127</td>
<td>57</td>
</tr>
<tr>
<td><em>need to</em></td>
<td>85</td>
<td>69</td>
</tr>
<tr>
<td><strong>TOTAL words</strong></td>
<td><strong>205627</strong></td>
<td><strong>171062</strong></td>
</tr>
</tbody>
</table>

Table A6.1: Observed frequencies of modals of obligation in ICE GB private and public dialogue and log-likelihood scores. Statistically significant scores are indicated in bold print.

<table>
<thead>
<tr>
<th></th>
<th>observed frequencies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>corpus1</td>
<td>corpus2</td>
</tr>
<tr>
<td><em>must</em></td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td><em>should</em></td>
<td>26</td>
<td>55</td>
</tr>
<tr>
<td><em>have to</em></td>
<td>35</td>
<td>58</td>
</tr>
<tr>
<td><em>(have) got to</em></td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td><em>need to</em></td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td><strong>TOTAL words</strong></td>
<td><strong>42210</strong></td>
<td><strong>43920</strong></td>
</tr>
</tbody>
</table>

Table A6.2: Observed frequencies of modals of obligation in ICE GB classroom lessons and private dialogue. Statistically significant scores are indicated in bold print.

<table>
<thead>
<tr>
<th></th>
<th>observed frequencies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>instructional writing</td>
<td>persuasive writing</td>
</tr>
<tr>
<td></td>
<td>(administrative_regulatory/hobbies_skills)</td>
<td></td>
</tr>
<tr>
<td><em>must</em></td>
<td>114 (83/31)</td>
<td>29</td>
</tr>
<tr>
<td><em>should</em></td>
<td>130 (53/77)</td>
<td>46</td>
</tr>
<tr>
<td><em>have to</em></td>
<td>59 (39/20)</td>
<td>20</td>
</tr>
<tr>
<td><em>(have) got to</em></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><em>need to</em></td>
<td>18 (9/9)</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL words</strong></td>
<td><strong>42314</strong></td>
<td><strong>20791</strong></td>
</tr>
</tbody>
</table>

Table A6.3: Frequencies of modals of obligation in ICE GB instructional (administrative/regulatory) vs. persuasive writing. Statistically significant scores are indicated in bold print.
Corpora

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Hundt, Marianne. 1996. “Has BrE been catching up with AmE over the past thirty years?” In: Ljung, Magnus (ed.). Corpus-based Studies in English. ICAME 17. Amsterdam, Atlanta: Rodopi.


Lorenz, David. 2013b.”From reduction to emancipation: is gonna a word?” In: Hasselgård, Hilde, Jarle Ebeling and Signke Oksefjell Ebeling (eds.). Corpus Perspectives on Patterns of Lexis. Amsterdam, Benjamins: 133-152.


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http://ice-corpora.net/ice/index.htm (last accessed 8/2014)

http://www.linguistics.ucsb.edu/research/sbcorpus.html (last accessed 8/2012)

http://www.ucl.ac.uk/english-usage/projects/dcpse/ (last accessed 8/2014)
Zusammenfassung in deutscher Sprache

Die vorliegende Arbeit beschäftigt sich mit Sprachwandel im Bereich der englischen Modalverben und untersucht gerade stattfindende Veränderungen auf der Basis von Korpora der gesprochenen englischen Sprache. Anhand unterschiedlicher quantitativer und qualitativer methodischer Analysen zeigt die Arbeit auf, welche stilistischen, semantischen, syntaktischen und pragmatischen Faktoren langfristige Grammatikalisierungsprozesse beeinflussen können.


Im Englischen gibt es zwei syntaktische Kategorien von Modalverben. Die historisch ältere Klasse der 'central modals' besteht aus neun Verben (can, could, may, might, will, would, shall, needn’t und dare), die sich durch eine besondere Hilfsverbsyntax von Vollverben unterscheiden. In der Mitte des 18. Jahrhunderts begann sich eine weitere Gruppe von periphrastischen Konstruktionen mit Modalverbwandlung zu entwickeln, die im Folgenden als 'semi-modals' bezeichnet wird. Zu letztergenannter Kategorie gehören have to, (have) got to, need to, be able to, be allowed to, be going to, want to, be supposed to, ought to.

Eine Reihe von Studien hat festgestellt, dass sich die Anzahl einiger 'central-modals' (z.B. must, needn’t, shall) innerhalb eines Zeitraums von nur 30 Jahren (1960-1990) drastisch verringert hat, während hingegen einige 'semi-modals' (have to, need to) immer häufiger gebraucht werden. Dabei stellt sich die Frage, welche Gründe es für diese Verschiebungen gibt und welche langfristigen Ten-

Mehrere Frequenzanalysen ergeben, dass die meisten Veränderungen im gesprochenen Englisch durchaus weiter fortgeschritten sind als im geschriebenen Englisch und deswegen als struktureller Sprachwandel interpretiert werden können; die Arbeit zeigt dennoch auch auf, dass einzelne Verben sich in den beiden Genres divergent entwickeln, also als typische Merkmale gesprochener bzw. geschriebener Sprache zu verstehen sind. Während Kapitel 3 Frequenz- und semantische Analysen aller oben genannten Verben beinhaltet, konzentrieren sich die restlichen Kapitel auf einzelne Verben der Notwendigkeit/des Befehls, da sie sich bereits in der Forschung als besonders wichtige Studienobjekte erwiesen haben. Erstens sind die Frequenzverschiebungen zwischen 'central-' und 'semi-modals' in diesem Bereich besonders deutlich und zweitens wurden Veränderungen häufig mit gesellschaftlichen Veränderungen (Demokratisierung) in Verbindung gebracht.

Kapitel 4 vergleicht die Häufigkeiten und das syntaktische und semantische Profil dieser Verben in britischer und amerikanischer Konversation und bestätigt vorherige Studien darin, Amerikanisierung als eine weiter fortgeschrittene Entwicklung im amerikanischen Englisch anzusehen ist, was aber nicht unbedingt
auf direkten Einfluss durch Sprachkontakt zurückzuführen ist. Durch die Hinzu- 
ziehung amerikanischer Daten wird somit eine weiter fortgeschrittene Stufe der 
Modalverbentwicklung aufgezeigt. Die Studie zeigt aber auch auf, dass diese 
Tendenz nicht allgemeingültig ist sondern extralinguistische und stilistische Fak- 
toren die Entwicklung in einer Varietät zum Stillstand bringen können. Dies wird 
am Beispiel von Unterschieden von (have) got to besonders deutlich.

Die Variationsanalyse der Verben der Notwendigkeit/des Befehls ver- 
gleicht die Funktionen und den Kontext dieser Modalverben, um zu untersuchen, 
welche semantischen, pragmatischen, sozialen und stilistischen Faktoren ihren 
Gebrauch beeinflussen und inwiefern sie untereinander austauschbar sind. Hierbei 
zeigt sich, dass es innerhalb einer Periode von 30 Jahren zwar Frequenzverschie- 
bungen gibt, diese Periode aber zu kurz ist, um deutliche Veränderungen in den 
Funktionen einzelner Verben zu erkennen. Auch die untersuchten sozialen Fakto- en beeinflussen die Variation nicht. Dennoch lassen die Analyse von syntakti- 
schen Faktoren wie Subjekt- und Verbtypen Rückschlüsse auf pragmatische 
Funktionen der einzelnen Verben zu.

Das letzte empirische Kapitel beinhaltet eine Diskursanalyse, in der ein- 
zeln, „modals of obligation“ in ihrem Diskurskontext untersucht werden. Hierbei 
stehen pragmatische, soziale und stylistische Faktoren im Vordergrund. Die Ana-
lyse von gesamten Texten oder längeren Abschnitten unterschiedlicher Textkat-
egorien zeigt eine Reihe von Faktoren auf, die von quantitativen Methoden nicht 
untersucht werden können und ergänzt dadurch die vorherigen Studien. Insgesamt 
zieht die Diskursanalyse, wie flexibel das System dieser Modalverben ist, das 
genau durch seine Flexibilität Grammatikalisierung und Sprachwandel zulässt.