A transatlantic perspective of variation and change in English deontic modality

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This work presents the results of a corpus-based variationist analysis of the English modal verb must and the periphrastic constructions have to, have got to and got to, focusing on the variability and ongoing change in the use of deontic modality to express obligation or necessity in British and American English. The primary question of interest is whether the factors which are conditioning the variation in deontic modality are the same in both varieties of English, or if British and American English are undergoing different processes of change. The analysis shows that must specialized into identical grammatical contexts as it obsolesces in both varieties of English. However, comparison of constraint rankings for the three periphrastic variants shows that over time, they are being redistributed differently within the grammars of British and American English, and are continuing their process of grammaticalization.

1 Introduction

“...perhaps the most striking single accomplishment of contemporary linguistics is the apprehension of sound change in progress, in real time and apparent time.”

*(Chambers 2003: 164)*

“...not all variability and heterogeneity in language structure involves change; but all change involves variability and heterogeneity.” *(Weinreich, Labov and Herzog 1968: 188)*

The study of language change is necessarily the study of language variation. It requires the identification of a linguistic variable, which includes multiple forms, or variants, that are different ways of expressing a single grammatical function *(Labov 1966)*. Once a variable has been identified, the internal linguistic factors and external social factors which could potentially conditioning that variation are identified and quantitatively analyzed, using the variable rule analysis (VARBRUL) program *(Rand and...*
and the log-linear regression routine it incorporates (Cedergren and Sankoff 1974; Sankoff 1978; Sankoff 1985; Sankoff 1988a). This analytic method is the essence of a language variation study. By determining which factors condition the variation and in what way, and then applying them to a changing variable at different points in time using either apparent-time or real-time data, we are also determining the ways in which these factors condition the change in the variable (Tagliamonte 2002).

Far from being restricted to sound change, these quantitative techniques can be used to study syntactic, morphosyntactic and grammatical variation and change:

“The classic examples are constraint hierarchies for the expression of certain allophones (or the application of optional phonological or morphophonological rules), but it is also true of syntax, in the study of variable rule order, optional movement or deletion rules, and in preferences among semantically or functionally equivalent phrase structures. Moreover, it is these variable aspects of grammar which are always the locus of linguistic change. Change virtually always requires a transitional period, often very lengthy, of variability, competition among structures, and divergence within the community.” (Sankoff 1988b: 146 – 47)

Labov 1982 and Sankoff 1988b lay down methodological considerations for the study of change in a variationist framework. For further discussion, recent examples of variationist methodology and studies in syntactic, morphosyntactic and grammatical change, the reader is referred to Labov 1982, Tagliamonte 2002, Young and Bayley 1996, Henry 2002, Pintzuk 1999, Poplack and Tagliamonte 2001 and Tagliamonte 2004. Labov notes that, “Only when we have the good fortune to seize ... a syntactic change as it is occurring will we be able to give a good solution to the transition problem, and provide a sound basis for other arguments about the evaluation and actuation of change” (1972a: 323). It is to such a case that I now turn.

2 English Modals: Variation and change in the system

This study focuses on the variation and change in use of expressions of deontic modality¹ in English, specifically the modal auxiliary and equivalent periphrastic constructions which encode a meaning of strong obligation. The four main variants under consideration are must, have to, have got to and got to, all of which encode a meaning of obligation or necessity and are, for the most part, interchangeable in certain contexts:²

¹ The terms deontic and epistemic for categories of modality are used here as follows: “...deontics have to do with will, obligation and permission, while epistemics have to do with knowledge and belief about possibilities, probabilities, and so forth” (Traugott 1989: 32, based on Palmer 1986). The terms are therefore used in what some might consider a broad sense, to differentiate between epistemic and non-epistemic readings of the four variants. Alternatively, Coates prefers the term root modality for reference to general non-epistemic modality (1983: 18 – 22), while Palmer distinguishes two main categories of propositional and event modality, of which epistemic and deontic are subcategories, respectively (2001: 8 – 10, 35 – 37). Since this study deals only with a very small area of modality in English, the broader distinction will suffice. For overviews of the various categorical distinctions and terminology used in the literature on modality, see Westney (1995:40 – 44) and Krug (2000: 41 – 43).

² Examples from the play corpora are cited as follows: [play/page number, (column number), line number]. For the corresponding short code of the play title, see the complete alphabetized list of all plays in APPENDIX B.
1. a. I HAFTA get busy, too. I GOT TO get out all the silver and china. [CBLS/45, 31-32]
   b. You'VE GOT TO trust me; you MUST give me a latch-key. [tYG/57, 20-21]
   c. I HAVE TO continue. I MUST go on. [Kn/100, 3]
   d. You guys, we GOTTA clean, we’VE GOTTA scrub. [GTh/47, 22-23]
   e. Oh, I HAVE TO go get Susie. GOT TO have a girl here. [Wit/29, 5-6]
   f. I’VE GOT TO go to bed now. I HAVE TO get my rest. [PvH/89, 11-12]
   g. We’VE GOT TO pack. We'VE GOT TO get out of here. [FMiS/273, 19]
   We HAVE TO get out of here. [FMiS/273, 31]

Historically, the oldest of the four variants is must. It is attested in Old English (OE) as mot-, a preterit-present lexical verb meaning ‘be able/ permitted’. In Late OE and Early Middle English, it had developed the deontic modality meaning of obligation or necessity, eventually losing the original ‘permission’ meaning. Development of epistemic meaning came in Middle English (ME) (Traugott 1999:2 – 4).

Have to is the next oldest form, deriving from possessive have. Constructions of have to + infinitive are thought to have arisen in late ME and Early Modern English with the meaning of strong obligation (Krug 2000: 54, 74; Traugott 1999: 8). Brinton 1991 places have to + infinitive in ME, as in (2). Variation between must and have to is already present at this time (Tagliamonte 2004: 35, example from Brinton 1991: 34):

2. I moot go thider as I haue to go (Chaucer, CT Pard, c. 749)
   ‘I must go thither as I have to go.’

Have got to, derived from have got of possession, appears in English in the 19th century as a form competing with have to (Traugott 1999: 8). Krug finds it in common use as early as 1837 – 38 in Dickens’ Oliver Twist (as cited in Krug 2000: 61 – 2):

3. a. I’VE GOT TO be in London tonight... (VIII, 102)
   b. but now she’s dead, we’VE GOT TO bury her. (V, 80)

Finally, got to/gotta, appears in the 20th century as a derivation of and competing form with have got to:

4. a. “I don’t know,” said Dickie, “but we GOT TO do it som’ow.”
   (1909 Nesbit, Harding’s Luck v. 105) [as cited in Traugott 1999: 9])
   b. He... went forward as if to take her arm. “You GOTTA come along”, I heard (1924, J. Buchan, Three Hostages XVIII, 263 [as cited in Krug 2000: 72])

It has been widely argued and often demonstrated that the modal system of English has been changing since Old English (Lightfoot 1979: 81 – 114; Denison 1993: 292 – 339). According to Bolinger, “...the system of modal auxiliaries in English, [is] now undergoing a wholesale reorganization” (1980: 6), while Givon notes that “The English tense-aspect-modal system ... remains in considerable flux, with erstwhile verbs being added as new auxiliaries” (1993: 187). Krug points to “the success story” of
deontic *have got to* and *got to* in British English over the last 150 years as evidence that these forms are still undergoing some change (1997: 187).

Given such claims, we must wonder if these current changes in the system represent ongoing grammaticalization – the evolution of the various forms over time “whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions” (Hopper and Traugott 1993: xv). Quantitative, variationist study of the modal system of English will permit us to gain a better understanding of the nature of these continuing recent changes.

This study is designed to provide a quantitative, statistical analysis of deontic modality use and change in British and American English over the last century, using variationist methodology (Tagliamonte 2002; Labov 1972a, 1972b; 1982; Sankoff 1988b; Poplack and Tagliamonte 2001) in order to determine what factors condition the variation, and as such, the change. This also includes testing for the Constant Rate Effect, where it is predicted that the “contexts change together because they are merely surface manifestations of a single underlying change in grammar” (Kroch 1989b: 199).

Results of the present study will be compared to previous quantitative studies of the same variables (Krug 2000; Tagliamonte 2004), which claim that *have to* and *have got to* are continuing to grammaticalize. These studies look primarily at British English. The present study uses corpora of British and American English which were specifically designed to be comparable, and so can provide a unique insight into potential differences and similarities in the use of deontic modality across related major varieties of English.

The overall goal is to determine whether factors which constrain the change in British and American English are the same or different. In other words, are the two varieties of English doing the same thing with respect to their systems of deontic modality? If they are, we should expect to find the constraint hierarchies of factors conditioning the variation to be the same in both varieties when running similar analyses on two comparable data sets (Poplack and Tagliamonte 2001: 225 – 32). We could then conclude that the same process of change is happening the two varieties of English. If these constraints differ, this indicates that the two varieties are undergoing independent processes of change, and could be diverging. In the analysis that follows, we will see that British and American English are undergoing changes to their respective systems of deontic modality that appear quite similar, but which are subtly different in several ways.

### 3 Data and Method

The data for this study is taken from a set of parallel and comparable corpora, made up of twentieth century plays: 36 British English and 38 American English. The use of historical texts is common in studies of diachronic syntax or morphosyntactic variables (see for example, Biber, et al. 1993; Kytö 1993; Kroch 1989a; Pintzuk 1999; Pintzuk, Tsoulas and Warner 2000; Taylor 1994; van Kemenade and Vincent 1997). One goal of the present study is to see if the patterns of variation and change are consistent across major varieties of English, rather than limited to only one dialect.

To that end, the use of written rather than spoken data allowed for a nearly inexhaustible source of data, ensuring that an appropriately large number of tokens of the variables in question could be found across the chosen time depth, in this case 100 years.
This is a key consideration when studying a morphosyntactic variable such as this one, which proves, like most syntactic and morphosyntactic variables, to be rare in spontaneous spoken data (Labov 1972a: 190 – 91). Further, the play corpora are a source of real-time data, in which the data sample represents many different points in time. This allows for comparison to studies using apparent-time data, where the data sample is collected across a cross-section of generations at one point in time.

When the written data is used in a language variation study, certain types of texts, such as drama, are better approximations of spoken vernacular data than others. For example, the ARCHER corpus, which covers a time span of 1650 – 1990 for British English and 1750 – 1990 for American English, includes eleven different written genres. Of these, drama dialogue, fiction dialogue, sermons and courtroom testimony are considered ‘spoken categories’. Fiction and drama dialogue are considered “reflections of casual face-to-face conversation” - in other words, closest to vernacular speech (Biber, et al. 1993: 3 – 5). Görlach also classifies ‘dramatic dialogue’ under ‘spoken texts’ alongside quotations from direct speech, addresses and depositions (1993: 20). Different genres have also been shown to differ in the range of language variation that they display (Biber 1988: 170 – 98). While using several different genres might be considered more representative of a language as a whole, the limitation to a single genre is useful when corpora are being constructed for the sole purpose of comparison to one another, as this then controls for any possible effect of genre.

The two corpora were designed using exactly the same parameters and genre, and so are ideal for comparison to one another using multivariate analysis. Labov (1972b: 100) reminds us of the importance of reference, since written data can be “many times removed from the actual productions of native speakers”, and is highly susceptible to the interpretation of the researcher. A list of the plays included in the corpora by year can be found in Appendix B, along with some biographical information about the playwrights.

4 Circumscribing the variable context

“The systematic study of competing forms requires not only the identification of these forms but also of the individual contexts in which differences between them are neutralized. It is precisely this which constitutes the interpretive component of variationist methodology.”

(Sankoff 1988b: 154)

As stated earlier, this study looks at the changes in progress in the system of deontic modality in British and American English. The aim of this work is to contribute new data and further perspective to the variationist literature by presenting a picture of the variation and change in progress of the forms used to express deontic modality in two separate varieties of English over the last century. The four main variants under consideration for expressing deontic modality in English are the modal must, and the periphrastic constructions have to, have got to and got to.

3 See G. Bailey 2002 for a discussion of real vs. apparent-time studies in language variation.
4 Appendix B contains the list of plays and playwrights, while Appendix A includes some further discussion about the methodology of the corpora construction, including the criteria by which plays were selected. A complete bibliography of the primary texts used in the corpora is available from the author.
The first thing to note in circumscribing the variable context is that these forms can also encode both the deontic meaning of obligation described previously and an epistemic or ‘logical necessity’ meaning (Coates 1983: 52 – 58). For example:

(5) a. **Epistemic**
They MUST be finished painting by now. [DoaS/119, 7-8]

   b. **Deontic**
One MUST go in to fetch a diamond. [DoaS/134, 10]

These readings are fundamentally different in meaning, and do not occupy the same functions in the language. In the **epistemic** example (5a), the speaker is making a logical inference, as well as demonstrating a level of “... confidence ... as to the truth of the proposition expressed” (Coates 1983: 18). In the **deontic** example (5b), the speaker is asserting that there is an obligation or necessity on the part of the subject (one) to perform the action (go in), since otherwise the goal (fetch a diamond) cannot be accomplished.

When considering the distribution of epistemic vs. deontic tokens in the corpora (**Table 1** and **Table 2**), we see the epistemic reading overwhelmingly favours must. The development of epistemic meaning from deontic has been shown to be a later stage in the process of grammaticalization (Heine and Kuteva 2002: 116; Heine, Claudi and Hünnemeyer 1991: 175 – 78; Traugott 1989). Only must exhibits a substantial amount of epistemic use, indicating that it is further grammaticalized than the other forms.

**Table 1:** Distribution of forms in British English plays from 1902 - 2001 by type of modality. Total N = 884

<table>
<thead>
<tr>
<th></th>
<th>must</th>
<th>have to</th>
<th>have got to</th>
<th>got to</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>deontic</td>
<td>47</td>
<td>356</td>
<td>30</td>
<td>226</td>
<td>3</td>
</tr>
<tr>
<td>epistemic</td>
<td>95</td>
<td>122</td>
<td>5</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

**Table 2:** Distribution of forms in American plays from 1902 - 2001 by type of modality. Total N = 908

<table>
<thead>
<tr>
<th></th>
<th>must</th>
<th>have to</th>
<th>have got to</th>
<th>got to</th>
<th>Totals</th>
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<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>deontic</td>
<td>16</td>
<td>129</td>
<td>32</td>
<td>255</td>
<td>22</td>
</tr>
<tr>
<td>epistemic</td>
<td>91</td>
<td>110</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Coates describes epistemically have to as “an Americanism” (1983: 57). Since epistemic examples other than must are sparse in the data, Coates’ claim cannot be tested statistically with these variants. However, the only two examples of epistemic have to are American. The observation can be made that although the American data in **Table 2** contains a smaller percentage of epistemically grammaticalized tokens overall (12 percent vs. 15 percent in the British data), a larger percentage of the American epistemic tokens are non-must (11 percent vs. 5 percent in the British data). This does appear to support Coates’ claim, indicating that these forms are further grammaticalized in American English. Only tokens of deontic modality were considered for further analysis, giving an overall count of N =
756 for the British Corpus and N = 787 for the American Corpus. The overall distribution of each form is shown in the deontic rows of Table 1 and Table 2. There are several variations of the forms which were found in the data and have been included in the variable context. These include all affirmative, present tense forms of the four main variants, including contractions:

(6) **Full forms (Present Tense)**

a. *must*  
   I MUST go and shave. [tYG/39, 31]

b. *have/has to*  
   They HAVE TO give me maternity leave. [RE/180, 14]

c. *have/has got to*  
   I’VE GOT TO get some seeds. [DoaS/122, 11]

d. *got to*  
   I GOTTA run. [DoaS/95, 21]

(7) **Contracted forms**

a. hafia/hasta, ’ve to, ‘ave to
   ’ve got to, ’ve gotta, ’s got to, ’s gotta
gotta, got t’

Other tenses and sentence types were excluded from the variable context because they did not exhibit variation in the data for all four of the main variants above. Since *must* does not have a past tense or future tense form (*I will must*), only present tense tokens were included. *Must* is also not found following other modal verbs (*I may must*). Negated sentences and questions in the data, such as *mustn’t, Must I?*, don’t have to and *Do I have to?* were excluded.5 Perfective forms (*must have, have to have, have got to have*) and their contractions can only have the previously excluded epistemic reading (*You must have seen him yesterday*). Only *must have/must’ve/ musta* was found in the data, again indicating a strong preference for *must* as the epistemic form. Further exclusions are listed in (8):

(8) **Further exclusions**

*Non-finite construction* only exists for *have to* (*Westney 1995: 141 – 142*):

a. That was hard enough TO HAVE TO do. [MLB/128, 2, 20]

*Unfinished utterances:*

b. He’s right, Willy, you’VE GOTTA... [DoaS/40, 22]

*Repeated utterances* (counted as only one token):

c. I’VE GOT TO get some seeds. I’VE GOT TO get some seeds right away.  
   [DoaS/122, 11-13]

5 Negated forms in the American data were 36 percent *must* and 62 percent *have to* (97 percent). In the British data, negation was 65 percent *must* and 35 percent *have to* (100 percent). For interrogatives, the American data had 25 percent *must* and 67 percent *have to* (92 percent), while the British data had 45 percent *must* and 42 percent *have to* (87 percent). Due to the lack of *have got to* and *got to* in these constructions, neither negation nor interrogatives could be considered part of the variable context. In addition, the forms *don’t have to, don’t got to and haven’t got to* are not equivalent to *mustn’t: You don’t have to go to work and You mustn’t go to work* do not have the same meaning. A look at the differences between British and American use of negation and interrogatives, including *do*-support with *have to* and *got to*, is left for further study.
Formulaic expressions:

d. I MUST say I do enjoy these little chats. [DC/11, 16]

e. There's not much of it, I MUST admit. [tLiL/104, 20-21]

f. If you MUST know, he's been dismissed. [FFE/106, 25]

The formulaic tag phrase *I MUST say* was categorical in both the British and American data. However, *I MUST admit*, and *if you MUST know* (8e – f) were categorical only in the British data. They showed robust variation in the American data, as in (9a – c), and so were not excluded in that corpus [N = 11/773]. *If you MUST know* was not found in the American data.6

(9)  
a. Well, I MUST admit I'm very lonely. [MotN/17, 8]

b. Sometimes, you HAVE TO admit, he's a sweet personality. [DoaS/66, 10]

c. 'Cause you GOTTA admit, business is business. [DoaS/80, 23]

A final exclusion involved structurally ambiguous constructions, where there is possible ambiguity between the obligation/necessity reading and the older but still possible meaning of possession for the verbs *have* and *got*, as in (10a – f).

(10)  
a. It's simply a chance that one HAS TO take... [CsW/373, 1, 41-42]

b. This treatment is the strongest thing we HAVE TO offer you. [Wit/ 11, 8]

c. That’s all I HAVE TO say. [DoaS/ 58, 6]

d. Heaven only knows how they manage on what she HAS TO spend. [DGaH/143, 32 - 144, 1]

e. What you HAVE TO think about is your "code status". [Wit/ 67, 13]

f. ... what you GOT TO do is keep clear who your friends are. [AmB/9, 1, 11]

This ambiguity occurs in full (10a), reduced (10b – c) and headless (10d – e) object relative clauses and pseudo-clefts (10f), where the relative pronoun (*that, what, Ø*) refers to the object of the verb that has been raised out of the clause. Because the lexical verbs *have* and *got* still retain a meaning of possession in English, there are two possible readings for these examples:7

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6 More than one person has rightly commented that this difference between British and American use of formulaic tag phrases is a further indication of an important difference between the varieties. Tagliamonte states that “...as forms grammaticalize, some forms get left behind, entrenched in formulaic utterances or certain discourse rituals” (2004: 50). More formulaic expressions using *must* are found in British English than in American English.

7 The ambiguity of these sentences varies a great deal in informally collected native speaker judgments. Brinton argues that related structures such as *I have a paper to write* have more of an obligation meaning than possession, since the subject is obliged to “perform a result”, and objects like *paper to write or a chance* are “factitive, or not yet realized” (1991: 38 – 42). Fischer believes nouns such as *a suggestion* (like *a chance*) are “not something you possess” (1994: 156), although one can also argue that it is possible “To have as an abstract possession, such as time, an idea, an education, a debt” (Bybee & Pagliuca 1985: 72).

However, Brinton agrees that *There’s a paper I have to write* is “ambiguous between the two meanings” (1991: 41). It is not possible to disambiguate all of (10a – f) on semantic grounds, and there are no phonological cues, since the reduction to *hafta* was only indicated by orthography once in all the data. Examples (10b) and (10d) show that though both obligation and possession readings are possible, the
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(11) a. Obligation: the strongest thing, [Ø, we [have to] offer you t₁]
b. Possession: the strongest thing, [Ø, we have t₁ [to offer you]]

The development of deontic have to from possessive have is “a much-cited example of grammaticalization” (Krug 2000: 49; see also Krug 2000: 49 – 61; Brinton 1991; Bybee and Pagliuca 1985: 71 – 74). Brinton argues that ‘have to V (+ object)’ is “almost fully grammaticalized”, while ‘have obj + infinitive’ is only partially grammaticalized (Brinton 1991: 43). It is possible these constructions represent a stage in the grammaticalization of the ‘have to V (+ object)’ constructions, with the need to disambiguate between the two meanings being a factor encouraging grammaticalization.

One of Hopper’s five principles of grammaticalization is persistence: “When a form undergoes grammaticalization from a lexical to a grammatical function, so long as it is grammatically viable some traces of its original lexical meanings tend to adhere to it, and details of its lexical history may be reflected in constraints on its grammatical distribution” (Hopper 1991: 22). The variants that are supplanting must all derive from an earlier meaning of possession, a meaning which must never had. That this latent meaning of possession is still present in the periphrastic forms is yet another indication of their ongoing grammaticalization.

5 Synchronic, diachronic and variationist perspectives

Previous literature on deontic modality in English is primarily descriptive, either of the historical development or the modern semantics of English modality. General references in historical syntax, such as Lightfoot 1979, and specifically English historical syntax, such as Visser 1963 – 73, Traugott 1972, Jespersen 1961 and Denison 1993, include discussion of the development of the English modal system. Traugott 1989 concerns the development of epistemic meanings in English, including in modals. Warner 1993 is a study of the English auxiliaries and their history. Traugott 1999 tracks the historical development of the form must, while Brinton 1991 and Fischer 1994 provide historical accounts for the development of quasimodal have to with the meaning of obligation. Coates 1983, Palmer 1979, Palmer 1986/2001, Perkins 1983 and Westney 1995 provide accounts of the modern semantics of the English modals. Bybee, Perkins and Pagliuca 1994 is a survey of the development of modality and mood across many languages, presented in terms of universal paths of development and grammaticalization.

Quantitative studies of the English modal system are rarer, and include Myhill 1995, Krug 1997, Krug 2000 and Tagliamonte 2004. Myhill 1995 is a quantitative study of how the modals must, should, may and shall have been replaced in American English by have to, got to, better, ought, can and gonna. Using data from nine American plays from 1824 – 1947 and a 1984 collection of Doonesbury comics (a data set which Krug (2000: 76) points out is “not representative”), Myhill finds that a major change in the modal system of American English took place around the time of the American Civil

possession reading arguably prevails in some cases. This is likely because the fronted object the strongest thing in (10b) and the relative pronoun in (10d) refer to objects that are already realized or possessed.

All tokens of this type (American: N = 86; British: N = 30) were excluded, including tokens of must in the same constructions, as in “There's a contract I MUST push through tomorrow.” [RE/151, 13]
War. Discussion of *must*, *have to* and (*have*) *got to* data begins with the year 1896 because “there is practically no variation before this” (1995: 166). This provides further support for the data chosen for the present study. The British and American Play Corpora begin around this period, continue past the time of Myhill’s data, and include four times the number of drama texts for each of British and American English.

Using frequency data, Myhill attributes the variation in usage to motivating factors such as the expression of ‘emotion/urgency’ and ‘social decorum, norms, principles and morals’ (1995: 167 – 73). The lack of further statistical analysis makes any conclusions based on the frequency distributions, in his own words, “tentative statements” (206). While this would seem to make for few points of direct comparison, his conclusions will be seen to have interesting parallels to the present study, and may be relevant in providing some insight into interpreting the results obtained here.

Krug 2000 is a large-scale quantitative, corpus-based study of “emerging modals”, such as *want to/wanta/wanna*, *is going to/’s going to/gonna* and *have got to/’ve got to/gotta*, focusing on British English. He argues that these forms are “instances of ongoing grammaticalization”, and that the phonological variants “represent different stages in the evolution of new auxiliaries” (2000: 2). Using frequency data drawn from several large modern and historical English corpora, including the British National Corpus, ARCHER, LOB, FLOB, BROWN and FROWN (29 – 39), Krug argues that *have to* underwent a critical period of grammaticalization in the late 19th century, causing use of it to rise dramatically, and that *have got to* followed suit in the early 20th century (89). He identifies “increase in discourse frequency and concomitant tightened bondedness ... as fundamental parameters in the process of grammaticalization” of these variants (114). The data in the present study is designed to test these observations, with the intention of answering why the change took place by analyzing not only the frequency data, but the internal and external factors which contribute to the variation in the forms.

Tagliamonte 2004 is a quantitative, variationist analysis using the same methodology as the present study, but with spoken data in apparent-time from her York English corpus. As it is the model for the present study, results can be directly compared. Specific details of those results will be discussed below. The main conclusion is the same as Krug’s – that *have to* and *have got to* are undergoing continued grammaticalization.

6 Change across time

Following the variable context described above, all instances of the variable were extracted from both the British and American play corpora. The tokens were entered into GoldVarb 2.1, the variable rule analysis program (VARBRUL) for Macintosh (Rand and Sankoff 1991), and were coded for several factors which could potentially condition the variation between the different forms.

Each factor coded, or potential constraint, is a hypothesis to be tested about the data (Young & Bayley 1996: 257 – 58; Poplack & Tagliamonte 2001: 91). The hypotheses relevant to the variable under study will be detailed in the following section. The null hypothesis would be that a given factor has no effect, or does not in any way contribute to conditioning the variation in the dependent variable. By systematically testing each factor coded in various combinations during a stepwise regression,
estimating probabilities and likelihoods, and comparing the different models to one another for a significant improvement in fit, VARBRUL arrives at the best possible model fit for what factors condition an observed variation (Paulillo 2002: 85 – 89).

The external variable of time is represented by the age of the play and assigned to each play based on the date it was written. Figure 1 and Figure 2 chart the course of the four variants in real-time across the 100 years available in the two corpora.

Clear patterns of change in frequency can be seen, even at this relatively short time depth. These are consistent with the historical trajectory of the forms discussed above, particularly for must. Its use, as can be seen, has rapidly declined over the last century. Note that this decline happens earlier in America than in Britain. The next oldest form, have to, is the form used the most by the youngest generation of both British and American speakers. Although the frequency of have to is on a steady increase in both varieties, British English appears to be lagging behind American English in this trend.

Have got to is the next oldest form. In American English, this form increases in frequency for the first fifty years and then drops off sharply in the last fifty years, around the same time the frequency of the form begins to increase in British English. In British English, have got to remains in close competition with the older form have to. The most recently developed form, got to, is rarely found in the British data (3 percent: N = 19, see Table 1, above) and so cannot be analyzed in the multivariate analysis alongside the other forms in British English. It is far more frequent in the American data, in use even in the earliest times, taking over as the most common form for expressing deontic modality in 1951 – 1976, but dropping off in frequency during the most recent decades.

Figure 1 and Figure 2 show a trend that is opposite the one expected by the theory of “colonial lag”. This theory was much perpetuated in the 19th and 20th centuries (Görlach 1987: 41 – 43). It assumes that the colonial varieties of a language are more conservative than the mother variety, meaning that changes in American English should lag behind those in British English. Bailey 2001 describes the theory as being based on
the assumption that change occurs only “from the centre outward”, and so with the case of English, it assumes that “the evolution of London English is the norm and departures from it are abnormal” (R. Bailey 2001: 471 – 72). Görlach (1987: 55) argues that “the term and the phenomenon described by it are largely myths as far as the hard linguistic facts of language varieties of English are concerned” and that “‘Colonial lag’ diverts one from the fact that it has long been Britain that has been lagging behind in some respects – it all depends on your point of view” (56).

The trends shown for British English corroborate the results of two previous studies, Krug 2000 and Tagliamonte 2004. Figure 3 shows the distribution of the four forms in apparent time by speaker age in Tagliamonte’s York Corpus (British English). The patterns over time are similar to those seen in the later time periods of Figure 1, from the British Play corpus – have to and have got to remain at approximately the same level, must is dropping off sharply, and got to is extremely rare.

Figure 4 shows the frequency of use of have to and have got to in British English over several centuries from Krug 2000. Since Krug was looking at longer-term trends than the present study, his data are grouped into 50-year time periods. However, the final two time points on the chart, 1900 – 1950 and 1950 – 1990, are relevant for comparison to Figure 1, above. We see the increased use of have to over the last century, with the frequency of have got to and have to at their closest point in the first half of the twentieth century.

Figure 4 (from the drama component of the ARCHER corpus) indicates that the frequencies of have to and have got to in British English diverge considerably in the second half of the twentieth century, something not seen in the British play corpus from Figure 1 or Tagliamonte’s York Corpus in Figure 3. This could be a matter of Krug’s data being grouped into larger 50-year time periods, where an increase in raw frequency would appear in chart form as a steep upward slope. In contrast, Figure 1 and Figure 3 represent the percent of representation of the forms in the respective corpora (maximum 100 percent) for smaller periods of time (25 – 30 years).

It has been demonstrated, given the above trajectories, that the external factor of time plays
an important role in conditioning the variation in the four forms, with *must* favoured in earlier time periods and *have to* and *have got to* used more in the later time periods. These competing forms follow different trajectories in the two varieties of English, with British *have to* and *have got to* remaining close to the same frequency but American *have to* and *have got to* diverging in frequency.

Also interesting is the fact that it is the historically older form, *have to*, which has displaced the more recent innovation of *have got to* in American English. We would generally expect that, as languages evolve and change, innovations displace older forms, and this is not the case here. Krug takes “increase in discourse frequency” to be a “fundamental” parameter in the process of grammaticalization (2000: 114). Another of Hopper’s five principles of grammaticalization is layering: “Within a broad functional domain, new layers are continually emerging. As this happens, the old layers are not necessarily discarded, but may remain to coexist and interact with the newer layers” (1991: 22). *Have to* does not disappear, but remains to interact with the newer forms, and continues to increase in frequency. Again, there is evidence that *have to* is continuing in its process of grammaticalization.

The critical period of change in British English for the forms *must*, *have to*, and *have got to* appears to be during the time period 1951 – 1976. In American English, there is no one critical period of change for all forms, though an interesting pattern can be seen for the forms *must*, *have to* and *have got to* when the two earliest time periods of the American data (1902 – 1951) and the two latest time periods of the British data (1951 – 2001) are displayed side by side, as in **Figure 5.** Aside from the frequency of *have to*, which is slightly higher in British English, the graphs are very similar. This leads to the hypothesis that both varieties of English are undergoing the same change in their respective grammars, though at different times – approximately 50 years apart – and therefore at slightly different rates. American English appears to be supplying the model for this change, with British English approximately one generation behind.

In order to test this hypothesis we must ask what other contexts might be involved in this change and whether they change at the same rate over time, as predicted by the Constant Rate Effect (*Kroch 1989b, 1999*). If these contexts do not remain constant over time between the two varieties, this would indicate that the two varieties are not undergoing the same change. (*Poplack & Tagliamonte 2001: 94, 225 – 34*). Tagliamonte notes that her informants in York found nothing to differentiate between statements like *I have to go shopping* and *I’ve got to go shopping*, indicating that internal linguistic factors which operate below the conscious level are coming into play here (2004: 43). As such, I turn now to the internal linguistic factors that could potentially condition the variation and, as such, the change.
Coates (1983:33) describes deontic modality as “... a cline extending from strong to weak obligation”. This is illustrated in (12), with examples. The strong end of this cline is described as including features such as a main verb of activity and a speaker with authority over the subject (particularly 2nd person subjects). The weak end of the cline includes utterances with stative verbs, and a speaker with little authority over the subject (such as 3p. subjects). The terms “strong” and “weak” obligation will be used from this point to describe the polar ends of this cline. As such, the statement that a form “encodes weak obligation” means that it correlates with factors at the weak end of this cline, such as stative verbs or 3rd person subjects.

(12) Coates’ cline of obligation, with the features that distinguish each end:

<table>
<thead>
<tr>
<th>STRONGEST OBLIGATION</th>
<th>WEAKEST OBLIGATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2p. subj., activity verb:</td>
<td>3p. subject, stative verb:</td>
</tr>
<tr>
<td>a. Joe. You MUST do this. You MUST MUST MUST. [AiA/58, 18]</td>
<td>c. She HAS TO know twenty-four hours a day that you love her. [MotN/108, 9-10]</td>
</tr>
<tr>
<td>b. You HAVE TO talk to Jenny. [RE/199, 10]</td>
<td>d. It HAS TO sit just right, otherwise it droops a bit... [GH/60, 21-23]</td>
</tr>
<tr>
<td>Main verb of activity</td>
<td>e. She’S GOT TO have a private car - with a chauffeur. [SC/395, 2, 39-42]</td>
</tr>
<tr>
<td>2nd person subject</td>
<td></td>
</tr>
<tr>
<td>Speaker has more sense of authority over subject</td>
<td>Speaker has less sense of authority over subject</td>
</tr>
<tr>
<td>Statement feels more like an imperative</td>
<td>Statement feels like less of an imperative</td>
</tr>
</tbody>
</table>

Tagliamonte hypothesizes that the features associated with Coates’ cline (type of verb and type of subject reference) can be used as “grammatical diagnostics” which can help illustrate how deontic modality is embedded within the grammatical system of English, and that these features could be “governing the choice” between the forms used for the expression of deontic modality (2004: 43). For example, she found that *have to* is consistently more frequent with stative and durative verbs in her corpus, as opposed to punctual verbs. This indicates that the type of verb could be a conditioning factor in the variation of the competing forms *have to* and *have got to* in British English, and that “*have to* appears to encode weak obligation” (44 – 45). She found further that this correlation was significant, but only in the oldest age group of speakers (70+), and that the effect was changing over time (50 – 51).

**FIGURE 6** and **FIGURE 7** show the distribution of *have to* by type of verb (stative or nonstative) in the play corpora. Here we see that the tendency of *have to* to appear with
stative verbs in these data only begins to develop in the second half of the century, and again appears to be changing over time. Whether or not these are significant correlations will require multivariate analysis.

**FIGURE 6:**
Distribution of *have to* across age groups by TYPE OF VERB - British Plays

**FIGURE 7:**
Distribution of *have to* across age groups by TYPE OF VERB - American Plays

Tagliamonte (2004: 45 – 47) also notes that generic subjects are not included in Coates’ cline. As the examples in (13) demonstrate, generic subjects do not encode the same sense of imperative and authority (or lack of it) that distinguishes the second from third person non-generic subjects in (12a – e), above.

(13)  

a. We MUST suffer to be beautiful. [TW/14, 29-30] (*1st person generic*)

b. You HAVE TO open coconuts. [HotB/46, 18] (*2nd person generic*)

c. An officer’S GOT TO have the respect of his men. [HotB/97, 2-3] (*3rd person generic*)

Tagliamonte found that grammatical person was highly intertwined with whether a subject was generic or not (2004: 45 – 47). This is also the case in the play corpora. Over 50 percent of all subjects in these data are first person singular ‘I’, a form that can never be generic. Moreover, only 17 percent of subjects in the corpora were generic, and those were primarily 2nd and 3rd person. Therefore, only subjects with non-generic

---

8 This result is not the same as Tagliamonte’s, where *have to* was found to correlate significantly with stative and durative verbs in older speakers (70+), and then level out in the younger speakers (2004: 50 – 51). It should be noted that the verb categories were grouped differently in the two studies. Tagliamonte takes activity verbs to be analogous to punctual verbs, and she groups stative and durative verbs together for analysis (44 – 45). However, “states” can also be considered capable of having duration, with non-states being either durative or punctual (Brinton 1988: 25). Quirk et al. distinguishes stative from dynamic situation types, and breaks dynamic down into durative and punctual. Activities are considered a subset of these categories, dependent on whether or not they have duration (1985: 201 – 209). Given this, it was decided that, contra Tagliamonte, stative and durative verbs would not be grouped together here. Rather, durative and punctual verb have been grouped together, since Coates’ original distinction between stative and activity verbs is better represented by a distinction between stative vs. non-stative.

9 Generic ‘we’ is present, but rare, at only N = 10 in the British corpus and N = 9 in the American corpus.
reference in the play data were tested for a correlation to grammatical person. Figure 8 and Figure 9 show that *have to* demonstrates a preference for generic subject reference in both British and American English. Generic subjects were treated as a separate, fourth type of subject reference in the multivariate analysis, along with non-generic 1st, 2nd and 3rd person subjects.

**Figure 8:**
Distribution of *have to* across age groups by subject reference - British Plays

**Figure 9:**
Distribution of *have to* across age groups by subject reference - American Plays

I now turn to the results of the multivariate analysis, in order to determine to what degree these factors of time, type of verb and subject reference correlate to the choice of forms for expressing deontic modality in British and American English.

### 8.1 Multivariate analysis: *have to* and *have got to*

I begin discussion of the multivariate analysis results with the two most productive variants, *have to* and *have got to*. Factor weights reported as significant at the $p < .05$ level are in bold, while non-significant factor weights are in brackets. Factor weights greater than .50 indicate that a form is favoured for that factor, and factor weights less than .50 indicate that the form is disfavoured for that factor. A factor weight of .50 indicates that a factor neither favours nor disfavours the variant. Table 3 shows the results of the multivariate analysis for *have to* and *have got to* in British English, while Table 4 shows results for American English.\textsuperscript{10}

Type of verb was not found to be significant for *have to* or *have got to*. The factor of time demonstrates the strongest effect overall, as shown by the range, and the effect of time is stronger in the American data than in the British data. Looking at the highlighted rows for the factors of subject reference in Table 3, *have to* in British English appears to encode obligation at the weak end of the cline, favouring 3rd person subjects with a factor weight of .55 and strongly disfavouring 2nd person subjects (.24).

\textsuperscript{10} Results for *must* and *got to* will be reported later in separate tables, but they also contribute to the Total Ns in Table 3 – Table 6.
Generic subjects are highly favoured (.68). Have got to shows no significant preference for any internal factor. In Table 4, American English have to also encodes weak obligation. With a range of 17, this tendency is weaker than in British English, where the range was 44. Have to disfavours 2nd person subjects (.45), while strongly favouring 3rd person (.60) and generic subjects (.62). Have got to again shows no preference for any internal factor.

From this picture, it appears that British and American English have to and have got to are very similar. Have to encodes a particular type of obligation in both varieties, associating with generic subjects and the features at the weak end of the obligation cline, such as 3rd person subjects. But this is only part of the story. The internal linguistic factors as tested in Table 3 and Table 4 only identify significantly contributing factors over all time periods as a whole.

We also want to know if the constraint hierarchies of the internal factors are changing across time. This would be contrary to the Constant Rate Effect (Kroch 1989, 1999), which predicts that “use over time will be the same in all contexts” even as the rate of the change slows down or speeds up (Pintzuk, Tsoulas and Warner 2000: 11 – 12). But the Constant Rate Effect does not indicate what it means when the hierarchy of the constraints changes over time (i.e. when the factor weights shift in relation to one another). Rather, Poplack & Tagliamonte believe that changes in the constraint hierarchies over time would instead indicate a change in how that form relates to the grammatical system within which it is embedded, in other words, grammaticalization (2001: 225 – 34). In order to test for this, we must analyze the internal factors separately for each time period.

In Table 5 and Table 6, the original 4 25-year periods have been grouped into 2 time periods of 50 years. Here we see that these forms are indeed changing over time, but contrary to what Table 3 and Table 4 indicated, the two varieties of English are not changing in exactly the same way.
TABLE 5: Four independent multivariate analyses of factors contributing to the selection of have to and have got to in each of two time periods in British English plays from 1902 - 2001.

<table>
<thead>
<tr>
<th>Factor</th>
<th>%</th>
<th>N</th>
<th>Factor</th>
<th>%</th>
<th>N</th>
<th>Total N/Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAVE TO</td>
<td>155</td>
<td></td>
<td>HAVE GOT TO</td>
<td>226</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1902 - 1951</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>55</td>
<td>18</td>
<td>.63</td>
<td>42</td>
<td>35</td>
</tr>
<tr>
<td>Nongeneric Sp.</td>
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<td>41</td>
<td>18</td>
<td>.39</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>Nongeneric Ip.</td>
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<td>33</td>
<td>58</td>
<td>.47</td>
<td>53</td>
<td>59</td>
</tr>
<tr>
<td>Nongeneric 2p.</td>
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<td>3</td>
<td>2</td>
<td>.42</td>
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<td>14</td>
</tr>
<tr>
<td>Nongeneric Ip.</td>
<td>.55</td>
<td>10</td>
<td>21</td>
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<tr>
<td>Nongeneric Sp.</td>
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<td>2</td>
<td>.73</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>.49</td>
<td>12</td>
<td>9</td>
<td>.45</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
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<td>.50</td>
<td>10</td>
<td>31</td>
<td>.51</td>
<td>24</td>
<td>74</td>
</tr>
<tr>
<td>Range</td>
<td>60</td>
<td></td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1952 - 2001</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Subject Reference</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>.56</td>
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<tr>
<td>Nonstative</td>
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<td></td>
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</tr>
</tbody>
</table>

The highlighted rows in TABLE 5 show that British English have to started out highly disfavouring 3rd person (.35) and 2nd person subject (.23), meaning have to did not favour either end of the obligation cline for grammatical person, though generic subjects were highly favoured (.83). In the second half of the century, the hierarchy reverses so that 3rd person subjects are favoured by have to (.62), and the strong generic effect of the earlier time period has been reduced. We can see that the change in the use of have to toward encoding a weak function of obligation in British English has developed in the second half of the 20th century. British have to has been continuing to change its function in the grammar.

TABLE 5 also shows that British have got to, which showed no significant effect for internal factors in either variety overall, actually started out as the preferred form for weak obligation in British English, strongly favouring 3rd person subjects (.73) and disfavouring 2nd person subjects (.42). As have to has begun to take over the role of expressing weak obligation in the second half of the century, have got to has lost that tendency. The constraint hierarchy in the second half of the century for British have got to of .56 for 2nd person and .39 for 3rd person, though not significant here, indicates that this form moving toward favouring 2nd person subjects to become the preferred form in British English for expressing strong obligation. Tagliamonte, Smith and Lawrence (forthcoming) also report exactly this result for have got to across eight different communities of British English.

Tagliamonte (2004: 47 – 51) also found a correlation for have got to with generic subjects in York English. There, have got to is used most with generics by the older speakers (70+), and then levels out in the younger speakers, with have to used almost as frequently. This is exactly what is seen in TABLE 5 for have got to.

TABLE 6 shows that in American English, have to is also showing signs that its function is changing over time. In the early part of the century, it strongly favoured 3rd person subjects (.64) and disfavoured 2nd person subjects (.39), but this correlation to
weak obligation is no longer significant, or as strong, in the second half of the century. In fact, the constraint hierarchy of AmE have to in 1902 – 1951 looks remarkably similar to the hierarchy of BrE have to in 1952 – 2001, again indicating that American English is approximately 50 years ahead of British English in this process of change.

8.2 Multivariate analysis: must and got to

A full account of English deontic modality also requires discussion of the forms must and got to.\(^{11}\) TABLE 7 shows the results of the multivariate analysis of must in British English\(^ {12}\), while TABLE 8 shows must and got to in American English.

### TABLE 7:

<table>
<thead>
<tr>
<th>Factors:</th>
<th>Factor</th>
<th>Weight</th>
<th>Total N</th>
<th>N/Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (Age of Play)</td>
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<td></td>
</tr>
<tr>
<td>1902 - 1926</td>
<td>.63</td>
<td>.454</td>
<td>24</td>
<td>182</td>
</tr>
<tr>
<td>1927 - 1951</td>
<td>.74</td>
<td>.566</td>
<td>27</td>
<td>202</td>
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<td>1952 - 1976</td>
<td>.40</td>
<td>.48</td>
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<td>213</td>
</tr>
<tr>
<td>1977 - 2001</td>
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<td>Range</td>
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</tbody>
</table>

The factor of time is again the most significant here, for both must and got to. We can clearly see that deontic must is an obsolescing form in both varieties. According to the highlighted rows of TABLE 7, British English must appears to encode obligation at the strong end of the cline with regards to subject reference. 2nd person subjects are favoured (.68) and 3rd person subjects are disfavoured (.42). Generic subjects also highly disfavoured (.25). However, must is also favoured for stative verbs (.59), which is at the weak end of the obligation cline. Although the internal factors do not reach significance in American English (TABLE 8), there is remarkable consistency in the constraint hierarchies of subject reference and type of verb for must between American and British English. Got to in American English shows a preference for expressing strong

### TABLE 8:

<table>
<thead>
<tr>
<th>Factors:</th>
<th>Factor</th>
<th>Weight</th>
<th>Total N</th>
<th>N/Cell</th>
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NOTE: Inclusion of the three tokens of 3rd person nongeneric got to gave a highly disfavouring factor weight of .15. These were excluded from the final analysis so as not to skew the results for grammatical person in favour of significance.

\(^{11}\) Have to and have got to also contribute to the Total Ns in TABLE 7 – TABLE 10.

\(^{12}\) As noted earlier, multivariate analysis could not be run for got to in British English with N = 19 tokens. These tokens still contribute to the total Ns in British English.
obligation, favouring 2nd person and 1st person subjects. 3rd person subjects are so highly disfavoured for got to that there are only three tokens in the entire corpus.

Both must and got to show an overall tendency in the 20th century to encode strong obligation by favouring 2nd person and disfavouring 3rd person subjects. But remember that the frequency of must is on a sharp decline, as it is being supplanted by have to and have got to (and got to in American English). Must also demonstrates a preference for stative verbs, which are associated with weak obligation.

Historically, must is the oldest form and got to is the most recent form. But it appears here that even in its obsolescence, the constraints on must are very strong. Looking at the internal factors across time will help to track how must has progressed in the grammar as it obsolesces, and to see how got to is developing.

**TABLE 9:**

<table>
<thead>
<tr>
<th>Subject Reference</th>
<th>Total N:</th>
<th>Factor</th>
<th>% N</th>
<th>Weight</th>
<th>Total N/Cell</th>
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**TABLE 10:**

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<th>Weight</th>
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</tbody>
</table>

The highlighted rows in **TABLE 9** and **TABLE 10** and the range measurements show that as must obsolesces, the constraints on it are strengthening over time. It develops a strong preference toward use with stative verbs in both varieties, and the relative strength of the internal factors of the subject reference (in British English) and type of verb (in both varieties) increases over time, as indicated by the range. Jones and Tagliamonte (2004: 119) report that as a form becomes obsolete, the constraints acting on it stay the same. Connected to this is the observation that “... when the development of a form involves specialization, then a consequence will be that grammatical constraints on its distribution will strengthen as the change progresses” (Tagliamonte 2003: 551). This is what is seen here for must, and it is in contrast to the idea that constraints acting on an obsolescing form may in fact “exhibit upheaval in the natural ordering of constraints effects” (Wolfram & Schilling-Estes 1995: 711).
American English *got to* shows a development over time towards strong obligation, favouring 2nd person subjects (.55) and disfavouring 3rd person subjects (.23). With the rapidly rising frequency of *have to* in American English, it will be interesting to see what happens to the constraints on *got to* and the related *have got to* in the future.

Hopper’s third principle of grammaticalization is *specialization*: “Within a functional domain, at one stage a variety of forms with different semantic nuances may be possible; as grammaticalization takes place, this variety of formal choices narrows and the smaller number of forms selected assume more general grammatical meanings” (Hopper 1991: 22). The indications here are that deontic *must* has specialized to a very constrained set of grammatical uses, namely second person subjects and stative verbs. Examples of *must* from the play corpora indicate that the preference for stative verbs there could, in fact, be the result of a number of tokens using *have* and *be*:

(14) a. Passion... ah, yes, one MUST have passion. [ATTGB/55, 8]  
b. A maturing mind MUST have an ethical base... [UWAO/50, 23-25]  
c. I MUST have eyes in Justice. In Justice you will protect me. [AiA/68, 20-21]  
d. You MUST be very tough. [Wit/12, 1]  
e. The effort MUST be total for the results to be meaningful. [Wit/13-14, 22, 1]

Other examples show that deontic *must*, even in its obsolescence, retains the sense of strong obligation. Particularly in American English, *must* has the connotation of being very formal. Tagliamonte finds that the use of *must* in her data has specialized into discourse contexts which “...are often directive as well as performative, where the speaker has authority over the subject... for example, officer to private, parent to child...” (2004: 49 – 50). In many late 20th century examples from the play corpora (15), the speaker is someone with direct, unquestioned authority over the subject:

(15) a. Joe. You MUST do this. You MUST MUST MUST. [AiA/58, 18]  
   (boss to employee)  
b. You MUST prepare. [AiA/62, 18] (an angel to a dying man)  
c. You MUST begin with a text, Miss Bearing, not with a feeling. [Wit/13, 8]  
   (professor to student)  
d. We MUST go on living, Morte. [WWW/18, 18]  
   (mother to son regarding the death of his wife)  
e. Mr. Anderson, you MUST be prepared to explain everything to the court...  
   [Nep/324, 28-29] (barrister to witness)  
f. And I understand that I MUST stay awake all the time, because when I  
   sleep, when I shut my eyes, the monkeys come again. [FMIS/300, 25-27]  
   (man trying to retain control of his sanity)

8.3 Discussion of multivariate analysis results

The Constant Rate Effect does not hold for the functional domain of deontic modality, particularly for *have to* and *have got to*. Following Poplack and Tagliamonte (2001: 225 – 34), I take this to be an indicator of ongoing grammaticalization for *have to*
and *have got to*. The functions of these forms are changing with respect to the grammar, but not in the same way. The play data corroborates findings by Tagliamonte that *must, have to* and *have got to* are undergoing a change not just in frequency, but in how they encode deontic modality (2004: 52 – 3). Further, the play data shows that the forms are specializing into different functional roles within the grammars of British and American English. Using a detailed analysis of internal constraints across time, and comparing the shifting constraint hierarchies, the subtle nature of the divergence of these two varieties of English can be modeled.

British and American English are undergoing similar, yet subtly different processes of change in deontic modality. The oldest form, *must*, has become obsolete and specialized to epistemic modality, performative contexts, frozen expressions and use with stative verbs such as *be* and *have*. Meanwhile, *have to* has become the preferred form for expressions of obligation at the weak end of the cline in British English. This correlation is being weakened in American English as the form continues to rise in frequency. *Have got to* once occupied the role now occupied by *have to* in British English, and could be becoming the preferred form for expressing strong obligation there. Further, American English uses *got to* for strong obligation, which has supplanted *have got to* in this variety. American English is leading the overall change by approximately 50 years.

It can be argued that *have to* and *have got to* are at an intermediate stage of grammaticalization in the British system. This process is taking place approximately fifty years later than in American English, and it is not proceeding in the same way or at the same rate. **Figure 3** showed that the overall trajectories of the forms *must, have to* and *have got to* were similar when the first fifty years of American data is compared to the last fifty years of British data.

9 The decline of *must*

“...what are the forces that lead to the continued renewal of linguistic change? All indications point to factors outside of the tightly knit structure of internal relations, in the embedding of language in the larger matrix of social relations”  

*Labov 1982: 76*

We should also ask why *must* has declined so dramatically, causing the two varieties of English to redistribute their systems of deontic modality differently. Myhill (1995: 205) attributes the decreased use of *must* in American English to a combination of psychological, social and structural factors, including a shift away from the use of *must* to express “obligation motivated by social norms” and toward the use of *got to* to express “obligation motivated by emotion” (163, 167). While these factors seem difficult to quantifiably test for, he concludes that there has been a shift in the modal verbs, including *must*, away from “functions which emphasize evaluation and control based upon social hierarchy or principles” (195, emphasis mine). Tagliamonte hypothesizes that “...the obsolescence of *must* may actually be tied to the obsolescence of the appropriate social conditions for its use” which have “receded into a highly specialized set of circumstances that are stylistically marked” (Tagliamonte 2004: 49 – 50).

We saw in (15) that *must* is often used when a speaker holds authority over the subject, and is imposing an obligation onto the subject. Tagliamonte further notes that “...neither *have to* or *have got to* explicitly invokes the speaker’s authority over another,
something which *must* encoded explicitly” (2004: 49 – 50). Indeed, comparing the following examples to those in (15), we can see that the strong obligation invoked by *have got to* in British English and *got to* in American English do not demonstrate this same sense of authority:

(16) a. You'VE GOT TO say what a responsible job you've got - [Nep/314, 1-2]  
(friend to friend who is about to testify in court)  
b. You'VE GOT TO talk to him, Nick. He's had you followed. [SEP/303, 22-23] (friend advising a friend)  
c. I don't know what I'm gonna do... You GOTTA help me. [WWW/69, 11-12] (distraught husband to wife)  
d. You GOTTA open your eyes, my friend. You are mixed up with a very bad crowd. [FdM/46, 6-7] (friend advising a friend)

These examples are consistent with Myhill’s and Tagliamonte’s conclusions that there is a function for *must* which is becoming obsolete, resulting in decreased use of that variant, and that perhaps that function is the socially-dependent, authoritative contexts where *must* is so often found.

Returning to the earlier observation that the change away from *must* in British English is found beginning at the time period 1951 – 1976, it has often been noted that British English, once highly conservative and resistant to change, has undergone dramatic changes since the Second World War:

“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”

(Görlach 1987: 56)

“One could imagine a slackening of the rigor of grammatical correctness – as appears to have happened in widespread de-Fowlerization in Great Britain after WWII – and the communities on the fringe, for whatever reason, sticking to linguistic law and order, and thus lagging behind”

(Görlach 1987: 54 – 55)

These changes have been widely attributed to a changing social climate in England during the last half of the 20th century:

“In recent years, as class has tended to be de-emphasized in British society, pronunciation in the schools and universities and on radio and television has become more varied”

(Fisher 1996: 145)

“...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)

The American corpus examined by Myhill exhibits a change away from *must* around the time of the Civil War (1995: 161). This change continues into the 20th century data of the American Play corpus and predates the similar change identified in the British Play corpus, as shown in Figure 3 and Figure 4. Accepting that language is
a reflection of its society, this indicates that some type of societal changes occurred at this earlier time in America, possibly similar to the changes alluded to above by Fisher and Trudgill for Britain in the mid-twentieth century. These changes could then be reflected in the changes to the forms used to express deontic modality.

10 Synopsis and Conclusions

Several issues have been addressed here. The internal factors of subject reference and type of verb have been shown to condition the variation, and as such the change, over time of the forms must, have to, have got to and got to in two varieties of English. We saw that the constraints which condition the selection of must do not change across time, even though the form shows a dramatic decrease in frequency and probability of being used. This was interpreted as being because of the specialization (Hopper 1991: 22) of the form into frozen and archaic utterances, under a highly constrained set of circumstances which include second person subjects and the stative verbs be and have. This is consistent with the observations that as a form becomes obsolete, its constraints stay the same (Jones and Tagliamonte 2004: 119), and as a form specializes, its constraints strengthen (Tagliamonte 2003: 551).

In contrast, the constraints which condition the variation for have to and have got to are changing across time. This indicates that these forms are continuing their process of grammaticalization, as indicated by the principles of layering and persistence (Hopper 1991: 22), as well as increase in discourse frequency (Krug 2000:114).

A comparison of the results from British and American English showed that both varieties are undergoing a change to their systems of deontic modality which includes the loss of must as it recedes to the same functions within the respective grammars and obsolesces. However, they differ with respect to how the remaining forms are taking over the functions once performed by must. This indicates that the changes involving the newer forms are not from the direct influence of one variety of English over the other (for example, American English directly influencing British English), but that they occurred separately within each variety.

Finally, the apparent 50-year gap between the critical periods of decline in the use of must in American English and British English raises the possibility that the change in function for must is linked to changes in the British and American societies at different points in time, and that the reason why must is receding is a result of a change in the use of socially-dependent, authoritative contexts where must is most often found.

This study did not break down British and American English into smaller dialect areas, and as such, there remains the possibility of different constraint hierarchies and rankings between individual dialects within those major varieties. Reports of data from the south of England indicate that some areas, such as Devon, use the form got to much more frequently than the British play corpus represents (Tagliamonte, Smith and Lawrence: forthcoming; Krug 1997: 191; 2000: 111 - 114; Tagliamonte 2004: 52). It would be both interesting and fruitful to see what function have to and have got to currently have in these dialects. Further cross-dialectal studies are needed, both in the UK and in North America, as well as in other major varieties of English around the world, in order to continue to track the ongoing development of deontic modality.
A TRANSATLANTIC PERSPECTIVE OF VARIATION AND CHANGE IN ENGLISH DEONTIC MODALITY

References


A TRANS ATLANTIC PERSPECTIVE OF VARIATION
AND CHANGE IN ENGLISH DEONTIC MODALITY

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Tagliamonte, Sali, Jennifer Smith and Helen Lawrence. Forthcoming. “‘You’ve got to speak properly, you have to keep up with the Jones’s’: The Changing Modals in British Dialects”. Presented at Sociolinguistics Symposium 15. Newcastle, UK, April 2004.

Appendix A: The methodology of the play corpora

The nature of the play corpora made looking at some of the “major social correlates of linguistic variation” (Chambers 2003: 11, see also Chambers 2002), such as the external factors of social class and sex, problematic. Fictional characters within each play cannot reasonably be treated as “real” speakers, nor could they be used to code for external factors such as education, social class and sex of the speaker. It must be assumed that the voice of the author is coming through in the speech of the characters in the play.

At the same time, the playwright is somewhat removed from representing his or her own speech in the artificially constructed dialogue of the characters. Therefore, social factors that encode personal information about the author directly, such as sex, education and social class, may not be as reliable for these corpora as they would be in a spoken data corpus, or even in a text-based corpus using narratives or letters, where an author is speaking in their own voice. As such, primarily internal, grammatical factors are looked at in this study as possible conditions for the variation.

It was necessary to find a way to represent the factor of time, since change over time is a key research question in this study. In these corpora, time is represented by the age of the play, according to the
year the play was written. Some measures were undertaken to ensure that a play could be considered representative of the writing of a person living in the year in which the play was written, even if it could not be considered an exact representation of a playwright’s own speech.

A minimum of three plays per decade were used, with a mix of male and female authors. No author was used more than once. All plays were set in “the present” (the year of writing) to avoid representations of antiquated speech, and any character whose dialogue was obviously meant to represent non-native or impaired speech was also excluded. Many different dialect areas in British and American English are represented. Biographical information was obtained for all authors to ensure they were native speakers of either British or American English. Other dialects of English were excluded, such as Irish, Scots & Canadian authors, as well as other well-known highly stigmatized dialects, like AAVE.

Authors were between 20 – 43 at the time of writing the play. The corpora can therefore be considered to generally represent the writing of 20 – 43 year-olds in real-time. For example, an author born in 1912 who began writing plays in her 20s would ideally contribute a play written in the mid-1930s, and not later than the early 1950s. Some flexibility in the age range was acceptable, but this methodology avoids the situation of, for example, having two plays written in 1999 by authors born in 1932 and 1972, respectively. This allowed for as close an approximation as possible of speech that was representative of the year in which the play was written, as well as a truer real-time representation of any changes in progress. It also minimized potential age-grading by an author, and avoided the chance that authors whose speech has remained closer to that of their youth will be placed in and considered representative of a much later, and so inappropriate, year.

Appendix B: Plays used in the corpora

**AMERICAN PLAYS**

*The Great Divide* [tGD] (1906) William Vaughn Moody

*A Man’s World* [aMW] (1910) Rachel Crothers

*The Boss* [tB] (1911) Edward Sheldon

*Beyond the Horizon* [tBtH] (1920) Eugene O’Neill

*Daddy’s Gone A-Hunting* [DGaH] (1921) Zoë Akins

*Miss Lulu Bett* [MLB] (1921) Zona Gale

*Craig’s Wife* [CsW] (1925) George Kelly

*Ned McCobb’s Daughter* [NMD] (1926) Sidney Howard

*Saturday’s Children* [SyC] (1927) Maxwell Anderson

*The Children’s Hour* [tICH] (1934) Lillian Hellman

*The Women* [tW] (1936) Clare Boothe Luce

*The Time of Your Life* [ToyL] (1939) William Saroyan

*Home of the Brave* [HotB] (1945) Arthur Laurents

*Death of a Salesman* [DoaS] (1949) Arthur Miller

*Come Back, Little Sheba* [CBLS] (1950) William Inge

*Middle of the Night* [MotN] (1956) Paddy Chayefsky

*The American Dream* [tAD] (1960) Edward Albee

*The Apple* [tA] (1961) Jack Gelber

*Come Blow Your Horn* [CBYH] (1961) Neil Simon

*Gallows Humor* [GH] (1961) Jack Richardson

*...And Things That Go Bump in the Night* [tTGB] (1962) Terrence McNally

*The Rimers of Eldrich* [tRoE] (1965) Lanford Wilson

*The House of Blue Leaves* [HoBL] (1970) John Guare

*Operation Sidewinder* [OS] (1970) Sam Shepard


*The Shadow Box* [ShB] (1975) Michael Cristofer

*Conjuring an Event* [CE] (1976) Richard Nelson

*Uncommon Women and Others* [UWaO] (1977) Wendy Wasserstein

*Third and Oak* [TaO] (1978) Marsha Norman

*Crimes of the Heart* [CotH] (1978/80) Beth Henley

*What’s Wrong With This Picture?* [WWW] (1985/88) Donald Margulies


*Angels in America, Part One: Millennium Approaches* [AiA] (1990) Tony Kushner
Two plays which provide examples were later replaced due to various methodological issues as described in APPENDIX A:

*The Basic Training of Pavlo Hummel* [PvH] (1973): David Rabe

### British Plays


*The Knock* [tKa] (1961) Ann Jellicoe

*Entertaining Mr. Sloane* [EMS] (1964) Joe Orton

*When Did You Last See My Mother?* [WdyL] (1966) Christopher Hampton

*Enter a Free Man* [EaFM] (1968) Tom Stoppard

*Time and Time Again* [TaTA] (1970) Alan Ayckbourne

*Owners* [Own] (1972) Caryl Churchill

*Knuckle* [Kn] (1974) David Hare

*Alphabetical Order* [AO] (1976) Michael Frayn

*Wreckers* [Wr] (1977) David Edgar


*Neap tide* [Nep] (1986) Sarah Daniels

*Two* [Two] (1989) Jim Cartwright

*The Pitchfork Disney* [tPD] (1991) Philip Ridley

*Peaches* [Peh] (1994) Nick Grosso

*The Knocky* [tKy] (1994) Michael Wynne

*Dealer’s Choice* [DC] (1995) Patrick Marber

*Some Explicit Polaroids* [SEP] (1999) Mark Ravenhill
