

**A DIACHRONIC STUDY OF
THE SEMI-MODAL HAVE TO UNDER NEGATION**

by

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Abstract

This thesis offers a diachronic corpus-based investigation into a largely ignored aspect of the semi-modal HAVE TO in Late Modern English, namely its behavior under negation. By considering three negation patterns – DO negation, DO-less negation and apparent direct negation – it approaches three broad questions: (1) when and how HAVE TO underwent the changeover from DO-less to DO negation, (2) what status HAVE TO has acquired in the domain of ‘absence of necessity’ and (3) how apparent direct negation, HAVE TO NOT, has been faring. First, I demonstrate that DO negation of HAVE TO was established around the 1870s in American English and around the 1930s in British English. Since the present data reveal that Krug’s (2000) cognitive-functional factors – analogical leveling due to weak entrenchment and bondedness – do not entirely elucidate HAVE TO’s development towards DO negation, I instead propose a constructional approach in which the language user is hypothesized to have an abstraction over the semi-modal HAVE TO and the main verb HAVE, and argue that the abstraction is a critical factor in the change under consideration. Second, I show that negated HAVE TO has become a productive marker of ‘absence of necessity’ over the course of the twentieth century, largely encroaching upon the territory of the central modal NEED NOT. Lastly, historical corpus evidence indicates that HAVE TO NOT has existed only marginally, with no sign of growth even in Present-day English. This, in combination with the acquisition of DO negation, attests to Krug’s (2001) observation that new modals emerging in the Modern English period, where negation and question are normally formed with DO, are expected to develop features typical of Modern English syntax, such as DO-support.

Preface

This thesis is original, unpublished, independent work by the author, Tomoharu Hirota.

Table of Contents

| | |
|--|-------------|
| Abstract | ii |
| Preface | iii |
| Table of Contents | iv |
| List of Tables | vi |
| List of Figures | vii |
| Acknowledgements | viii |
| 1. Introduction | 1 |
| 2. Background | 3 |
| 2.1 The development of HAVE TO | 3 |
| 2.2 DO-support and HAVE (TO) | 5 |
| 2.3 Semantics of negated HAVE TO | 9 |
| 3. Aims, data and methodology | 12 |
| 3.1 Aims | 12 |
| 3.2 Data..... | 12 |
| 3.3 Method..... | 13 |
| 4. Results and discussion | 18 |
| 4.1 DO negation of HAVE TO..... | 18 |
| 4.2 Cognitive-functional motivations for the change | 26 |
| 4.3 DO negation of the main verb HAVE | 27 |
| 4.4 Towards an integrated account: DO negation of HAVE (TO)..... | 34 |
| 4.5 Semantics of HAVE NOT TO | 39 |
| 4.6 Directionality of change | 44 |

| | |
|--|-----------|
| 4.7 Change in the domain of ‘absence of necessity’ | 47 |
| 4.8 HAVE TO NOT | 51 |
| 5. Conclusion | 55 |
| References | 58 |
| Appendices | 68 |

List of Tables

| | |
|--|----|
| Table 2.1 Stages of the development of HAVE TO (adopted from Heine 1993: 42) | 3 |
| Table 4.1 DO-less and DO negation with HAVE TO in COHA (1820s to 1900s)..... | 18 |
| Table 4.2 Genre distribution of DO negation with HAVE TO in COHA (1860s and 1870s) | 19 |
| Table 4.3 DO-less and DO negation with HAVE TO in CLMET 3.0, BLOB, LOB, F-LOB and BE06 | 21 |
| Table 4.4 DO-less and DO negation in Hansard (1830s, 1860s, 1890s and 1920s) | 22 |
| Table 4.5 DO-less and DO negation with HAVE TO in Hansard (1920s to 1940s)..... | 23 |
| Table 4.6 DO-less and DO negation with possessive HAVE (adopted and modified from Varela Pérez 2007: 232-233) | 25 |
| Table 4.7 DO-less and DO negation with the main verb HAVE | 30 |
| Table 4.8 (Semi-)modals of ‘absence of necessity’ in written British English (1931-2006) | 48 |
| Table 4.9 (Semi-)modals of ‘absence of necessity’ in written American English (1961-1992) ... | 49 |
| Table 4.10 HAVE TO NOT in COCA | 52 |

List of Figures

| | |
|--|----|
| Figure 4.1 DO negation with HAVE and HAVE TO in COHA | 32 |
| Figure 4.2 DO negation with HAVE and HAVE TO in BLOB and LOB | 34 |
| Figure 4.3 Partial network of HAVE..... | 37 |

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1. Introduction

The semi-modal¹ HAVE TO² has received relatively wide scholarly attention. From the diachronic perspective, there are two main concerns in the literature. First, a number of studies pursue its evolution, typically from Old English, with a view to finding out how the expression came into existence and when it entered the language (e.g. Brinton 1991; Fischer 1994; Krug 2000; Fischer 2015). They are often situated within a theory of grammaticalization, understood as a process in which “lexical items and constructions come in certain linguistic contexts to serve grammatical functions and, once grammaticalized, continue to develop new grammatical functions” (Hopper & Traugott 2003: 18). The other concern is the paradigmatic relationship of HAVE TO with other (semi)modals of obligation/(logical) necessity (e.g. Collins 2009; Leech et al. 2009; Close & Aarts 2010). This line of research reveals that HAVE TO has largely taken the place of *must*, thus corroborating Bolinger’s (1980a: 6) well-known statement that the system of English modal auxiliaries is going through “a wholesale reorganization.”

In spite of the existent literature on HAVE TO, its historical development under negation is largely unexplored. Thus, the following still await investigation:

- The acquisition of DO negation: in proposing a category of “emerging modals” (e.g. BE GOING TO, HAVE TO, HAVE GOT TO, WANT TO), Krug (2000: 230) identifies DO-support as one of the prototypical features. In Present-day English, HAVE TO normally forms negation with DO, yet it remains to be seen when it acquired the property. The issue needs to be investigated, so that we can better understand the categorial development of

¹ Various terms are used in the literature: ‘semi-auxiliary’ (Quirk et al. 1985), ‘quasi-modal’ (Collins 2009), ‘emergent modal’ (Smith & Leech 2013). For simplicity, I adopt the term ‘semi-modal’ (e.g. Biber et al. 1999). Furthermore, ‘central modal’ will be used to refer to e.g. *can*, *will*, *must*.

² Throughout the thesis, I use capitals to represent paradigms as opposed to individual forms. For instance, *have to* only refers to the form *have to*, while HAVE TO encompasses *have to*, *has to*, *had to* and *having to*.

emerging modals (Cf. Mair 2012, 2014 on DO-support of GOT (TO) in American English).

- Change within the domain of ‘absence of necessity’: corpus-based studies tend to focus on where *must*, HAVE TO, HAVE GOT TO and NEED TO may alternate (i.e. present tense affirmatives; see e.g. Tagliamonte & D’Arcy 2007; Close & Aarts 2010). In other words, there is usually not much attention paid to negative contexts. Therefore, the relation of negated HAVE TO with NEED NOT and negated NEED TO is not fully clear (cf. Mair 2006: 105). In light of the restructuring within the auxiliary system (Bolinger 1980a: 6), it is worthwhile considering what status HAVE TO has achieved as an expression marking absence of necessity.
- Alleged direct negation: the negator *not* may directly follow HAVE TO. Apart from Fitzmaurice’s (2000: 182) description of such usage as rare in spoken American English, it goes unnoticed. Thus, it would profit from corpus-based research.

In this thesis, therefore, I will present a diachronic corpus-based investigation into negation of HAVE TO in Late Modern English, with emphasis on the changeover from DO-less to DO negation.

The thesis is organized as follows: Chapter 2 gives background to the present study, focusing on the development of HAVE TO and its behavior/semantics in negatives. Chapter 3 introduces the aims and sources for the study. Chapter 4 presents and interprets the results; discussions, especially of DO(-less) negation with HAVE TO, will proceed within the framework of usage-based theory (e.g. Bybee 2010). Chapter 5 summarizes the main findings.

2. Background

This chapter presents a review of the relevant literature, which covers the development of HAVE TO, DO-support with HAVE (TO) and the semantics of negated HAVE TO.

2.1 The development of HAVE TO

The semi-modal HAVE TO historically derives from possessive HAVE. There are a few theories proposed for its development, which may be, roughly speaking, divided into two groups: semantic-pragmatic accounts (van der Gaaf 1931; Visser 1969; Brinton 1991; Krug 2000; Łęcki 2010; Ziegeler 2010) and syntax-driven ones (Fischer 1994; Ukaji 2005). Fischer (2015) adduces various factors for its development, including the frequent contiguity of HAVE and the *to*-infinitive and analogical influences from constructions with *nede* ‘need.’ While the debate in the literature doubtless indicates the need to further investigate the genesis of HAVE TO, it suffices for the purpose of the present study to sketch out the traditional scenario, first put forward by van der Gaaf (1931) and refined by Brinton (1991). For the sake of convenience, I borrow Heine’s (1993: 42) schema:

Table 2.1. Stages of the development of HAVE TO (adopted from Heine 1993: 42)

| | | |
|------|--------------------------|--|
| I. | I have a letter | [Possession Schema] |
| II. | I have a letter to mail | [Purpose Schema: Possession Schema + purpose/goal adjunct] |
| III. | I have a letter to write | [the possessive meaning of <i>have</i> has been bleached out] |
| IV. | I have to write a letter | [<i>have to</i> now functions as a unit lexeme expressing the modal notion of obligation] |
| V. | I have to write | [the object complement can now be deleted] |

The first three stages document the semantic bleaching of possessive HAVE: HAVE in Stages I and II fully expresses concrete possession, although the possessive sense in Stage II is

accompanied by modal connotations via the *to*-infinitive adjunct. At Stage III, the sense of ‘possess’ in HAVE is weakened since the object is “factitive” (Brinton 1991: 17) in nature, namely something non-existent and thus impossible to possess. The semantic bleaching leads to Stage IV, in which the object is moved to the post-infinitival position, hence making HAVE and infinitival *to* adjacent. This adjacency is generally agreed to be pivotal in the grammaticalization of HAVE TO (Fischer 1994; Ukaji 2005; Fischer 2015). Once HAVE and *to* are reanalyzed as a single unit expressing obligation, the way is opened for further generalization: HAVE TO can occur with no direct object, as shown in Stage V, or with intransitive verbs, as in *I have to go*. This stage patently demonstrates the independence of HAVE TO from the original lexical meaning since possessive meanings are hardly possible without an object to possess.

The dating of each stage is another area of dispute, above all when Stage III was attained. Brinton (1991: 11-12) gives a succinct summary of competing scholarly opinions up until the time of her writing. The contention still continues in recent research: Łęcki (2010: 101-113) argues that HAVE in Old English may already have related to pure obligation, citing some examples of HAVE followed by an intransitive *to*-infinitive (e.g. see Łęcki 2010: 108-109), but Fischer (2015: 130-132) dismisses his examples as questionable. What seems indisputable is, however, that Late Modern English is the critical period for the emergence of contiguous, obligative HAVE TO. Krug’s (2000: 77-81; also Seggewiß 2012: 80-81) detailed corpus investigation shows that HAVE TO did not witness a major leap in frequency until the second half of the nineteenth century. According to Seggewiß’s (2012: 80-81) analysis of *A Representative Corpus of Historical English Registers* (ARCHER) as well as Krug’s (2000: 77), the rise was parallel in American and British English during the nineteenth century, with the latter slightly more progressive.

The rise of HAVE TO since then has been so robust that as a marker of obligation and necessity, it enjoys high discourse frequency in many varieties of English, superseding the central modal *must* (e.g. Biber et al. 1999; Smith 2003; Tagliamonte 2004; Mair 2006; Tagliamonte & Smith 2006; Tagliamonte & D’Arcy 2007; Collins 2009; Leech et al. 2009; Close & Aarts 2010; Collins & Yao 2012). As solid as the establishment of HAVE TO in Present-day English is, it deserves mention that it might be passing its prime as Smith & Leech (2013: 83) and Johansson (2013: 374-375) report its recent decline in British and American English, respectively.

2.2 DO-support and HAVE (TO)

Present-day English grammatically requires DO-support in negative declarative sentences when there is no operator¹ (Quirk et al. 1985: 133). This state of affairs is generally considered having been reached around 1700 (Ellegård 1953: 162-163). However, as Ellegård (1953: 201) remarks that “[i]t is in fact not unlikely that each verb has its own history,” different verbs seem to have acquired DO-support at differential rates. For instance, he shows that the KNOW-group (i.e. KNOW, BOOT, TROW, CARE, DOUBT, MISTAKE, FEAR, SKILL and LIST) is slow to accept the property in negative declarative sentences (1953: 199-200), which is echoed by Nurmi’s (1999: 145-146, 150-151) systematic corpus analysis. Indeed, some of these verbs – KNOW and DOUBT in particular – are attested with DO-less negation even in eighteenth- and nineteenth-century texts (see Tieken-Boon van Ostade 1987: 190-191; Iyeyiri 2004: 227-228; Yadomi 2015: 52-53). Furthermore, it seems that there were not only lexical but also regional

¹ Operators refer to verbs that can encode negation, inversion, post-verbal ellipsis and emphasis without DO-support (for the details of these properties, see Quirk et al. 1985: 121-125 or Huddleston & Pullum 2002: 92-93). While the class of operators largely corresponds to that of central modals, it does not necessarily have to; main verbs BE and HAVE can function as operators, too.

factors for the regulation of DO: Hundt (2015), who studies the use of DO-support among the verbs that occur with DO-less negation in her nineteenth-century material, finds that American English employs DO negation more frequently than British, Australian or New Zealand English.

Against this backdrop, the main verb HAVE is pertinent to the present study as well as dialectally intriguing. The presence or absence of DO depends on what sense HAVE conveys: whereas dynamic HAVE (i.e. HAVE with eventive meanings) patterns with DO, possessive HAVE may vacillate between DO and DO-less negation (Quirk et al. 1985: 131-132).

- | | | |
|-----|-----------------------------------|----------------------------------|
| (1) | Dynamic HAVE | Possessive HAVE |
| | a. I <i>don't</i> have breakfast. | a. I <i>don't</i> have any idea. |
| | b. *I <i>haven't</i> breakfast. | b. I <i>haven't</i> any idea. |

According to Trudgill et al. (2002: 5-6), DO-support first spread to the dynamic use of HAVE and then to the possessive one; furthermore, American English is believed to have blazed a trail in the acquisition of DO-support with HAVE. Trudgill et al. (2002: 12-13) hypothesize that language contact with continental European languages in North America, which was not present in other varieties of English, prompted the change; as Jankowski (2005: 39) astutely points out, however, one issue with their hypothesis is that Trudgill et al. do not specify the timing of language contact that it is founded on. Nevertheless, previous research (e.g. Jankowski 2005: 15-16; Hundt 2015: 79-80) indicates that American English was indeed leading the way in adopting DO-support with the main verb HAVE. In Present-day English, although the construction without DO is occasionally found in American English (Biber et al. 1999: 161; Takizawa 2005; Hundt 2015: 69-70), it is typically associated with British English. Note,

however, that reference grammar books characterize it as “the traditional construction in Br[itish]E[nglish]” (Quirk et al. 1985: 131) and “a conservative [British] choice” (Biber et al. 1999: 162). As such a characterization insinuates, it has been becoming less common in British English over the twentieth century, especially the second half (Anderwald 2002: 23, 93-96; Varela Pérez 2007; Leech et al. 2009: 255-256).

Since the semi-modal HAVE TO originates in possessive HAVE, it theoretically allows negation with or without DO-support:

- (2) a. I *do not have to* go.
- b. I *have not to* go.

Historically, the construction without DO (2b) precedes the one with DO (2a). The *Oxford English Dictionary* (OED; see s.v. *have* v., def. 43) cites an example of DO-less negation from the fifteenth century:

- (3) The Kyng, ne none of hise heires, *have not to* entermete of hem, [...]
- ‘The King nor none of his heirs have not to interfere with them, [...]

(1414 *Petition* in *Rotuli Parl.* (1767–77) IV. 59/2 [OED])

By contrast, the earliest citations of DO negation with HAVE TO in the OED come from the late nineteenth century:

- (4) For family use *Brinckle’s Orange* ranks No. 1, and when better known will sell where

it *does not have to* be carried far. (1866 *Rural Amer.* (Utica, N.Y.) 15 Mar. 88/1 [OED])

At present, however, the pattern with DO is the norm, with the DO-less variant labeled as “BrE – somewhat old-fashioned” (Quirk et al. 1985: 145). Denison (1993: 317) mentions that DO-less negation with HAVE TO can be found “in northern BrE dialects and quite recent southern standard,” but some corpus-based studies evidently demonstrate its rarity: it occurs only marginally in the British conversation of the *Longman Corpus of Spoken and Written English* (Biber et al. 1999: 162-163); there are two tokens of DO-less negation from the *Lancaster-Oslo/Bergen Corpus* with none attested in the other members of the Brown family quartet of corpora, and twelve instances (as opposed to 954 of DO negation) in the spoken component of the *British National Corpus* (Krug 2000: 104; see also Anderwald 2002: 96-97); no instance is found in the 1.2-million-word *York English Corpus* (Tagliamonte 2004: 40); three instances are attested in the 1-million-word *Roots Archives* (Tagliamonte & Smith 2006: 353, note 13).

Yet it is not clear when the regulation of DO occurred with HAVE TO. To the best of my knowledge, diachronic quantitative research has yet to be done. The only exception is Krug (2000: 89-90; see also 103-106), whose results are based on the drama section of ARCHER. In his data, however, DO-support with HAVE TO does not appear until the twentieth century in American or British English. Its late appearance in the dataset is probably due to the small size of the sub-corpus. In spite of few empirical studies, we may provisionally extrapolate the timing of the regulation from Sweet’s (1898: 91-92) statement: “[I]n British-English we avoid the American-English periphrasis in *he does not have to work* by the use of the construction *he has*

not got to work.” Thus, it could be hypothesized that American English was quicker to adopt DO-support with HAVE TO than British English and that DO-support became established in American English by the end of the nineteenth century. This hypothesis, of course, requires empirical verification.

As motivations for the shift from DO-less to DO negation, Krug (2000: 106) points out two factors: (a) because DO-less negation with HAVE TO was infrequent and thus weakly entrenched, it was open to analogical regularization, namely the acquisition of DO-support, and (b) as HAVE TO rises in frequency, the bondedness between HAVE and *to* increases, which in turn impedes interpolation between the two. Precisely because these factors seem plausible in view of usage-based theory (e.g. Bybee 2010: Ch. 3-4), they would profit from scrutiny by detailed quantitative studies.

2.3 Semantics of negated HAVE TO

In a conventional dichotomy of root and epistemic modality (e.g. Coates 1983; Sweetser 1990), the semantics of HAVE TO are divided into root necessity and epistemic necessity. While root necessity relates to obligation or duty in the socio-physical world, epistemic necessity concerns the speaker’s judgement on the truth of the proposition expressed.

With DO negation, HAVE TO exhibits external negation in both root and epistemic senses. In other words, the modality falls under the scope of negation, and the negated form expresses absence of necessity. Examples (5) and (6) exemplify absence of root necessity and absence of epistemic necessity, respectively:

(5) I *do not have to* go (= ‘It is not necessary for me to go’).

(6) She was just a little panicky now. ‘Anybody coulda called ’em. *Didn’t have to* be

me (= ‘It was not necessarily the case that it was me’).’

(1950 R. S. Prather *Case of Vanishing Beauty* xxi. 148 [OED])

According to the OED (s.v. *have*, def. 45), examples of negation of epistemic necessity, as in (6), are few and far between. Indeed, Collins (2009: 66) finds no instance in his large-scale corpus study.

By contrast, DO-less negation with HAVE TO may be used with not only external negation, but also internal negation (i.e. the modality lies outside the scope of negation). Jacobsson (1979: 300) lists three potential readings: (a) absence of root necessity, (b) prohibition (synonymous with MUST NOT ‘necessary not to, obliged not to’) and (c) epistemic necessity of a negated proposition.² However, he denies the possibility of (c), claiming that “[t]here is no **He has not to be much of a man* corresponding to *He must not (can’t) be much of a man*” (Jacobsson 1979: 300). As such, DO-less negation with HAVE TO seems to express either (a) or (b). These are illustrated in (7) and (8), respectively:

(7) I notified to you the settlement of the ministry, and, contrary to late custom, *have not to* unnotify it again (= ‘It is not necessary for me to unnotify it again’). (1757 H. Walpole *Let.* 3 July (1840) III. 300 [OED])

(8) Moira gives me a row. I’ve *not to* leave without asking again (= ‘It is necessary for me not to leave without asking again’). (1989 J. Galloway *Trick is to keep Breathing* (1991) 154 [OED])

While Jacobsson (1979: 300) regards absence of root necessity, as in (7), as “the more likely or

² In theory, absence of epistemic necessity is possible, too. But Jacobsson does not consider it for some reason.

the only possible [interpretation],” Krug (2000: 105) observes, based on the examples from the spoken BNC, that HAVE NOT TO usually expresses prohibition. It is to be noted, however, that most of the BNC examples come from northern areas in the British Isles. Similarly, Schulz (2011: 43-45) surveys the Midlands and the North data of the *Freiburg Corpus of English Dialects*, and finds that prohibition occurs only in the North data, though in very small numbers (only four times). These findings therefore square well with Jacobsson’s statement that the prohibition sense “is likely to occur in the speech of people from the north of England” (Jacobsson 1979: 300). Thus, Krug’s observation might be due to the regional factor. At any rate, it is worth seeing which meaning has been historically more typical, absence of root necessity or prohibition.

Furthermore, there is another little-noted negation strategy of HAVE TO: HAVE TO directly followed by *not*. It displays internal negation, expressing prohibition. According to Fitzmaurice (2000: 182), it occurs rarely in spoken American English, but the OED quotes an instance from the late nineteenth century:

- (9) The owner of a farm will *have to not* pay his laborers if he pays his tax.
(1872 *Testimony Joint Select Comm. Condition of Affairs Insurrectionary States: Florida* 211 in *U.S. Congress. Serial Set* (42nd Congr., 2nd Sess.: House of Representatives Rep. 22, Pt. 13) II [OED])

Then, it would be of historical interest to study how it has been faring over time.

3. Aims, data and methodology

3.1 Aims

In light of the paucity of historical studies that investigate the semi-modal HAVE TO under negation, this study aims to present a detailed, corpus-based account of negated HAVE TO in Late Modern English. To this end, it addresses the following questions:

- When was DO-support established with HAVE TO in negatives?
- How did the establishment play out regionally?
- Which has been the typical meaning of DO-less negation with HAVE TO, absence of root necessity or prohibition?
- What is the status of HAVE TO in relation to two other markers of ‘absence of necessity’ (i.e. *need* and NEED TO)?
- How has HAVE TO NOT been faring?

3.2 Data

The present study draws on several corpora to trace the history of negated HAVE TO. Two major varieties of English, American and British English, are surveyed. For American English, I primarily use the 400-million-word *Corpus of Historical American English* (COHA; Davies 2010-). It is a genre-balanced corpus containing fiction, popular magazines, newspapers and non-fiction books from 1810 to 2009, and thus achieving a general coverage of historical written American English. In addition, I will at times turn to the 520-million-word *Corpus of Contemporary American English* (COCA; Davies 2008-), which spans the period 1990 to 2015 with texts sampled from spoken, fiction, popular magazines, newspapers and academic journals.

Since there is no diachronic corpus of British English similar to COHA, I harness the following sources: the 34-million-word *Corpus of Late Modern English Texts*, version 3.0 (CLMET 3.0; De Smet, Diller, & Tyrkkö 2011) and four one-million-word British corpora from the *Brown Family* (Extended), namely the *Lancaster1931 Corpus* (BLOB), the *Lancaster-Oslo/Bergen Corpus* (LOB), the *Freiburg-LOB Corpus of British English* (F-LOB) and *British English 2006* (BE06). CLMET 3.0 covers the period 1710 to 1920, comprising narrative-fiction, narrative non-fiction, drama, letters and treatise (visit <https://perswww.kuleuven.be/~u0044428/> for the details of its make-up; see also De Smet 2005). The quartet of BLOB, LOB, F-LOB and BE06 sample material from 1928-1934, 1961, 1991 and 2003-2008 with the four major categories of ‘Press,’ ‘General prose,’ ‘Learned,’ and ‘Fiction’ (see Leech et al. 2009: Ch.2, Leech & Smith 2005 and Baker 2009 for their corpus design and the comparability across them). All in all, using these corpora in combination makes it possible to study historical written British English. There are some drawbacks in this method, however. For instance, the aforementioned British corpora are considerably smaller in size than COHA, and offer far fewer data points. To compensate for these issues, I will, where practicable, refer to the 1.6-billion-word *Hansard Corpus 1803-2005* (Hansard; Alexander & Davies 2015-), a specialized corpus containing speeches delivered at the British Parliament.

3.3 Method

In order to collect data on DO-less and DO negation with HAVE TO, the procedure adopted here is to first extract all linear strings of HAVE NOT TO and DO NOT HAVE TO. This means using the following queries: *[have] [x*] to* and *[do] [x*] have to* on the BYU corpus interface (COHA, COCA and Hansard) and *{have} (n't|not) to* and *{do} (n't|not) have to* on the CQPweb

interface (BLOB, LOB, F-LOB and BE06). As regards CLMET 3.0, its plain text version was searched via AntConc 3.4.3 (Anthony 2014) for the following sequences: *have/has/had not to*, *haven't/hasn't/hadn't to*, *do/does/did not have to* and *don't/doesn't/didn't have to*.¹ It is true that this procedure overlooks cases where adverbs or other elements occur within the strings, as exemplified in (1):

(1) We *did not even have to* lift our hands to the ripe clusters. (COHA: FIC, 1860)

However, such cases are so rare even in COHA and Hansard² that they do not drastically affect the overall results. Thus, only contiguous HAVE NOT TO and DO NOT HAVE TO will be considered in the present study.

After the retrieval, manual post-editing was conducted to eliminate erroneous hits, such as the following, in which HAVE marks perfect tense and *to* introduces a prepositional phrase:

(2) Death *had not to* them lost its sting, [...] (1829 COHA: NF)

¹ Archaic spellings (e.g. *hath not to*) and three contracted forms, *'ve/'s/'d not to* were also looked for, but only examples of *'s not to* turn up in CLMET 3.0:

(a) [...] she remains the Whitechapel Countess, all on her hind heels against the offer of a shilling of her husband's money, if she *'s not to* bring him to his knees; (1895 CLMET 3.0)

Note that they are potentially ambiguous between BE TO (= 'she is not to bring him to his knees') and HAVE TO (= 'she has not to bring him to his knees'). However, the context makes it clear that the former reading is favorable throughout. As such, the tokens of *'s not to* were not included in the counts. In this connection, it deserves mention that the aforesaid forms scarcely occur in the other corpora, either.

² In COHA, the search for *[have] [x*] [r*] to*, where *[r*]* stands for single-word adverbs, yields relatively many instances of the following kind:

(a) But something tells me, sir, I *have not long to* live. (1834 COHA: FIC)

(b) I *had not far to* follow them. (1844 COHA: FIC)

While, in some cases, the meaning comes close to that of negated HAVE TO, they instantiate the use of possessive HAVE with a "quasi-object" (see Visser 1969: 1487) rather than semi-modal usage. In Hansard, the returns of the same search string are mostly those of emphatic affirmation, which is not negative in nature:

(c) We *have not only to* pay the value of the land, *but* we have to pay an extra 10 per cent: over the value (1900 Hansard)

In addition, some exclusions were made on syntactic or semantic grounds. First, instances of HAVE NOT TO in non-finite forms, such as those in (3) and (4), were removed since DO negation cannot occur in such environments:

(3) But the Tories, [...] and *having not to* advance [...] (1882 COHA: MAG)

(4) [...] you *will have not to* talk of it [...] (1884 CLMET 3.0)

Second, the idiomatic HAVE TO DO WITH, whose sense is clearly not modal, was excluded from the counts:³

(5) a. This humble narrative *has not to do with* the glories and foibles of Boston social life. (1907 COHA: FIC)

b. We *do not have to do* here *with* theories of the origin of the irrigation canals of these ancient empires, [...] (1908 COHA: MAG)

The final exclusion concerns instances where the object is fronted. In such instances, ambiguity arises as to whether the preposed object belongs to HAVE or the verb in the *to*-infinitive. In other words, two interpretations are possible: the modal reading (= ‘I have to do something’) and the possessive-existential reading (= ‘I have something to do’). Example (6) illustrates the point:

(6) [...], we had problems to deal with which they *had not to* deal with, [...] (1927 Hansard)

³ Note, however, that the expression might have had a bearing on the making of the semi-modal HAVE TO (see Brinton 1991: 21; Fischer 2015: 137).

While the structure in the main clause seems to favor the possessive-existential reading in (6), the modal reading equally makes sense. Only when structures such as pied-piping relatives, as in (7), are present is categorical disambiguation possible:

- (7) [...], yearning for those rights for which we *have not to* strive, [...] (1856 COHA: MAG)

In this case, the presence of the pied-piping relative makes it clear that the fronted object is controlled by the verb in the *to*-infinitive, hence the modal reading instead of the possessive-existential reading. Without such cues, however, instances such as (6) cause ambiguity, and thus were taken out of the counts altogether.

Similarly, all strings of adjacent HAVE TO NOT were retrieved from the corpora and then manually screened. Among the excluded are instances of formulaic expressions with *not*, such as *not only ... but (also) ...* and *not so much ... but ...*, as well as ones where HAVE and *to not* are adjacent due to object fronting:

- (8) [...] they have to *not only* learn how to pick up the garbage *but* create jobs, [...] (2011 COCA: SPOK)
- (9) They have to *not so much* preach at them and come with information *but* just, first of all, find out what's going on in the kids' lives. (1996 COCA: SPOK)
- (10) It made me think, oh, yes, *this instinct* you *have to not* perform has now been confirmed by Kermit the Frog (2015 COCA: SPOK)

Note that non-finite instances were not excluded since HAVE TO NOT will be treated in its own right rather than compared to DO(-less) negation.

4. Results and discussion

This chapter presents and discusses the results from the corpora. It is structured as follows: DO negation of HAVE TO (Section 4.1); cognitive-functional motivations for the change (Section 4.2); DO negation of the main verb HAVE (Section 4.3); towards an integrated account: DO negation of HAVE (TO) (Section 4.4); semantics of HAVE NOT TO (Section 4.5); directionality of change (Section 4.6); Change in the domain of ‘absence of necessity’ (Section 4.7); HAVE TO NOT (Section 4.8).

4.1 DO negation of HAVE TO

Table 4.1 below presents the development of DO-less and DO negation with HAVE TO in COHA from the 1820s to the 1900s.¹ As shown in the fourth column, there is a steady rise of negated HAVE TO, which seems to have accelerated from the mid-nineteenth century. Thus, the rise here reflects that of HAVE TO in general (Krug 2000: 77; Seggewiß 2012: 81).

Table 4.1. DO-less and DO negation with HAVE TO in COHA (1820s to 1900s), absolute and normalized (per million words) frequencies

| | DO-less | DO | Total | DO (%) |
|-------|-----------|-------------------------|------------|--------|
| 1820s | 9 (1.3) | 0 (0) | 9 (1.3) | 0% |
| 1830s | 7 (0.51) | 3 (0.22) | 10 (0.73) | 30% |
| 1840s | 10 (0.62) | 8 (0.5) | 18 (1.12) | 44.4% |
| 1850s | 17 (1.03) | 16 (0.97) | 33 (2) | 48.5% |
| 1860s | 15 (0.88) | 35 (2.04)* ² | 50 (2.92) | 70% |
| 1870s | 21 (1.13) | 48 (2.58) | 69 (3.71) | 69.6% |
| 1880s | 23 (1.1) | 71 (3.4) | 94 (4.5) | 75.5% |
| 1890s | 18 (0.85) | 106 (5)* | 124 (5.85) | 85.5% |
| 1900s | 23 (1.02) | 234 (10.38)**** | 257 (11.4) | 91.1% |

The increase in negatives is essentially due to the rise of DO negation: while the normalized

¹ Neither pattern occurs in the 1810s. This might have to do with the fact that the 1810s section of COHA is much smaller in size than the others.

² I indicate statistical significance (the log-likelihood test) by * (p < 0.05), ** (p < 0.01), *** (p < 0.001) and **** (p < 0.0001). This practice is followed throughout this section.

frequency of DO-less negation remains low throughout, that of DO negation consistently rises towards the 1900s. Somewhat surprisingly, not every increment of DO negation in neighboring periods is statistically significant. According to the log-likelihood test, only three increases prove to be above the level of significance: the 1850s to the 1860s and the 1880s to the 1890s (at $p < 0.05$), and the 1890s to the 1900s (at $p < 0.0001$). Nevertheless, the percentage of DO negation clearly goes up over time, reaching 90% in the 1900s.

It is a challenge to decide at what point grammatical change is complete, but 50% may reasonably be employed as a benchmark figure. On the basis of COHA, then, it seems that (written) American English witnessed the regulation of DO negation around the 1860s, which records over 20% of increase from the previous period in proportional terms. However, it is to be noted that in the 1860s DO negation occurs almost exclusively in fiction texts (see Table 4.2). In the 1870s, by contrast, it turns up in the other genres as well, although in small numbers:³

Table 4.2. Genre distribution of DO negation with HAVE TO in COHA (1860s and 1870s), absolute frequencies

| | 1860s | 1870s |
|-------------------|-------|-------|
| Fiction | 33 | 38 |
| Popular magazines | 2 | 6 |
| Newspapers | 0 | 1 |
| Non-fiction books | 0 | 3 |
| Total | 35 | 48 |

While there is no appreciable difference between the two periods in the sheer percentage of DO negation, the wider distribution over different genres in the latter period appears to serve as a better indicator of the spread of change. Therefore, I would rather submit the 1870s as the crucial period. At any rate, the COHA data fully support the hypothesis formed in 2.2 that the regulation

³ The low frequency outside of fiction is probably because susceptibility to change varies from genre to genre (e.g. Hundt & Mair 1999; see below). Connected to the preceding point, another possibility is that semi-modals were not widely used in certain written modes due to their informal connotation.

occurred in American English before the twentieth century.

In COHA, the share of DO negation continues to rise during the twentieth century; in fact, it arrives at about 97% in the 1910s. Therefore, DO-less negation was likely obsolete in American English by the early twentieth century. Interestingly, though, a small number of instances of DO-less negation are still attested in COCA, including an alleged token of HAVE cliticizing to the subject:

- (1) These past few years I've been so furious I've *not to* be on that list. (2008 COCA: SPOK)
- (2) But overall, he *hasn't to* pull himself up by his boot straps, that sort of crucible. (2012 COCA: SPOK)
- (3) He *had not to* imagine that the past was the present. (2015 COCA: FIC)

Given the preponderance of DO negation (28,862 tokens based on the search for *[do] [x*] have to*), they are absolutely trivial. That said, they hint that DO-less negation still marginally exists in (likely literate) American speakers' linguistic inventory as well as British speakers' (see 2.2 above).

Let us now turn to the British data. Table 4.3 summarizes the results from CLMET 3.0, BLOB, LOB, F-LOB and BE06. Similar to the American data, the table documents an increasing use of negated HAVE TO (see the fourth column).⁴ However, a cursory comparison of Tables 4.1 and 4.3 brings out two notable differences between the British and American data. First, it is mainly DO-less negation that seems to have increased in normalized frequency in

⁴ The rise of negated HAVE TO is slightly modest in the British data. This is perhaps to do with the use of NEED NOT (see 4.7).

nineteenth-century British English. Second and related to the first point, the British data indicate that DO negation took hold only a few decades into the twentieth century, which confirms the hypothesis that the regulation of DO with HAVE TO took place in American English earlier.

Table 4.3. DO-less and DO negation with HAVE TO in CLMET 3.0, BLOB, LOB, F-LOB and BE06, absolute and normalized (per million words) frequencies

| | DO-less | DO | Total | DO (%) |
|-----------|---------------|---------------|------------|--------|
| 1710-1780 | 4 (0.38) | 0 (0) | 4 (0.38) | 0% |
| 1780-1850 | 12 (1.06) | 0 (0) | 12 (1.06) | 0% |
| 1850-1920 | 46 (3.64)**** | 10 (0.79) | 56 (4.43) | 17.9% |
| 1931 | 3 (2.58) | 5 (4.3) | 8 (6.88) | 62.5% |
| 1961 | 2 (1.75) | 21 (18.39)*** | 23 (20.14) | 91.3% |
| 1991 | 0 (0) | 32 (28) | 32 (28) | 100% |
| 2006 | 0 (0) | 44 (38.36) | 44 (38.36) | 100% |

In Table 4.3, the normalized frequency of DO-less negation continues to rise until the early twentieth century. Remarkably, the increase from the periods 1780-1850 to 1850-1920 in CLMET 3.0 is statistically highly significant at $p < 0.0001$. The trend reverses itself, however, along with the rise of DO negation (from row 3 downwards), which first crops up in the period 1850-1920. Notably, eight out of ten instances in the section come from twentieth-century texts. This implies that DO negation did not gain much ground before the twentieth century.

A similar trend obtains from four data points in Hansard.⁵ The figures in Table 4.4 show that whereas the normalized frequency of DO-less negation gradually increases towards the 1920s, DO negation appears only near the end of the nineteenth century. The consistency of the results between CLMET 3.0 and Hansard renders it possible to generalize the observation made earlier: British English primarily used DO-less negation until the early twentieth century, when DO negation finally started to emerge.⁶

⁵ For feasibility, I restricted myself to the four data points shown in Table 4.4; however, they more or less capture the overall trend in Hansard.

⁶ Sweet's (1898: 91-92) statement quoted in 2.2 suggests a common use of HAVE NOT GOT TO; however, it

Table 4.4. DO-less and DO negation in Hansard (1830s, 1860s, 1890s and 1920s), absolute and normalized (per million words) frequencies

| | DO-less | DO | Total | DO (%) |
|-------|---------------|---------------|------------|--------|
| 1830s | 44 (1.57) | 0 (0) | 44 (1.57) | 0% |
| 1860s | 67 (1.96) | 1 (0.03) | 68 (1.99) | 1.5% |
| 1890s | 174 (3.4)**** | 17 (0.33)*** | 191 (3.73) | 8.9% |
| 1920s | 301 (4.2)* | 144 (2.0)**** | 445 (6.2) | 33.4% |

To return to Table 4.3, DO negation seems to have taken root by around 1931 as the percentage of DO negation is 62.5% in BLOB. Since, however, the figures in the cells are very small, some caution is naturally required. To shed further light on the establishment of DO negation, it is instructive to consider the genre breakdown in BLOB. While DO-less negation occurs twice in General Prose and once in Press, DO negation appears thrice in Fiction and twice in Prose. Once again, the low figures preclude us from drawing firm conclusions, yet the breakdown suggests that Fiction, which is the genre closest to speech in BLOB, is in the vanguard of change, gradually followed by other genres.⁷ It is reminiscent of Hundt & Mair’s (1999: 236) proposal for “a cline of openness to innovation ranging from ‘agile’ to ‘uptight’ genres.” By comparing journalistic and academic writing across LOB, F-LOB, Brown and Frown, they find journalistic writing “agile” and susceptible to change, but academic writing “uptight” and unsusceptible to innovation. They thus conclude:

Our findings require a model in which grammatical change is seen as mediated through genre. A new form arises, typically but not exclusively in a spoken variety, and then spreads at differential speeds through various genres until at a very remote point it can be

occurs only seven times in the entire CLMET 3.0, with two instances of *ain’t got to*. In Hansard, it appears with a frequency of around 0.5 per million words between the 1890s and the 1960s (on the basis of *[have] [x*] got to [v?i*]*), but is otherwise virtually absent.

⁷ In this connection, the genre distribution of DO negation in CLMET 3.0 merits mention: out of ten instances, five come from narrative fiction, one from drama and the rest from texts labeled as “other.”

said to have been established in “the language.” (Hundt & Mair 1999: 236)

On the basis of their model as well as the BLOB data, it is likely to be an overstatement that DO negation had wide currency across British English by around 1931. It seems more prudent to conclude that DO negation was making inroads mainly into “agile” genres around that time.⁸

The interpretation will of course have to remain provisional, as much bigger written British corpora might produce different outcomes. While the possibility cannot be demonstrated here, let alone entirely ruled out, further support can be obtained from Hansard (i.e. parliamentary language), which plausibly qualifies as an “uptight” and formal spoken genre. Table 4.5 illustrates the development of DO-less and DO negation with HAVE TO in Hansard from the 1920s to the 1940s. The results, which are statistically highly significant at $p < 0.0001$ except for the tiny increase of DO-less negation from the 1920s to 1930s, show that DO negation takes over from DO-less negation in the 1940s. That the change does seem slower in Hansard bolsters up the conclusion reached above. On the whole, I assign the key period in British English to around the 1930s, which can loosely accommodate the results from both BLOB and Hansard.

Table 4.5. DO-less and DO negation with HAVE TO in Hansard (1920s to 1940s), absolute and normalized (per million words) frequencies

| | DO-less | DO | Total | DO (%) |
|-------|----------------|----------------|------------|--------|
| 1920s | 301 (4.2) | 144 (2.0) | 445 (6.2) | 33.4% |
| 1930s | 405 (4.25) | 327 (3.43)**** | 732 (7.68) | 44.7% |
| 1940s | 243 (2.56)**** | 650 (6.85)**** | 893 (9.41) | 72.8% |

On a methodological note, it is striking how congruent Hansard is with the other British

⁸ The concept of ‘genre’ might suggest homogeneity, but it must be borne in mind that there exists variation within any particular genre. For instance, fiction comprises various modes of writing: narrative, represented speech and thought, and other types of discourse. It is therefore possible that some fictional writings are closer to everyday spoken language than others. In other words, there is likely to be a similar cline to Hundt & Mair’s *within* a single genre. While a detailed genre-internal analysis is surely worthwhile, it was not attempted in the present study due largely to the overall low occurrences of the target expressions.

corpora. The congruency makes it tantalizing to suggest that possibly owing to its enormous size, it comes close to representing British English in general. Obviously, though, it is daring to actually make the suggestion, given Hansard's specialized nature. It contains solely speeches delivered at the British Parliament and thus can, strictly speaking, only represent spoken parliamentary language (cf. Leech's 2011: 549-550 discussion on the representativeness of the *TIME Corpus*). The suggestion becomes much less convincing in view of Bowie, Wallis & Aarts (2013), who show that different spoken genres might exhibit different changes. It is possible, then, that the parallelism obtained in the present case is by pure chance and that it might yield conflicting results with other corpora when used for studying other changes. Naturally, these cautionary notes must be borne in mind in using Hansard.

Presumably, however, the type of change might be crucial to the methodological issue here. It will be recalled that the present data point to the earlier development towards DO negation in fiction, which strongly suggests that the initial locus of change was spontaneous spoken language. It is probable, then, that the shift from DO-less to DO negation was a change from below, namely change that "appear[s] first in the vernacular, and represent[s] the operation of internal, linguistic factors" (Labov 1994: 78). Furthermore, the shift mainly concerns morphosyntax, hence speculatively less subject to stylistics and pragmatics than, for example, changes in the use of central modals, studied by e.g. Bowie, Wallis & Aarts (2013). These elements seem likely to lend themselves to the relatively high conformity throughout the British data. By extension, therefore, it may be claimed that as far as (morphosyntactic) change from below is concerned, Hansard could provide a relatively good indicator. It goes without saying that this claim needs to be further pursued in future research. Whether or not the claim holds, there is no doubt that Hansard is a valuable resource to explore Late Modern British English, especially because there

is currently no matching British English corpus in terms of size, granularity and diachronic span.

Let us now return to the discussion of DO-support with negated HAVE TO. The present data have revealed that the usage was established around the 1870s in American English and around the 1930s in British English. It is to be noted, however, that these datings have been determined primarily on the basis of written material. In everyday spoken discourse, where language change tends to be initiated (e.g. the above quotation from Hundt & Mair 1999; also the discussion in the preceding paragraph), the establishment might have happened somewhat earlier. A piece of circumstantial evidence comes from Varela Pérez (2007), who studies negation of possessive HAVE. Table 4.6 below gives a modified version of his results⁹ from LOB, FLOB, the *London-Lund Corpus* (face-to-face private conversation, 1960s-1970s; LLC-conv) and the British section of the *International Corpus of English* (face-to-face private conversation, 1990-1993; ICE-GB-conv):¹⁰

Table 4.6. DO-less and DO negation with possessive HAVE (adopted and modified from Varela Pérez 2007: 232-233), absolute frequencies

| | DO-less | DO | Total | DO (%) |
|-------------|---------|----|-------|--------|
| LOB | 40 | 13 | 53 | 24.5% |
| FLOB | 16 | 65 | 81 | 80.2% |
| LLC-conv | 10 | 30 | 40 | 75% |
| ICE-GB-conv | 2 | 40 | 42 | 95.2% |

Since the use of DO in FLOB (1991) approximates that in LLC-conv (from 20-30 years before), the table patently demonstrates that written language lags behind spoken language by about a few decades. If analogously extended to DO negation with HAVE TO, it might suggest the

⁹ In addition to DO and DO-less negation, Varela Pérez examines the third alternative, HAVE NOT GOT. This is ruled out from Table 5 since the present study is concerned only with the competition between DO and DO-less negation.

¹⁰ He also investigates American, Australian and New Zealand English (see Varela Pérez 2007: 231-232), but British English is the only variety in his dataset that enables historical comparisons for both spoken and written language.

completion of the change around 1840s to 1850s and around 1900s to 1910s in vernacular spoken American and British English, respectively. However, there is no coherent reason for believing that the change of HAVE TO must have proceeded at the same rate as the change of possessive HAVE, and more crucially, the deduction cannot be empirically substantiated. Unfortunately, it will have to remain a mere conjecture.

4.2 Cognitive-functional motivations for the change

As introduced at the end of 2.2, Krug (2000: 106) brings up two factors for the change from DO-less to DO negation: (a) analogical leveling due to weak entrenchment and (b) the bondedness between HAVE and *to*. They seem to fit with the COHA data quite well. As observed in Table 4.1, DO-less negation is rare throughout COHA, with a frequency of around one per million words. The rarity testifies that the pattern was feebly represented in the language user's mind. For this reason, the pathway was open for analogical leveling, which is illustrated by the rise of DO negation. Moreover, as the rise is highly compatible with that of HAVE TO in general, the increasing bondedness within HAVE TO might have facilitated the development towards DO negation, which does not disturb the sequence of HAVE and *to*.

Conversely, it seems difficult to fully account for the change in British English solely on cognitive-functional grounds (see Tables 4.3 and 4.4). In British English, despite the infrequency of DO-less negation, the emergence of DO negation had to wait until the early twentieth century; in fact, up until then, it was DO-less negation that was increasing in normalized frequency. Notice that the pattern makes HAVE and *to* discontinuous. Does the increase mean that interpolation was more permitted in British English than in American English? This seems unlikely. It is to be recalled here that, according to Krug (2000: 77) and Seggewiß (2012: 80-81), the development of HAVE TO was parallel in both varieties. The parallel development allows

the assumption that the bondedness within HAVE TO should have been akin on both sides of the Atlantic Ocean. In other words, interpolation should have been disfavored to similar degrees in both varieties. The rise of DO-less negation in British English makes it doubtful, then, that bondedness played a major role in promoting DO negation.

Overall, while the cognitive-functional factors help us to understand the change at issue to some extent, it is necessary to pursue additional factors to explain (a) why it is that the normalized frequency of DO-less negation increased only in British English and ultimately, (b) why American (British) English was more (less) conducive to the acquisition of DO-support with HAVE TO in negatives.

4.3 DO negation of the main verb HAVE

Section 4.1 has shown that American English was in the lead in adopting DO negation of HAVE TO. The picture is comparable with that of DO-support of the main verb HAVE. As described in 2.2, there is a general consensus that the adoption of DO with HAVE was more advanced in American English than in British English (e.g. Trudgill et al. 2002; Jankowski 2005; Hundt 2015). This raises the possibility that there is a connection between the two phenomena. In this section, therefore, I will address negation of HAVE in order to find out whether it correlates with the emergence of DO negation with HAVE TO.

The analysis draws on five periods from COHA (1820s, 1840s, 1860s, 1880s and 1900s) and two British corpora (i.e. BLOB and LOB).¹¹ The methodology is similar to that explained in 3.3. Instances of the sequences HAVE NOT and DO NOT HAVE were extracted, and only those of HAVE in negative declarative sentences were manually targeted. This entails that instances

¹¹ Hundt (2015: 70) briefly discusses some attestations of DO negation with HAVE in CLMET 3.0; however, since no instance is found in the 1850-1899 British section of ARCHER (pp. 78-79), it appears that the pattern was generally uncommon in nineteenth-century British English.

where *not* has scope over the following element(s) instead of HAVE were omitted:

- (4) It has long been a favorite opinion with some, that holy men have *not unfrequently* a presage of their approaching dissolution, before the event actually overtakes them.
(1844 COHA: NF)
- (5) Probably, the element (the water) has *not a little* to do with it, [...] (LOB G06)

Furthermore, instances of HAVE NOT with no NP were eliminated, since NP ellipsis is not attested with DO NOT HAVE in the data:

- (6) As long as one point had the benefit of competition while another *had not*, [...] (1887 COHA: MAG)
- (7) I have a plan -- if you *haven't*. (1883 COHA: FIC)

However, examples that appear to denote local negation (see Quirk et al. 1985: 775) from the modern perspective were included in the counts:

- (8) How do you know that the great future has *not* many bright things in store for you?
(1868 COHA: FIC)
- (9) The early part of the reign has *not* much to show, [...] (BLOB G37)

The inclusion is justified for two reasons. First, as we will see below, DO negation seems to be the minor variant across the data. Second, there are some contemporaneous instances where

NOT is contracted to HAVE in similar environments; such instances tend to be understood as negation within the VP, namely clausal negation:

- (10) No, sir. Mr. Brown *hasn't* many books here, and I never had any others. (1865
COHA: FIC)
- (11) I *haven't* much knowledge of London at any time. (BLOB K02)

Therefore, it is likely that non-contracted HAVE NOT, as in (8) or (9), was being used for clausal negation as well.

While careful manual inspection was conducted on DO(-less) negation in the two British corpora and DO negation in COHA, it was not feasible to do the same for DO-less negation in COHA due to its sheer amount of data. As such, its occurrences were strategically estimated in the following fashion: the percentage of relevant examples was calculated based on five sets of 100 random samples of *[have][x*] -[v?n*]* ('HAVE NOT not directly followed by a past participle') and the proportion was extrapolated from the totals.¹² Since the nature of the workaround is not amenable to quantifying dynamic and possessive uses of HAVE separately, I treat HAVE as a whole here. The results are provided in Table 4.7, with the extrapolated figures marked with asterisks.

¹² Of course, the workaround is only pragmatic and far from perfect. It rests on the assumption that 100 random samples are somehow representative of the rest. Naturally, caution is required with interpreting the figures arrived at in this fashion; however, since each set within each period is more or less consistent in the frequency of DO-less negation (admittedly, except for the 1880s; see Appendices 1 and 2), the extrapolations may be considered relatively reliable.

Table 4.7. DO-less and DO negation with the main verb HAVE, (*extrapolated) absolute frequencies

| | | DO-less | DO | Total | DO (%) |
|----------|-------|---------|-----|-------|--------|
| American | 1820s | *613 | 4 | 617 | 0.65% |
| | 1840s | *1130 | 56 | 1186 | 4.72% |
| | 1860s | *1313 | 156 | 1469 | 10.61% |
| | 1880s | *1821 | 265 | 2086 | 12.7% |
| | 1900s | *1633 | 474 | 2107 | 22.5% |
| British | 1931 | 47 | 4 | 51 | 7.84% |
| | 1961 | 39 | 16 | 55 | 29.1% |

It can be seen in Table 4.7 (rows 1-5) that DO negation in American English shows a consistent growth in proportion towards the beginning of the twentieth century; however, notice how low its percentage is even in the 1900s. This is contrary to Varela Pérez’s (2007: 225) assumption that “the change [from DO-less to DO negation] was nearly completed with both dynamic and stative uses [of the main verb HAVE]” in nineteenth-century American English. It is possible that the methodology adopted here overestimated the occurrences of DO-less negation (cf. note 12), yet I submit that the change was still ongoing in nineteenth-century American English. Supportive evidence comes from Hundt (2015: 78, 80), who reports that DO-less negation slightly outnumbers DO negation at 5 to 4 in the 1850-1899 American section of ARCHER.¹³ In fact, it seems that the change had yet to run its full course even in the early twentieth century. Witness Curme’s (1935: 209) observation on negation of the main verb HAVE:

Usage fluctuates with *have*, often even in the same sentence: ‘I *haven’t* or *don’t* have, it with me,’ but in emphatic statement: ‘I *do nó*t have it with me,’ where, however, in colloquial speech we may employ also the form without *do*: ‘You have it with you,’ –‘I

¹³ I believe that the almost equal distribution is due to her genre restriction to fiction, journals, diaries, letters, newspapers, legal and science. My cursory analysis of all genres in the same section found eleven instances of DO-less negation and four of DO negation. Therefore, the percentage of DO negation is about 26%.

háven't.'

As he makes no reference to any particular varieties of English,¹⁴ it is implied that (North) American English, too, fluctuated in this respect during the early twentieth century. Indeed, two quantitative studies point in this direction: Jankowski's (2005: 16, Figure 6) survey of 36 American plays, chronologically ranging from 1902 to 2001, shows that the use of DO negation with possessive HAVE does not hit 50% until the second half of the twentieth century; similarly, D'Arcy (2015: 56-57) studies possessive HAVE (GOT) in the period 1858 to 1935 in the *British Colonist* (which became the *Times Colonist* from 1980 onwards), the local newspaper in Victoria, BC, Canada, and finds that DO-less negation of HAVE is the dominant negation pattern throughout, accounting for 86%.¹⁵ All in all, it appears that DO negation of the main verb HAVE was yet to form a strong foothold in early twentieth-century, much less nineteenth-century, American English. Nonetheless, the figures in Table 4.7 tally with the common view that the spread of DO-support with HAVE was more progressive in American English. Given the share of DO negation in BLOB (7.7%; see row 6) as well as the linear progression in COHA, we can fairly safely presume that its incidence should have been much more sparse in nineteenth-century British English (see also note 11).

One might thus theorize that negation of HAVE had an influence on how negation of HAVE TO developed in each variety: the emergence of DO negation with HAVE TO was hindered in nineteenth-century British English by the rarer use of DO negation with HAVE, but

¹⁴ Cf. His remark on HAVE in interrogatives (Curme 1935: 208-209): "The older simple form [DO-less question] survives widely in the literary language in the case of *have*, especially in England."

¹⁵ It must be conceded, however, that their studies cannot directly compare to the present study or to Hundt's (2015), since they focus on possessive HAVE. Furthermore, caution may be required with casually treating Victoria English as a typical North American variety, given the sociohistorical circumstances in Victoria, especially an underlying British influence in the city (see D'Arcy 2015: 47-50).

it was encouraged in contemporary American English by some presence of DO negation with HAVE. Whereas the British component of the theory may appear persuasive, there is strong counter-evidence against the American component. In COHA (1820s-1900s), DO negation of HAVE does occur more frequently than that of HAVE TO in absolute frequency (see Tables 4.1 and 4.7), which might give an impression that the pattern is more typical of HAVE. However, consider Figure 4.1 below, which plots the relative frequencies for DO negation with HAVE and HAVE TO in COHA:

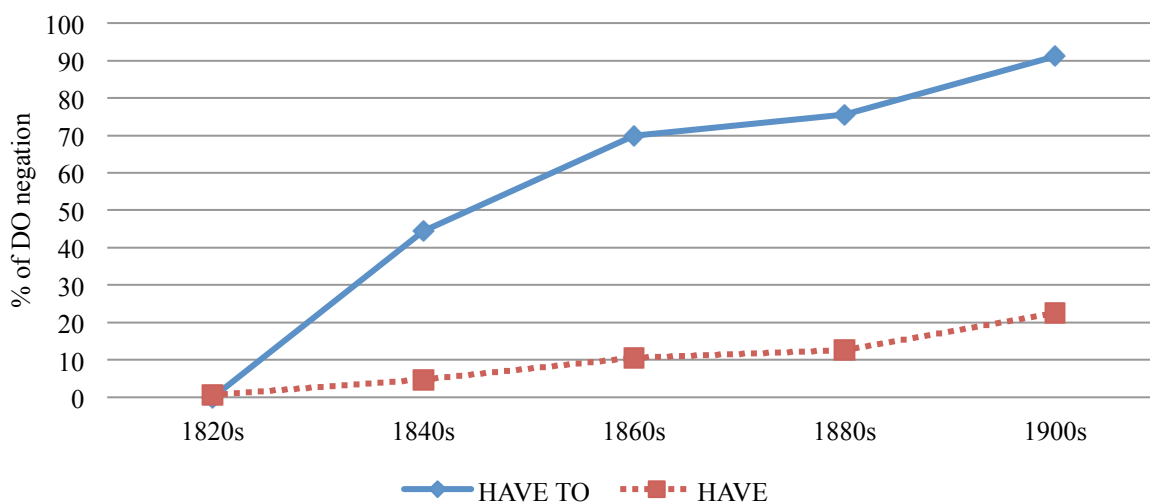


Figure 4.1. DO negation with HAVE and HAVE TO in COHA

As Figure 4.1 clearly charts, DO negation is used consistently more with HAVE TO than with HAVE in proportional terms. Take, for example, the 1860s, in which HAVE TO exhibits a much higher use of DO than does HAVE (70% vs. 10.61%). The differences in relative frequency should have had cognitive consequences on the mind of the nineteenth-century language user. At this point it seems helpful to summon Hoffmann’s (2004: 190-191) thesis that the relative frequency of a certain expression against functionally related linguistic items might have a bearing on its saliency:

If a particular form covers the majority of realizations of a particular concept, it is the preferred choice of expression, even if its absolute frequency is relatively low. It appears likely that the cognitive representation of a linguistic item is influenced by the status it has as a preferred or dispreferred choice of expression. As a result of this, certain low-frequency items – which occur infrequently simply because they express relatively rare events or concepts – may in fact, due to their status as preferred expressions, be more deeply entrenched than more frequent items whose use is less preferred.

In the present case, this is tantamount to asking what is the prime pattern for HAVE (TO) to encode negation. With HAVE TO, DO negation became much more “preferred” than the DO-less variant over the course of the nineteenth century; by contrast, this was clearly not the case with HAVE, since DO-less negation far exceeded the DO variant. Regardless of their differences in absolute frequency, then, DO negation of HAVE TO would have carried more perceptual prominence than that of HAVE.¹⁶ Notably, similar disparities in relative frequency emerge from the British data (see Figure 4.2 below). It is therefore questionable to advocate that DO negation of HAVE furthered that of HAVE TO. The present data, if anything, indicate the other direction of influence.

¹⁶ The deduction of course runs the risk of oversimplification. As Hoffmann (2004: 192) himself expounds, a simple comparison of relative frequencies overlooks genre or formality issues (see 4.1 above); moreover, other negation strategies (e.g. *never*) need to be considered for fuller treatment.

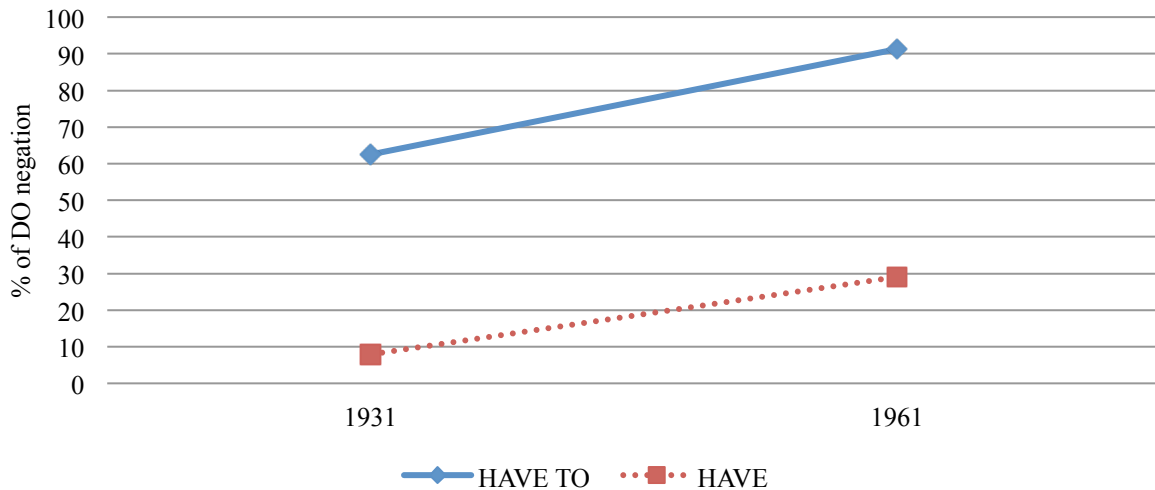


Figure 4.2. DO negation with HAVE and HAVE TO in BLOB and LOB

4.4 Towards an integrated account: DO negation of HAVE (TO)

Rather than attempting to force a relationship where one item influences the other, I propose a different trajectory in which both items respond to the same change at the same time, but at differential paces. Let us draw our attention to the striking parallelism that becomes apparent from Figures 4.1 and 4.2. In COHA, the relative frequencies for DO negation with HAVE and HAVE TO are respectively 10.61% and 70% in the 1860s, and 22.5% and 91.1% in the 1900s. In a similar vein, the portions of DO negation with HAVE and HAVE TO each correspond to 7.84% and 62.5% in BLOB, and 29.1% and 91.3% in LOB. That is, quantitatively speaking, the developments of DO negation with HAVE and HAVE TO seem to have proceeded along the same track in both American and British English. Since there is no immediate reason why the two varieties should follow a comparable frequency trend – even at different historical points – the parallelism strongly suggests that this is probably the natural course of development in the change under investigation.

To elucidate the change, a constructionist approach (e.g. Goldberg 2006; see Traugott & Trousdale 2013: 2-8 for a brief summary of different schools of Construction Grammar) will

prove useful. Constructions are defined as symbolic form-meaning pairings that formally or functionally exhibit some idiosyncrasies or that are sufficiently frequent (Goldberg 2006: 5). They are interconnected to each other, forming a complex network with different levels of generalizations (“construct-i-con,” Goldberg 2003: 219; see also Langacker 1987: 73-76; Croft 2001: 25-29). In order to help capture hierarchical relations in the constructional network, Traugott & Trousdale (2013: 16-17, *passim*) introduce a three-tiered model: micro-constructions, subschemas and schemas. In the model, the level of abstraction becomes higher from micro-construction to schema. To take their illustration of the quantifier construction, constructs (actual linguistic attestations) of *many*, *a lot of*, *few* and *a bit of* each generalize into micro-constructions (i.e. individual construction types); on the basis of similar formal and/or functional properties, they are categorized into the ‘large quant’ subschema (i.e. *many* and *a lot of*) and the ‘small quant’ subschema (i.e. *few* and *a bit of*); the two subschemas are then subsumed under a maximally abstract schema, the ‘quantifier’ schema. As Traugott & Trousdale (2013: 16) point out, however, the model is meant to be “a heuristic,” and thus the divisions between the three levels are not always fast and hard.

Following the model, we can posit two micro-constructions: HAVE (main verb), which encapsulates constructs of both dynamic and possessive HAVE, and HAVE TO (semi-modal), which involves constructs of root and epistemic HAVE TO. Another way to conceptualize this is perhaps to postulate a single micro-construction that contains HAVE and HAVE TO, since the latter originates in a specific use of the former (see 2.1). While such a postulation might be necessary in earlier periods, there are at least two reasons against it in the period concerned here. First, the meaning of HAVE TO – whether root or epistemic – is not totally transparent from its components. The idiosyncrasy surfaces from the fact that other possessive verbs, such as OWN

or POSSESS, cannot readily replace HAVE.¹⁷ Second, HAVE TO was making a leap in frequency during the second half of the nineteenth century, which likely helped the language user to recognize it as a micro-construction in its own right. In other words, HAVE TO meets both of Goldberg's criteria, so it is entitled to enjoy its own constructional status as a micro-construction.

Whereas the two micro-constructions represent individual construction types, they do not exist in isolation in the language user's knowledge. Their link is formal in nature: purely formally speaking, HAVE TO may be understood as instantiating the VP pattern of a verb followed by a *to*-infinitive clause, i.e. the main verb HAVE accompanied by the *to*-infinitive (cf. note 17).¹⁸ Given the growth of *to*-infinitive complements since Middle English (see Los 2005), it seems plausible that the language user shapes a formal abstraction over HAVE and HAVE TO. Indeed, such an abstraction is likely quite crucial in that HAVE TO may display some commonalities with HAVE (DO-less negation in this case) even after their constructional divergence (cf. "persistence," Hopper 1990: 22). In any case, at a higher constructional level, the two micro-constructions converge on the subschema HAVE (TO) containing HAVE and HAVE (TO). The partial hierarchy is illustrated in Figure 3:

¹⁷ As far as root HAVE TO goes, one way to appreciate the possessive meaning is to analyze HAVE TO as HAVE governing the *to*-infinitive as the direct object, that is 'I have an unrealized action (or event) to do' (Cf. Bybee et al. 1994: 184). This line of analysis figures in Ukaji's (2005) proposal for the provenance of HAVE TO: the sequence of HAVE + *to*-infinitive + object has continually existed since Old English, as a variant order of HAVE + object + *to*-infinitive; with the dominant word order changing from SOV to SVO in Middle English, the sequence became reanalyzed as HAVE with the *to*-infinitive functioning as the direct object (cf. Fischer's (1994) word-order-based explanation), expressing 'to possess a non-realized event, to possess what is to be done' (Ukaji 2005: 66); then, the sense gradually shifted to that of pure obligation. Whether or not his scenario holds up to scrutiny, he concludes that the semi-modal HAVE TO entered the language no later than the fifteenth century. In any case, it seems fair to suppose that the possessive meaning should have been hardly discernible from HAVE TO by Late Modern English.

¹⁸ It goes without saying that the formal analyzability diminishes in fused HAVE TO, commonly represented as *hafta*, *hasta* and *hadda*.

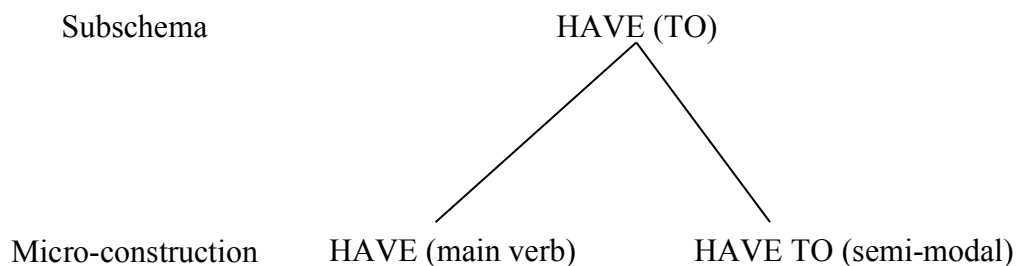


Figure 4.3. Partial network of HAVE

It goes without saying that Figure 4.3 can be expanded in various ways. For example, perfect HAVE would be linked to the subschema HAVE (TO) at the most abstract schematic level. Furthermore, (HAVE) GOT (TO) could be integrated into the network. In fact, such an integration may throw light on the emergence of DO-support with GOT (TO) in late nineteenth-century American English (Mair 2012, 2014), which roughly coincides with the rise of DO negation of HAVE TO. However, these expansions obviously go beyond the scope of the present study.

To return to the change from DO-less to DO negation, I propose that DO negation seizes the subschema HAVE (TO) in its entirety and diffuses within the network. The proposal, I believe, enables elegant explanations for (a) why HAVE was much more immune to the change than HAVE TO and (b) why DO-less negation rose in nineteenth-century British English, but not in contemporary American English.

The solution for (a) lies in the well-known conserving effect by repetition (e.g. Bybee 2010: 24-25, 66-67, 69-71): other things being equal, expressions of high token frequency are strongly entrenched, and thus tend to preserve old morphological or morphosyntactic features longer than those of low token frequency. This is precisely what the present data point to: DO-less negation occurs overwhelmingly more frequently with HAVE than with HAVE TO (compare the figures in the second column of Tables 4.1, 4.3 and 4.7), which indicates a far higher entrenchment of

the pattern in the micro-construction HAVE. Therefore, this made HAVE highly resistant to the incoming pattern (i.e. DO negation), to which HAVE TO was much more prone due to its low occurrence with DO-less negation. In view of the frequency effect, it comes as no surprise then that when the new pattern entered the subschema HAVE (TO), it quickly caught on with HAVE TO, but gradually with HAVE.

With regard to (b), the issue is translated into when DO negation and the subschema met in each variety. According to Figure 4.1, this seems to have happened in American English by the early nineteenth century. As a comparison of Figures 4.1 and 4.2 informs us, however, British English follows in the footsteps of American English roughly 60-70 years later, which suggests the inception of the change at issue during the last few decades of the nineteenth century (see also Table 4.4).¹⁹ In other words, when the frequency of HAVE TO started to take off around the mid-nineteenth century, DO negation had already entered the subschema in American English, thus leaving no room or need for DO-less negation to grow. The converse would have been the case with contemporaneous British English: DO negation was not fully underway as regards the subschema, so British English had to exploit DO-less negation instead. Under this account, therefore, the decisive factor behind (b) is whether DO negation was already available before the rise of HAVE TO in general.

In sum, the constructionist approach adopted here, by postulating the abstraction HAVE (TO) comprising HAVE and HAVE TO, allows an integrated account for how DO negation percolated into them in each variety. Still, it leaves two questions to be unraveled. The first one concerns why DO negation arose in the subschema in the first place. The main driving force is likely to be analogical pressure: the subschema retained DO-less negation for a long time,

¹⁹ Note that these datings are specifically meant for *entrance* of a new pattern, not *establishment*, which is another matter.

presumably through the preserving effect of frequency (see Ogura 1993: 73-78, Krug 2003: 29-31 or Bybee 2010: 132-133 for how high-frequency verbs resisted DO negation longer),²⁰ the potential influence from negation of perfect HAVE (Visser 1969: 1559) or both. As outlined in 2.2, however, the use of DO in negatives became obligatory with lexical verbs (except for BE) during the Modern English period. Thus, with the growing number of lexical verbs taking DO negation, the pattern was eventually extended to the subschema by analogy (see 4.5 for what the acquisition of DO by HAVE TO might insinuate for the unidirectionality hypothesis in grammaticalization). Having said these, I do not have empirical evidence to uphold the claim, so the intricacies of the analogical extension need thorough treatment.

The other question has already been raised in 4.1.2 above. To rephrase it, so that it could fit the current context: what caused the subschema HAVE (TO) to be affected at different historical points in each variety. One promising avenue to this enquiry would be to explore language-external factors in Late Modern English, such as language contact (Trudgill et al. 2002) or codification. If such factors should prove relevant, it would also be worthwhile to consider them on a much larger scale, as Hundt's (2015) study suggests that American English was generally more advanced in using DO under negation.

4.5 Semantics of HAVE NOT TO

Across COHA, CLMET 3.0, BLOB and LOB, the primary meaning of HAVE NOT TO is absence of root necessity 'not necessary to' ("external negation"):

²⁰ It must be noted that HAVE TO did not preserve DO-less negation on frequentative grounds, but very likely due to the connection with the main verb HAVE, as argued earlier in the present section. This serves as an important reminder that frequency is not a sole factor in language change. Above, when I rejected bondedness, which is typically tied with high frequency (e.g. Krug 1998), as a motivation for promoting DO negation with HAVE TO, I indirectly voiced this opinion.

- (12) Yet, by all his confessions, he *has not to* accuse himself, in sixty-seven years of life, of half the very vile enormities which you and I have committed in the last seven only.
(1748 CLMET 3.0)
- (13) But this time he was not alone, and he *had not to* make his path. That was made already, six feet wide, in front of him, [...] (1894 CLMET 3.0)
- (14) We *have not to* look through the entire volume, to learn the history of the individual. All the facts thereunto appertaining, are condensed in a concise article, and each article is complete in itself. (1834 COHA: MAG)
- (15) I am glad I *hadn't to* wait for you, for Mister Bob told me particular to get you home for luncheon. (1922 COHA: FIC)

In some cases, it is ambiguous between absence of root necessity and prohibition ‘necessary not to, obliged not to’ (“internal negation”) (see the discussion below for this sense). In example (16), either reading seems possible: lack of necessity to draw the differences or obligation not to do so.

- (16) The Christian and the world belong to different orders; are regulated by different laws. The Christian is, as it were, grafted upon the new stock, and can no more bear the fruit of his old sinful life, than the ingrafted branch can bear its former fruit. Old things have passed away. All things have become new. He is a new creature in Christ Jesus. These differences *have not to* be marked by finely drawn lines of casuistry. There are indeed points at which the worldly and the Christian life run for a little way parallel.
(1867 COHA: NF)

In broad terms, however, HAVE NOT TO is semantically synonymous with DO NOT HAVE TO, mostly expressing absence of root necessity. Witness example (17), in which DO-less and DO negation appear in consecutive sentences with no appreciable difference of meaning.²¹

- (17) His business is all laid out for him; he *has not to* create it. Business comes to him; he does not have to drum for it. (1891 COHA: FIC)

Occasionally, another ambiguity could arise, namely, between root and epistemic necessity, especially with an inanimate subject. Consider example (18), whose default reading is absence of root necessity; however, *have not to* could be interpreted as ‘the rain-bringing winds do not necessarily pass over lofty mountains’:

- (18) In the middle of the continent there is a broad intermediate band, including central Chile and the provinces of La Plata, where the rain-bringing winds *have not to* pass over lofty mountains, and where the land is neither a desert nor covered by forests. (1839 CLMET 3.0)

²¹ According to Wood (1962: 106; also Traugott 1972: 177), the use of DO with HAVE TO in British English depends on aspect. While *We haven't to go to school on Saturday* indicates (lack of) obligation at one particular time, *We don't have to go to school on Saturday* conveys (lack of) habitual obligation (both examples taken from Wood 1962: 106). However, the distinction does not seem to hold strictly. The pattern without DO is used in (a) and (b), but it does not express absence of non-habitual obligation:

- (a) A sure way to prevent the sparks of an electric machine from igniting gas in the pit would be to put the machine in a gas-tight case, for the machines *have not to* be fed with air as safety lamps are fed (BLOB H20).
- (b) I was determined that as soon as I could I was going to go somewhere where she *hadn't to* keep me. (LOB P16)

Similarly, while the *when*-clause makes it clear that obligation relates to a specific moment in (c), DO negation is employed:

- (c) [...] when he left the house she was out shopping, so he *did not have to* say good-bye to her. (BLOB P23)

I suspect that the alleged aspectual distinction is an analogical extension from that of possessive HAVE (e.g. Wood 1962: 105-106; Visser 1969: 1566): *I haven't money* (at the moment) vs. *I don't have money* (generally speaking).

Unambiguous instances with absence of epistemic necessity are given as examples (19-20), but such instances are overall very scarce:

- (19) If, now, we consider that this very common mood [an aversion to partaking in stately dinners] tends towards billiard-rooms, towards long sittings over cigars and brandy-and-water, towards Evans's and the Coal Hole, towards every place where amusement may be had; it becomes a question whether these precise observances which hamper our set meetings, *have not to* answer for much of the prevalent dissoluteness. (1861 CLMET 3.0)
- (20) "I was afraid that I would just remain a street boy forever, that I was no better than my mother." He turned away, toward the window again. "But, somehow, down here in this house with you, I finally realized that that is not so. I *have not to* be a whore just because I come from whores. I am better than that." (1962 COHA: FIC)

Prohibition, which Krug (2000: 105) identifies as the focal sense of HAVE NOT TO, is attested in the present data, but far from common:

- (21) I shall make a splendid poem on the story of all this, and I'll read it to all of you often – but you will *have not to* talk of it and go about repeating it for a very long while, or the Queen won't forgive us when she hears what we've done. (1884 CLMET 3.0)²²
- (22) What, signor, to this humble entreaty, to a proposition so just, to a love so delicate, you answer but by sighs or rather answer nothing? Sighs belong but to rejected lovers,

²² Note that this example was not included in the counts in 4.1, since *have not to* occurs after *will*; nonetheless, it is quoted here because it encodes prohibition.

and you *have not to* complain of my affection. (1832 COHA: FIC)

- (23) But we must come to our specifications, introducing them with but a single other needful suggestion. We *have not to* complain of any acts or formal measures of the English Government against us, [...]. (1861 COHA: MAG)
- (24) But mind, you've *not to* go back on your promise. You'll have to start Andrew and Geordie within twa days, or the men will no' continue to work. (1920 COHA: FIC)

Thus, it was almost certainly not current in general written American or British English. In view of the present data as well as Krug's (2000) and Schulz's (2011) findings, I subscribe to Jacobsson's view that the prohibition sense is generally characteristic of northern British dialects.²³ To slightly reinforce the view, let me adduce one instance of prohibition from the *Scottish Corpus of Texts & Speech* (SCOTS; <http://www.scottishcorpus.ac.uk>):²⁴

- (25) F1121 Have they nae made them before? Fit ither things did they make? Mm?
Oh they're looking good!
- F1122 Yuck. //[inaudible]//
- F1121 //[inaudible] chocolate, wow!//
- F1122 *Haven't to* touch those.
- F1121 You've got a dirty face. I think you're eating aa the chocolate, are you?

(SCOTS: Document 1561 Conversation: Buckie – Mother and child 01)

²³ Example (24), although found in COHA, comes from a text written by a Scottish author, James C. Welsh.

²⁴ The other instance of HAVE NOT TO in the corpus signals absence of root necessity, however: "I thought we were going to the hospital to see your mother this afternoon." Susan busies herself rearranging Christmas cards on the mantelpiece. "We've *not to* go in this afternoon. They're getting ready for an extra long visiting tonight. For Christmas Eve." (SCOTS: Document 836 Peggy's Party)

4.6 Directionality of change

Directionality of change constitutes one of the major concerns in the grammaticalization literature, where grammaticalization is hypothesized as a unidirectional process (see e.g. Hopper & Traugott 2003: Ch.5); that is, change normally progresses from left to right on “a cline of grammaticality” (Hopper & Traugott 2003: 7):

(26) content item > grammatical word > clitic > inflectional affix

In cases when lexical verbs move towards auxiliary status, the anticipated pathway is as follows:

(27) full verb > auxiliary > verbal clitic > verbal affix (Hopper & Traugott 2003: 111)

While some counterexamples appear to exist (see Norde 2009: 138-143), the directionality is widely attested and thus robust. In 4.4, I have casually situated the emergence of DO negation with HAVE TO in the large-scale movement of English lexical verbs demanding DO-support. However, this could be problematic for the unidirectionality hypothesis, since HAVE TO has moved into the auxiliary domain through grammaticalization, yet acquired DO periphrasis, a feature of lexical verbs. Does the acquisition need to be seen as counteracting the unidirectionality hypothesis?

Krug (2000: 243-245) addresses the question by cogently proposing that English is witnessing the emergence of a new focal point in the auxiliary domain, “emerging modal” (see pp. 214-217 for the details). The category includes BE GOING TO, (HAVE) GOT TO, WANT TO and HAVE TO as central members with NEED (TO), OUGHT TO and DARE as peripheral

members. Based on the central members, Krug (2000: 230) identifies four prototypical features of emerging modals:

(28) **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 /CVCə/, where the second consonant is alveolar.

In his view, the apparent counterdirectional change from auxiliary syntax (i.e. DO-less negation) to lexical verb syntax (i.e. DO negation) is interpreted as a movement within the auxiliary domain, *viz.* from central modal to emerging modal.²⁵ He thus argues that the directionality issue simply disappears, as the adoption of DO does not necessarily mean moving back towards main verb usage.

Another way to approach the issue is to refute the proposition that HAVE TO's acquisition of DO negation is a legitimate example of degrammaticalization, which is generally conceived as change proceeding from right to left on (26). For this purpose, it is useful to invoke Norde's (2009) degrammaticalization framework, which specifies three subtypes of degrammaticalization – degrammation, deinflectionalization and debonding. Since the present case concerns a

²⁵ Krug (2000: 238) considers that HAVE TO used to be closer to the central modals owing to DO-less negation and clitic forms (e.g. *I've to wait*). It seems debatable, however, whether DO-less negation of HAVE TO purely instantiates auxiliary syntax. It might be argued that the negation pattern represents a blended structure between auxiliary syntax (DO-less negation) and lexical verb syntax (the presence of the *to*-infinitive). Alternatively, one could perhaps view the pattern as a vestige of the previous negation system, in which DO was not required to form negation (Cf. Denison's 1998: 170 analysis on *needed not to*).

functional word (or rather ‘a functional unit’ in this case), degrammation is relevant, defined as:²⁶

Degrammation is a composite change whereby a function word in a specific linguistic context is reanalyzed as a member of a major word class, acquiring the morphosyntactic properties which are typical of that word class, and *gaining in semantic substance*. (Norde 2009: 135; emphasis added)

It becomes apparent from the definition that degrammation must involve not only morphosyntactic but also semantic shifts. It follows, then, that we can conclude that HAVE TO’s adoption of DO-support does not qualify as an instance of degrammation (and by extension, degrammaticalization; see Norde 2009: 8-9, 120-123 for her generic definition of the process), since its change is purely morphosyntactic. It is not the case that after adopting DO-support, HAVE TO developed concrete meanings, such as possession or existence (see also 4.5 for the synonymy between DO-less and DO negation). In Norde’s scheme, thus, the morphosyntactic development in question does not necessarily challenge the unidirectionality hypothesis.²⁷

Aside from the directionality issue, it is perhaps not surprising from a historical standpoint that “new” modals tend to gravitate towards DO-support. The peculiar morphosyntactic patterns of the central modals (e.g. direct negation and subject-verb inversion) fossilized mainly because those patterns were dominant in earlier English syntax, and particularly frequent with the verbs

²⁶ Deinflectionalization and debonding pertain to inflectional affixes and bound morphemes, respectively (see Norde 2009: Ch. 5-6).

²⁷ There are some debates in the literature regarding whether the morphosyntactic developments of DARE (TO) and NEED (TO) violate the unidirectionality hypothesis (e.g. Beths 1999; Taeymans 2004a, 2004b; Schlüter 2009). In Norde’s view, they are not examples of degrammation since they acquired only morphosyntactic properties of lexical verbs with no semantic gains (see Norde 2009: 136-137).

that would later form the category of central modal verbs (e.g. Bybee 2003: 619-621; Krug 2011: 553; see Krug 2003: 29-33 or Bybee 2010: Ch.7 for empirical evidence). That is to say, the establishment of their distinct properties is probably merely historical. Then, there is no *a priori* reason that new modals emerging during the Modern English period inevitably follow suit, since negation and question without DO are no longer highly productive; rather, they are more likely to gain features pervasive in Modern English syntax, such as DO periphrasis. This perspective is not novel at all, as the following quotation from Krug (2001: 326; see also Bolinger 1980b: 295) shows:

[T]here are no frequent strings such as WANT TO *not* or GOT TO *you...?* Productive patterns like DO-support and semi-productive infinitival *to* complements (or their phonological traces) will fossilize on emerging auxiliaries, a fact that will only become apparent once new ways of infinitival marking (such as *on -ing*) have become more productive.

Historically, therefore, the establishment of DO-support with HAVE TO is well in line with the general movement in the Modern English verb system. I will return to the issue in 4.8, which deals with HAVE TO NOT.

4.7 Change in the domain of 'absence of necessity'

As we have seen in 4.1 (see Tables 4.1 and 4.3), there has been an increase in the use of negated HAVE TO over the past few centuries. The increase invites a question as to its paradigmatic relation with the central modal *need* and the semi-modal NEED TO, both of which express

absence of necessity under negation. Taeymans (2004a: 105) observes the replacement of NEED NOT by negated HAVE TO and NEED TO in Present-day British English. However, since her study is based on the *British National Corpus*, she does not present diachronic data to illustrate the replacement (cf. Taeymans 2004b). More importantly, as she does not include HAVE TO in the study, it is not clear to what extent each expression is used to convey the concept in question. Generally, the domain of ‘absence of necessity’ has rarely attracted attention in the broad corpus-based literature on (semi-)modals (a concise overview available in Seggewiß 2012: 33-39). Thus, this section will offer a brief quantitative investigation into the domain.

To that end, I make use of the entire *Brown family* (Extended). In other words, instead of COHA or COCA, the *Brown Corpus* (Brown) and the *Freiburg-Brown Corpus* (Frown) are employed here for American English. One downside in the method is that American English is restricted to two data points, 1961 and 1992; by contrast, one advantage is that Brown and Frown ensure a high degree of comparability with the other British corpora. Methodologically, I follow Taeymans’ (2004a: 105-106) approach, focusing on NEED NOT and DO negation of HAVE TO and NEED TO. It is to be noted, though, that where DO-less negation of HAVE TO occurs (i.e. BLOB and LOB), the instances are subsumed under DO negation of HAVE TO, since both patterns convey absence of necessity.²⁸ The results are summarized in Tables 4.8 and 4.9.

Table 4.8. (Semi-)modals of ‘absence of necessity’ in written British English (1931-2006), absolute and relative frequencies

| | BLOB (1931) | LOB (1961) | F-LOB (1991) | BE06 (2006) |
|----------------|-------------|------------|--------------|-------------|
| NEED NOT | 57 (86.4%) | 49 (64.5%) | 25 (35.7%) | 6 (9.2%) |
| DO NOT HAVE TO | 8 (12.1%) | 23 (30.3%) | 32 (45.7%) | 44(67.7%) |
| DO NOT NEED TO | 1 (1.5%) | 4 (5.2%) | 13 (18.6%) | 15 (23.1%) |
| Total | 70 | 86 | 76 | 73 |

²⁸ DO-less negation with NEED TO (see Visser 1969: 1426-1427; Denison 1998: 170) was also searched for, but there are no such instances found in the corpora used here.

Table 4.9. (Semi-)modals of ‘absence of necessity’ in written American English (1961-1992), absolute and relative frequencies

| | Brown (1961) | Frown (1992) |
|----------------|--------------|--------------|
| NEED NOT | 23 (35.4%) | 28 (35.5%) |
| DO NOT HAVE TO | 33 (50.8%) | 34 (43%) |
| DO NOT NEED TO | 9 (13.8%) | 17 (21.5%) |
| Total | 65 | 79 |

The overall picture is that negated HAVE TO encroaches upon the territory of NEED NOT. Despite the lack of early twentieth-century American data, we can infer from LOB and Brown that written American English was pioneering in the encroachment, as HAVE TO accounts for 30.3% in the former, but for 50.8% in the latter. However, the speed of change in written British English seems to have accelerated during the late twentieth century, such that the regional difference observed in 1961 disappears in 1991/1992 (see Mair 2015 for “a diachronic drift” in the modal system of English).

The other semi-modal NEED TO, which is reported to be rapidly rising (e.g. Smith 2003; Smith & Leech 2013), also shows a continuous increase; however, the increase here is so modest that NEED TO does not seem to be actively partaking in the domain under investigation. This might have to do with the main motivation for the rise of NEED TO:

[M]ost of the increased uses of NEED TO are in affirmative contexts. I believe that sometimes in these contexts it competes with MUST and HAVE TO (and (HAVE) GOT TO) since pragmatically it can acquire the force of an imposed obligation, but – something which does not apply to the other markers – the writer or speaker can claim that the required action is merely being recommended for the doer’s own sake [...]. This ambiguity allows the writer or speaker to appear more cognizant of individuals’ requirements, and at the same time downplay his or her own authority (Smith 2003: 260)

That is to say, when imposing an obligation on the hearer, the language user strategically employs NEED TO, so that they can cushion the blow. Presumably, such masking effects are not as applicable to expressing absence of necessity, since the necessity is not imposed but taken away. Consider the following examples, where HAVE TO and NEED TO seem interchangeable with each other:

(29) But, believe me, you *don't have to* be a poker professional to come out on top. (BE06 F16)

(30) You *don't need to* be a top-flight designer to take part. (BE06 E34)

Therefore, the language user is less likely to feel it necessary to invoke NEED TO in negative contexts than in affirmative contexts. If this assumption is valid, it explains why negated HAVE TO is still on the increase from F-LOB to BE06, where Smith & Leech (2013: 83) find that the frequency of HAVE TO decreases, yet that of NEED TO increases: as HAVE TO and NEED TO function similarly under negation, there is not much motive to substitute the former with the latter. Furthermore, we may even conclude that the minor increment of NEED TO in negatives is a mere epiphenomenon of its robust rise in affirmatives.

Needless to say, this brief analysis can be expanded further. For instance, in-depth qualitative studies, as Nokkonen (2006) and Müller (2008) do on NEED (TO), might shed more light on the shifts in frequency or tease out subtle semantic-pragmatic differences among the three. It is also possible to investigate the domain of 'absence of necessity' in much more detail by adding expressions such as *it BE NOT necessary*, *there BE no need to* and *not necessarily*. But these will be left for future research.

4.8 HAVE TO NOT

The pattern HAVE TO NOT is extremely uncommon throughout the historical corpora that I used. While COHA yields eight examples, there are none found in the British corpora except for Hansard, which gives three.²⁹ Since Hansard is a lot bigger in size than COHA, this makes the pattern seem much more scarce in British English than in American English. Note that the sequence HAVE TO NOT structurally resembles a special case of the split infinitive, namely the split negative infinitive:³⁰

(31) [...] I try *to not* get too emotional about it. (COHA: NEWS, 2005)

Whereas the structure has recently been rising in use, the rise seems largely restricted to American English (Hirota 2016; see also Fitzmaurice 2000: 179; Burchfield 2004: 738). Thus, the greater scarcity of HAVE TO NOT in the British corpora might be a reflection of the trend.

Interestingly, all the attested examples in COHA cluster in the last few decades of the corpus. The results might imply that the pattern is on the rise in more recent American English, but COCA does not present positive evidence for this. As is clear from Table 4.10, the incidence of HAVE TO NOT is low to the point of non-existence in every genre, with no apparent growth over the whole 25-year period. It seems therefore that, since its appearance in the nineteenth century (see example (9) in 2.3), it has remained marginal.

²⁹ Similarly, the BYU-BNC (<http://corpus.byu.edu/bnc/>) has only one relevant instance from spoken material: [...] I think they *have to not* lose sight of sponsorship potential with the disadvantages as well as the anonymous giving (unclear) branch, [...]. (1985-1994 BNC: HYY S_meeting)

³⁰ It is trivially true that HAVE TO NOT has no unsplit counterpart since it is semantically distinct from HAVE NOT TO (see below).

Table 4.10. HAVE TO NOT in COCA, absolute and normalized (per million words) frequencies

| | 1990-1994 | 1995-1999 | 2000-2004 | 2005-2009 | 2010-2015 |
|--------------|------------------|------------------|-----------------|------------------|------------------|
| Spoken | 9 (0.41) | 9 (0.42) | 9 (0.42) | 12 (0.59) | 15 (0.61) |
| Fiction | 0 (0) | 3 (0.15) | 4 (0.2) | 2 (0.1) | 4 (0.16) |
| Magazine | 5 (0.24) | 2 (0.09) | 1 (0.05) | 2 (0.1) | 2 (0.08) |
| Newspaper | 2 (0.1) | 1 (0.05) | 7 (0.34) | 2 (0.1) | 1 (0.04) |
| Academic | 0 (0) | 1 (0.05) | 0 (0) | 1 (0.05) | 0 (0) |
| Total | 16 (0.15) | 16 (0.15) | 21 (0.2) | 19 (0.19) | 22 (0.18) |

The semantics of HAVE TO NOT is generally prohibition ‘necessary not to, obliged not to.’³¹ Consider the following examples in which root *must* or *should* may be substituted for HAVE TO:

- (32) In order to obey, he *has to not* obey. (1984 COHA: NF)
- (33) You have to mean something and you just *have to not* be scared of controversy.
(1998 COCA: SPOK)
- (34) The President has said whatever is done *has to not* add to the deficit. So that’s one of the prerequisites for this bill. (2009 COCA: SPOK)

With other negative expressions in the immediate context, however, the prohibition sense becomes equivocal, as in (35-37). In these cases, the overall meaning may be roughly paraphrased as ‘not necessary not to’:

- (35) “The most important thing is doing what you want to do for a living,” he says, serious.
The armband off. “She” - pointing to Cher- “*never had to not* do what she didn’t want

³¹ There is one exception in the data, in which HAVE TO NOT appears to encode absence of root necessity: Couldn’t it be said that those who *have to not* worry about where to get their next meal or don’t have any concern about this or that or the other thing -- couldn’t it not be say that we are ex -- are -- are preventing these people from realizing their full potential and using their full capacity? (1994 COCA: SPOK)

to do.” (1973 COHA: MAG)

- (36) I mean, I *don't* think that it *has to not* be principle if it is political, that is all I'm saying. I think it fits in with his principles, the principle of his politics, if you will. (2001 COCA: SPOK)
- (37) Maybe she *doesn't have to not* be on TV at all. You know, maybe she could play somebody like a wacky neighbor or a divorced, obese women with a funny dog. (2015 COCA: SPOK)

Syntactically speaking, HAVE TO NOT is intriguing in that it appears to instantiate direct negation. Fitzmaurice (2000: 182) surmises that the negation strategy, as ostensibly meeting the Negation criterion of the NICE properties, is indicative of the semi-modals with *to* becoming an operator. It is highly dubious, however, that HAVE TO will discard DO negation in favor of direct negation. First and foremost, the incidence of HAVE TO NOT is completely negligible in comparison with that of DO NOT HAVE TO. Secondly, it seems that HAVE TO NOT and DO-support are not mutually exclusive. Notice how the two negation patterns occur together in example (37) above. Furthermore, examples (38-39) below exemplify the use of HAVE TO NOT with DO as a question tag and emphatic DO, respectively. They thus indicate that the pattern in question does not necessarily prime HAVE TO for other operator functions (such as Code and Emphasis).

- (38) Somebody *has to not* go out of their mind, *don't* they. (2013 COCA: FIC)
- (39) It looks like they *do have to not* try to be so close, because it's just building resentment, and take a little time off from each other. (1994 COCA: SPOK)

As is rather expected from co-occurrence with DO, the central modals – whether negated or not – can precede HAVE TO NOT, as shown in (40-41). These examples cast further doubt over seeing it as operator negation.

- (40) He warned against Ministers yielding to temptation: Perhaps I *shall have to not* yield to the temptation to follow him in the routes down which he sought to lead the debate:
(C-1980 Hansard)
- (41) [...] even though each will had to will something, it nonetheless *would not have to not* will something else. (2008 COCA: ACAD)

In conclusion, while the pattern analyzed here is interesting from the descriptive perspective, HAVE TO is not likely to develop into a bona fide operator in the foreseeable future.

5. Conclusion

This study has set out to explore negation of the semi-modal HAVE TO in Late Modern English. Three patterns – DO-less negation, DO negation and apparent direct negation – were considered, with three broad objectives in mind: (1) to find out when and how HAVE TO underwent the shift from DO-less to DO negation, (2) to examine the status of HAVE TO in the domain of ‘absence of necessity’ and (3) to investigate the development of HAVE TO NOT. As regards the first objective, it was revealed, on the basis of primarily written material, that DO negation of HAVE TO gained a strong foothold around the 1870s in American English and around the 1930s in British English. It was seen that purely frequency-related factors (Krug 2000: 106) fail to adequately accommodate the different trajectories observed in each variety, in particular the longer retention of DO-less negation in British English. A look into negation of the main verb HAVE led to a constructional approach in which the language user is hypothesized to have an abstraction associating HAVE TO with HAVE. The abstraction, I argued, is crucial in elucidating the way in which DO negation spread to HAVE and HAVE TO and why DO-less negation of HAVE TO was used longer in British English as well as why HAVE TO could still accept DO-less negation in Late Modern English – the negation strategy that became generally obsolete by then.

As for the second aim, DO(-less) negation of HAVE TO was compared with NEED NOT and DO NOT NEED TO. It was shown that over the course of the twentieth century, negated HAVE TO has become the dominant expression marking absence of necessity in both American and British English, largely supplanting NEED NOT. Thus, the quantitative data presented here unambiguously corroborate the increasing obsolescence of NEED NOT in the domain at issue, as Taeymans (2004a: 105) points out.

Finally, HAVE TO NOT turned out to be very rare all across the historical data. Fitzmaurice (2000: 182) speculates that the ability for semi-modals with *to* to take direct negation is a sign of their developing operator functions; however, I called her speculation into question since the string HAVE TO NOT is far less productive than DO negation and more importantly, the negation pattern can co-occur with DO and the central modals.

One overarching generalization that surfaces from the present findings is that HAVE TO was and is unlikely to establish negation without DO. This has largely to do with the fact that HAVE TO started to gain ground during the Modern English period, in which all verbs (of course, except for the central modals and BE) require DO-support to form negatives. In this view, it does not come as a surprise that the patterns without DO – DO-less negation and HAVE TO NOT – should be relegated to the periphery, although they do not necessarily have to vanish from the language altogether.

Last but not least, this study is one step towards solving the issue raised by Mair (2014: 75-76), that is, “whether the emergence of *do*-support with *got* [(*to*)] in late nineteenth-century North America is a stand-alone development or part of a wider diachronic dynamic in which modal and semi-modal forms (e.g. *need*, *dare*, *used to* or *ought to*) show increasing tendencies to combine with auxiliary *do*.” Since DO negation arose with HAVE TO in nineteenth-century American English as well, there indeed might have been a movement where the category of semi-modals – or emerging modals in Krug’s (2000) terminology – tended towards DO-support. At the moment, however, the claim will have to remain tentative, as there is little diachronic research done on the historical developments of DO-support with other semi-modals. In future research, therefore, the topic should be addressed more comprehensively. Furthermore, other Inner Circle varieties of English, such as Canadian and Antipodean English, should be

investigated in this regard. Just as American and British English differed with respect to when HAVE TO acquired DO negation, it is quite possible that other semi-modals displayed historical regional variation. All in all, the use of DO with the semi-modals awaits further exploration

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Appendices

Appendix 1. *[have]/[x*] -[v?n*]* in COHA

| | 1820s | 1840s | 1860s | 1880s | 1900s |
|----------------|-------|-------|-------|-------|-------|
| Number of hits | 1510 | 2825 | 3402 | 3943 | 4255 |

Appendix 2. Five sets of 100 random samples of *[have]/[x*] -[v?n*]* in COHA

| | 1 st | 2 nd | 3 rd | 4 th | 5 th | Mean | Standard deviation |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|--------------------|
| 1820s | 44 | 37 | 44 | 40 | 38 | 40.6 | 3.29 |
| 1840s | 35 | 36 | 46 | 41 | 42 | 40 | 4.53 |
| 1860s | 34 | 40 | 41 | 36 | 42 | 38.6 | 3.44 |
| 1880s | 38 | 51 | 52 | 51 | 39 | 46.2 | 7.05 |
| 1900s | 39 | 36 | 45 | 37 | 35 | 38.4 | 3.97 |