# Contractions of English Semi-Modals: The Emancipating Effect of Frequency

David Lorenz



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### CONTRACTIONS OF ENGLISH SEMI-MODALS: THE EMANCIPATING EFFECT OF FREQUENCY

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David Lorenz

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Erstgutachter: Prof. Dr. Dr. hc Christian Mair

Zweitgutachter: Prof. Dr. Bernd Kortmann

Drittgutachter: Prof. Dr. Daniel Jacob

Vorsitzender des Promotionsausschusses der Gemeinsamen Kommission der Philologischen, Philosophischen und Wirtschafts- und Verhaltenswissenschaftlichen Fakultät: Prof. Dr. Bernd Kortmann

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## CHAPTER 1 Introduction

Taking short cuts is a typical human behavior. If the shortest way from the library to the cafe is to cut across the lawn, then that is what people will do. And in doing so, they will leave a trail. Others heading for the cafe will then follow the beaten path; eventually, people get used to walking this path and it is no longer a short cut to them, but simply the footpath from the library to the cafe. Even so, there also will be those who oppose the use of this desire path, arguing perhaps that the otherwise immaculate lawn should not be damaged.

The English semi-modals *going to*, (HAVE) *got to*, and *want to* are frequently contracted to *gonna*, *gotta* and *wanna*. These short forms resemble in some ways the beaten path across the lawn. They are used because they are shorter and easier to articulate while still fulfilling their purpose; like the desire path when it is frequently used, they have become in many ways the default option in speech. They are also opposed by those who fear for the corruption of the language, and so they repeatedly incite controversy on matters of style, appropriateness, or simply "knowing-right-from-wrong".

Such debate is seen, for example, in popular on-line forums of (English) language and language usage (and probably in pubs and at dinner tables, too). As is often the case with popular debates about linguistic issues, one finds a plethora of opinions and anecdotal evidence (after all, opinions and anecdotes are what make debates interesting). On the "English Only" forum at wordreference.com, one user contends that "there is no word 'gonna", and gotta appears to be even less welcome in the canon of English vocabulary: "It's a bastardization of 'I've got to' and should **never** [sic] be used. [...] I don't like it, nor does anyone who cares about the English language." When Dictionary.com's blog The Hot Word had an article on "relaxed pronunciation" (the text itself mentions "didja", "sorta", and "kinda", among others), the discussion soon encompassed "gonna", "gotta", and "wanna". One commenter feels that "when they are used in communication with the public [...], they reflect a lack of basic grammar and education"; another confides: "For formal writing I'll use the correct pronunciation, but for informal I'll simply type the way I speak", implying, as it were, that the way she speaks (using "gonna" and "gotta") is 'not correct'.

This kind of resentment usually, at least tacitly, refers to the written forms *gonna*, *gotta*, and *wanna*, but sometimes extends to speaking in formal situations. Most English speakers agree that "gonna" and "wanna" are part of the way they speak, for example: "If you get the right grammar, it doesn't

matter how you speak. I consider myself educated, but I always use: gonna, wanna, gotta, [...]" (another commenter on The Hot Word). In 2009, U.S. rapper Kanye West famously coined the phrase "I'ma let you finish" (cf. Anderson 2009), which, linguistically speaking, inolves a further reduction of *gonna* and contraction with the first person singular auxiliary *am*.

On the Language Log, Mark Liberman takes a more benevolent stance on contractions, particularly *gonna*, and acknowledges a temporal development: "it's reasonable to argue that this [spelling *gonna*] has become a morphological or lexical matter, not just a phonetic one. *Gonna* has become a quasi-standard form, the commonest version of aspectual 'going to' for most speakers in all but the most formal or emphatic contexts". Interestingly, this in fact comes close to what I am going to propose in the following chapter.

What all of this shows is that *gonna, gotta, wanna* are words, or maybe not even words, of uncertain status. This holds not only with respect to opinions on them, but also with respect to their actual usage and mental representation. It is this latter status and its development that is the core issue of this book. It will be shown that *gonna, gotta* and *wanna* are currently undergoing a change in their relation to the respective full forms. This leads to two propositions, which form the major hypotheses of this work:

- 1) The contracted forms of English semi-modals (i.e. *gonna*, *gotta*, *wanna*) are undergoing a process of change from phonological to lexical variant ('lexical emancipation', as defined in 2.4.).
- 2) The more frequent the contracted form, the faster it advances through this process.

Following from this, two questions form the leitmotif of the investigations and discussions to follow. These are 1) How does lexical emancipation proceed?, and 2) What is the role of frequency in this process?

Thus, the studies presented here are largely of exploratory nature. They examine variation and change in the use of the contractions and their full forms, and analyze the results for indications of a change in status, i.e. increasing conceptual independence from the source form. It will be seen that such indications (or, circumstantial evidence) for emancipation can be found on several levels. This evidence is also matched to the discourse frequency of the respective form; the question of the role of frequency entails the need to distinguish between the frequency of the contracted form as such (i.e. its absolute frequency) and the frequency of the contraction relative to that of the full form (its relative frequency). These two frequency measures will be shown to be of different import to the emancipation process. The three semi-modal contractions that form the main object of study, i.e. *gonna, gotta and wanna*, emerge from a grammaticalization background. The description of their use is therefore also a study of grammaticalization. In particular, it describes an aspect of grammaticalization that has often been neglected: a change in form and its consequences rather than a change in meaning or function. On the other hand, the suggested change towards becoming independent 'words' also requires consideration of a cognitive issue, i.e. the mental representation of linguistic structures and items.

These matters are discussed in chapter 2, in which the theoretical foundations of the study of contractions and the concept of emancipation are mapped out. Chapter 3 then presents a study of *gonna, gotta* and *wanna* in contemporary spoken American English. A longitudinal diachronic approach is taken in chapter 4. Chapter 5 reports on a psycholinguistic experiment which investigates the perception of the full and contracted forms. These three studies are summed up in chapter 6, in which I also propose a generalized model of emancipation as a frequency effect.

Some individual aspects of this research have been published previously, see Lorenz (2013a) on the status of *gonna*, Lorenz (2012) on the perception of *gonna* and *gotta*, and Lorenz (2013b) on on-going changes with respect to English semi-modals. This book now presents the full account, tying together research on spoken, diachronic and experimental data, and providing a comprehensive theoretical discussion of the concept of lexical emancipation.

#### 4

# CHAPTER 2 Background and Theory

All change is a miracle to contemplate; but it is a miracle which is taking place every instant.

Henry David Thoreau, Walden (p.6f)

It seems to be in the nature of human languages to constantly, gradually change. The particular change this book is concerned with is the increasing use and commonality of semi-modal contractions in (American) English, and it is proposed that this brings about a change in the status of the contracted forms *gonna*, *gotta* and *wanna*. This is the idea of *emancipation*, namely that they are becoming increasingly independent from their source forms. The present chapter provides a principled discussion of this idea and outlines the theoretical assumptions and conceptions that drive the empirical research to be presented in the following chapters. This research is set within the contexts of variation and change, grammaticalization, and also cognitive linguistics. The concept of lexical emancipation as a frequency effect is explained in connection with, and in contrast to, reduction and univerbation, as well as its relation to grammaticalization and lexicalization. Also, the objects of examination, the semi-modals and their contracted variants, are described from a historical as well as a cognitive perspective.

### 2.1. The Research Background

#### 2.1.1. Variation and Change

What this book presents is essentially a story of variation and change. This implies a few assumptions, the first being that language involves "orderly heterogeneity" (Weinreich et al. 1968: 100). This refers to the fact that there are several ways of saying the same thing, but which way is chosen is not random. (It is not absolutely determined either.) The factors and conditions influencing the choice can be studied, not as categorial rules but as quantitative determinants (cf. Labov 2004). This variation then is the source of change; a change in the language occurs when a new variant spreads through a speech community (a process Labov (1972: 277) terms "propagation"). Beckner et al.

(2009) call variation "the substrate for change in language" (5). Thus, one could reasonably describe 'change' as diachronic variation emerging from synchronic variation (see also McMahon 1994: 251f).

It is a corollary of this that the study of variation can yield insights into on-going change (most notably through 'apparent time' studies, cf. Bailey 2002). As Milroy (2003) explains, "we cannot 'observe' language change in progress", but "[...] we can *detect* change in progress in synchronic states by comparing outputs or products of variation in present-day states of language" (149). Thus, while "[o]ne is always wise after the fact where linguistic change is concerned" (Bolinger 1982: 50), there is some wisdom to be gained about how a change proceeds by detecting it in progress – as especially this 'how' of a change may well be obscured "after the fact". Therefore, "the study of change in progress, forms one of the cornerstones of research in language variation and change" (Bailey 2002: 312).

Such a 'variationist' perspective implies a usage-based approach to language, thus assuming that the features and structures of a language are defined by their usage (cf. Laks 2013). In other words, these features and structures are conventions that the users of a particular language share (cf. the notion of 'common ground' in Clark 1996 and Tomasello 2008: 72ff). As Clark (1996) notes, language is "a conventional signaling system par excellence" (75). The conventions that constitute grammar are learned and shaped through use, and through the use of conventions variation naturally occurs<sup>1</sup>. This variation is also learned, as Laks (2013) points out: "Because it is one of the fundamental dimensions of all usage, and because grammar is built on usage, such variability and internal heterogeneity also affects the cognitive and practical modalities of the linguistic disposition of all speakers, both synchronically and diachronically" (49). Therefore, while linguistic conventions, and the variation therein, are constantly negotiated and renegotiated by the speech community at large, they are also represented in the indivdual language user's mind. Speakers have a systemic knowledge of grammar, i.e. "a structured inventory of conventional linguistic units" (Langacker 2000: 8), which is gained through experience. Given that experience is heterogeneous, heterogeneity and variation are part and parcel of a language user's linguistic competence; as Weinreich et al. (1968) put it, "native like command of heterogeneous structures is not a matter of multidialectism or 'mere' performance, but is part of unilingual competence" (96). In the view of change as diachronic variation, then, usage affects the cognitive representations that language users have, and eventually changes the conventions that they share. The aim of describing quantitive variations in language use (here: the use of semi-modals) is to gain insight into

<sup>&</sup>lt;sup>1</sup> Taking up Clark's (1996: 71f) example of shaking hands as a convention of greeting, variation would include a firm or soft handshake, with the right or left or both hands, looking each other in the eye or not, etc.

the more abstract system of grammar that speakers draw on as they produce speech, and to make inferences about changes within that system.

In light of the above, we see that linguistic change occurs on two levels: as a change in the mental representation in the speakers' minds, and as a change in the conventions of a language as a communicative system. It is the conventions that can be observed in language use; the task at hand is to describe these (changing) conventions and draw conclusions concerning their corresponding mental representations.

Generally, we may broadly categorize variation into three types: Firstly, there is what has been widely studied under the heading of 'sociolinguistic variation', in which the variants are associated with social groups (as defined, for example, by ethnicity, gender, age, education or cultural values). The main difference between "You ain't goin' nowhere" and "You are not going anywhere" is the type of speaker we would expect to produce one or the other sentence. Secondly, there is articulatory variation, that is, variability in pronunciation. While much articulatory variation can be put down to accents and dialects, and is thus ultimately sociolinguistic in nature, there is heterogeneity also in the sound production of a single speaker in a single speech act. This may be due to the rate of speaking, or the sounds and words uttered previously. For the present study, the relevant subtype of articulatory variation is phonetic reduction. Thirdly, there is pragmatic variation. This is particularly prominent in expressions of modality (see also the next section). Thus, "You must go now" and "You had better go now" differ in the strength of obligation and the degree of authority conveyed, and are therefore used for different pragmatic purposes.

In the investigations presented here, the locus of variation (what Labov (2004) calls the 'linguistic variable') are the English semi-modals, the variants are the full forms (*going to, got to, want to*) and their respective contractions (*gonna, gotta, wanna*). One line of argumentation will be that the type of variation changes: what starts out as phonetic reduction (articulatory variation) becomes endowed with a social connotation. Also, as the reduced form becomes more and more common, this social connotation is again backgrounded in favor of a pragmatic one.

#### 2.1.2. Modality, Modals and Semi-Modals

The research objects of this study are English expressions of modality. However, the aim here is not to give a definitorial account of the concept of 'modality'. As Schulz (2010) confidently states: "[T]here is no doubt that modality is ...complicated" (27). Formal descriptions of modality have been put forward in various frameworks (philosophical as well as linguistic); for instance, Kiefer (1987), Narrog (2005), and in part Matthews (1991) and Papafragou (2000) take a logical-semantic approach; Wierzbicka (1987), van der Auwera & Plungian (1998) and Salkie (2009) present typologically oriented analyses; Menaugh (1995), Palmer (2001), Deschamps & Dufaye (2009) and Larreya (2009) are mainly concerned with the linguistic description of (mostly English) expressions of modality, which is also a main theme in Matthews (1991) and Papafragou (2000). I will not recount these works in detail here, but rather draw on their commonalities to establish a basic notion of modality that will suffice for the present purpose.

The smallest common denominator of the various approaches to modality has been formulated by Palmer (2001): "Modality is concerned with the status of the proposition that describes the event" (1). This broad definition entails Kiefer's (1987) position that "there is no sentence [proposition] without modality" (80), since every proposition has a status (which Kiefer calls the 'modus'), whether explicitly expressed or not. Following this, Larreya (2009) distinguishes between modality and 'modalization', i.e. "the use speakers make of modality" (9). Modalization, then, is constituted by the use of a modal expression, and a modal expression denotes the status of a proposition. What this status is in a given case is often tricky to define; it may include assumptions about the time and probability of the event, the speaker's attitude towards it, or constraints on somebody's actions. A common way of categorization is therefore the binary distinction of 'epistemic' modality and 'root' modality (e.g. Larreya 2009, Kiefer 1987<sup>2</sup>). 'Epistemic' refers to the speaker's knowledge or an objective probability regarding the truth of a proposition (cf. Matthews 1991: 33); 'root modality', on the other hand, broadly covers what Narrog (2005: 187) calls "agent-oriented modality", the subjective or intersubjective conditions of an event. Root modality is usually subdivided into 'deontic' and 'dynamic', in relation to the agent: "with deontic modality the conditioning factors are external to the relevant individual, whereas with dynamic modality they are internal" (Palmer 2001: 9). Thus, Matthews (1991) relates deontic modality to "social, moral or ethical constraints" (87) and dynamic modality to "dispositions" (129). A special case of dynamic modality is the 'bouletic' type<sup>3</sup> (cf. Matthews 1991: 155ff), which refers to a subject's will or desires and can therefore be paraphrased as 'volition'.

The examples (1) - (4) present ways of expressing these four main types of modality.

<sup>&</sup>lt;sup>2</sup> In Kiefer's (1987) terminology, 'root' is not used, but his 'deontic' covers all aspects of 'root' modality.

<sup>&</sup>lt;sup>3</sup> The term 'boulomaic' is also sometimes used, e.g. in Kiefer (1987).

- (1) ['epistemic']
   This is probably the best coffee I've ever tasted.
- (2) ['root' 'deontic'] You should try this coffee.
- (3) ['root' 'dynamic'] *I like to drink coffee.*
- (4) ['dynamic' 'bouletic'] *I want to drink coffee.*

This rough sketch of modality encompasses the core functions of *going to/ gonna* ('prediction'/'intention'), (HAVE) *got to/gotta* ('obligation'/'necessity'), and *want to/wanna* ('volition'). We will return to the types of modality with respect to these forms in the empirical analyses in chapters 3 and 4.

The constructions BE *going to* and (HAVE) *got to* have been included in the class called "semi-modals" (e.g. Biber et al. 1999) or "quasi-modals"<sup>4</sup> (e.g. Hopper & Traugott 1993), as they have modal meanings but do not share the morphosyntactic properties of the "central modals" (Quirk et al. 1985), i.e. *will, can, may, should*, etc. The status of WANT *to* is not as clear, although it can arguably be included in the same group (Verplaetse 2003, and see 2.2. below).

Modals and semi-modals in English have received a good deal of attention in recent years, especially in corpus studies, as a focal point of variation and change: "Continuing to the present day, the English modal system has been in a constant state of flux since the Old English period" (Tagliamonte & D'Arcy 2007: 48). The empirical studies in this domain provide a rich background for the present investigations. Naturally, the scope and perspectives of research show considerable variation, and while all previous studies shed light on at least one aspect of the modal system(s) of English(es), they do not necessarily combine to form a coherent whole.

A recurrent finding is that semi-modals have been gaining the upper hand over the central modals in terms of discourse frequencies. Myhill (1995) reports a partial replacement in American English of *must, should, may* and *shall* by HAVE *to*, *got to*, (*had*) *better*, *ought* (*to*), *can* and *going to/gonna* around the time of the American Civil War (1861-1865), suggesting a shift from "more 'principled'" to "more 'interactive'" modal functions (205), which he calls 'democratization'. Smith (2003) and Close & Aarts (2010) observe a similar trend in British English through the twentieth century. Perhaps another symptom of the preference for semi-modal structures over 'modal-like' forms is the expansion of NEED *to* and decline of 'NEED + bare infinitive' (Müller 2008).

<sup>&</sup>lt;sup>4</sup> Collins (2009) sets up the categories slightly differently, so that 'quasi-modals' subdivide into 'semimodals' (where the first element is an auxiliary, as in HAVE *got to*) and 'lexico-modals' (which include, among others, BE *going to*, WANT *to* and NEED *to*).

Leech (2003), using the "Brown Family"<sup>5</sup> of corpora, shows that this decline of central modals and concomittant rise of semi-modals is taking place in both British and American English, though American English appears to have taken the lead in this development. This observation is confirmed by Jankowski's (2004) study of deontic modality, which also notes the incipient preference of HAVE to over got to in North American English. However, the semi-modals do not simply replace the central modals, as "the shifts do not appear to be solely from modal to semi-modal, but also within the category of the modals" (Millar 2009: 209). Millar also notes that stylistic changes are part of the picture. An important notion in this context is 'colloquialization', "the narrowing of the gap between the norms of spoken and written English" (Mair 1997: 1541). The observed increase in semi-modals in texts, then, is due in part to their more colloquial or conversational connotation (cf. Belladelli 2009), and they spread from spoken into written English. Krug (2000) posits that the semi-modals' rise in overall frequency is the major cause of the emergence of the contracted forms, an argument that forms the point of departure for the analyses of contractions presented here. The role of colloquialization in promoting the contractions, however, is not as clear as it might seem, as most styles of writing resist the use of gonna/gotta/wanna. We return to this issue in chapter 4 of this book, which discusses an instance of 'fast-forward colloquialization' in speechpurposed writing.

The synchronic variation in expressing modalities has been studied both across and within varieties of English. Collins (2009) provides the most comprehensive study, comparing the use of several modal expressions in American, British and Australian English. He finds that American English, in particular the spoken variety, shows the strongest tendency to use quasi-modals, though there are notable exceptions: (HAVE) *got to* occurs more frequently in spoken British and Australian English than in American English (Collins 2005: 260f). In American English, however, the difference between HAVE *got to* and *got to* (which Collins does not distinguish) plays a role: "American English uses *got to* for strong obligation, which has supplanted *have got to* in this variety" (Jankowski 2004: 106). These regional differences between American and British English may in fact be a recent development, considering that Berglund's (1997) comparative study of expressions of futurity in the 1960s (using the Brown and LOB corpora) finds that "the similarities [...] are bigger than the differences" (14).

This picture of a shift towards default use of semi-modals is largely confirmed by studies of the sociolinguistic status of expressions of obligation

<sup>&</sup>lt;sup>5</sup> The "Brown Family" consists of the parallel Brown Corpus (American English; Francis 1965) and London-Oslo/Bergen Corpus of Present-Day British English (LOB; Johansson et al. 1978), which provide data from the year 1961, and the follow-ups Frown (Freiburg-Brown Corpus; Hundt et al. 1999) and FLOB (Freiburg-LOB; Hundt et al. 1998) comprising comparable data from 1991.

and necessity (Tagliamonte 2004, Tagliamonte & Smith 2006, Tagliamonte & D'Arcy 2007). These show that while HAVE *to* has become the default variant among younger speakers on both sides of the Atlantic, HAVE *got to* (but not *got to*) has a stronger hold in British English (partly even in the past tense, see Schulz 2010); in Canadian English, *got to* carries "non-standard associations", while HAVE *got to* receives "ambivalent social evaluation" (Tagliamonte & D'Arcy 2007: 81).

Apart from social connotations, there appear to be structural and pragmatic factors as well, affecting especially the expression of futurity. Torres Cacoullos & Walker (2009) find *will* and *going to* to be "functionally equivalent" (337) but differently distributed, such that *going to* is favored in interrogatives, with second person pronoun subjects, and with "epistemic phrases such as *I think* and *I don't know*" (346). This last result confirms the preference for *going to* in subordinate clauses reported by Szmrecsanyi (2003). A 'functional equivalence' likewise applies to *must*, HAVE *to* and HAVE *got to*, as Depraetere & Verhulst (2008) point out<sup>6</sup>.

A little further afield from the core of the present work, but worth mentioning, are investigations into the use of modal markers in new Englishes (Diaconu 2012 on obligation/necessity) and creoles (Facchinetti 1998 on futurity in British Caribbean Creole), and in specific grammatical contexts (Gesuato & Facchinetti on *going to* complementations; Schulz 2010 on past obligation). Another upcoming work on the use of English modal markers is Seggewiß (forthcoming).

Taken together, the studies mentioned add up to a fairly solid picture of variation and change in the use of modals and semi-modals. Most of them, however, neglect the contracted forms *gonna*, *gotta* and *wanna*. The emergence of these forms is the latest development in the history of the ever-dynamic English modal system. They are known to be widely used in spoken English, in particular in the American varieties, but until now their emergence and usage has not been studied empirically and comprehensively.

There are a few studies that do specifically investigate the use of contracted forms, and which provide a basis for the present investigation. Berglund (2000) and Berglund & Williams (2007) examine data from the British National Corpus (BNC), and conclude that the usage of *gonna* is very similar to that of *going to*, but *gonna* tends to align with younger speakers and less formal contexts (Berglund 2000), and with predictive (as opposed to intentional) meaning (Berglund & Williams 2007). Similarly, and drawing on the same data source, Krug (1998a) shows an increased use of *gotta* among younger speakers. Krug (2000), perhaps the most influential work to date that

<sup>&</sup>lt;sup>6</sup> Depraetere & Verhulst refute earlier accounts by Coates (1983) and Palmer (1990), who hold that the source of obligation is always external to the subject with HAVE *to* and HAVE *got to*.

includes an empirical analysis of semi-modal contractions, examines the forms *gotta* and *wanna*. He argues that their modal semantics is an important factor in the development of the contractions, leading to similiar forms (*gotta, wanna, gonna*) from dissimilar sources (HAVE *got to, want to, going to*). This is encapsulated in the 'Iconicity of Grammatical Categories Principle':

Other things being equal, the more a form refers to what is crosslinguistically realized as a grammatical morpheme, the more distinct its linguistic form will be from neighbouring forms and from its source construction syntagmatically, and the more similar it will be to related forms paradigmatically. (Krug 2000: 219)

The condition of referring to "what is crosslinguistically realized as a grammatical morpheme" is most clearly met by the semi-modal of futurity, *going to/gonna*. Krug argues that this extends to HAVE *got to/gotta* and *want to/wanna* as well, so that these form a class of 'emerging modals', becoming more similar to each other in their contracted forms. "Their similarity in form now reflects functional and conceptual closeness, i.e. membership of a new modal category" (Krug 2000: 212). We will return to this point in the discussion of the role of frequency in the status of the contracted forms below (2.7.).

Given that American English is seen to race ahead of the other standard varieties in the developments in modal expressions, and that contractions are on the increase in British English, what is lacking in the literature is a study of American English that explicitly considers the use of the contractions compared to their source forms. The present work provides such a study.

#### 2.1.3. to-Contraction

As already noted, empirical (corpus) studies of contracted forms such as *gonna* and *gotta* are rare. That is not to say, of course, that they have escaped the attention of linguists. Perhaps the first to comment on them - and defend their use - was Robert P. Utter in 1919: "If *gotta* for *must* and *gonna* for *going to* prove useful auxiliaries, vulgar pronunciation will have shown us helpful short cuts in speech" (Utter 1919: 71). Much later, triggered by Lakoff (1970), a fierce debate unfolded about the formal syntactic constraints and trace-theoretic implications of such contractions, largely focussing on *wanna* (i.a. Lightfoot 1976, Chomsky & Lasnik 1978, Andrews 1978, Postal & Pullum 1978, Aoun & Lightfoot 1984). Postal & Pullum (1982) give a summary of the arguments up to that point, aptly calling it "the contraction is blocked in some syntactic environments in which *want* and *to* are adjacent. Thus, contraction is possible in (5b), which is derived from (5a), but not in (6b), as derived from (6a). The

problem that arose was the necessity of defining the respective rules of syntactic transformation that would lead from (5a) to (5b) and (6a) to (6b) (and account for a number of similar phenomena) as well as the kind of trace the subject (*Teddy* / *I*) would leave in the position between *want* and *to*.

- (5) a. I want to succeed Teddy.
  b. Teddy is the man I want to / wanna succeed.
  (6) a. I want Teddy to succeed.
  - b. Teddy is the man I want to / \*wanna succeed.

The various proposals concerning the formal syntactic detail are not of central relevance to the present investigation and thus will not be outlined. What is of import is that the contributions to the "contraction debate" have made different assumptions about the nature of the contraction itself. Lakoff (1970) assumed that it is a "phonological process" (632). Lightfoot (1976) and Chomsky & Lasnik (1978) also adopted this view, and others have extended it to suggest a process at the interface of phonology and another level, using labels such as "morphophonological process" (Boeckx 2000: 359) or "phonosyntactic contraction" (Falk 2007: 193). Boas (2004), taking a construction grammar approach to contraction, also sees wanna as phonological reduction, but attributes to it "a specific meaning (=colloquial style)" (484). These analyses thus share the assumption that the locus of to-contraction is phonology. Pullum (1997), in contrast, does not locate to-contraction at the level of phonology, but rather regards it as a result of "derivational morphology" (81). Pullum identifies a set of seven "therapy verbs", including WANT, prospective GO and deontic GOT<sup>7</sup>, to which a "morpholexical" contraction rule applies. A third approach, neither phonological nor morphological, is to treat the contractions as lexical items. This has been suggested by Bolinger (1980, 1981) and Sag & Fodor (1994). There is, in short, no consensus on the status of the contractions: are they located on the level of phonology, morphology, or the lexicon?

The works referred to thus far are concerned with synchronic analysis and have largely neglected the aspect of change. It is this aspect that forms a central tenet of the present work: the contractions are undergoing a change in status. In the "contraction debate", the diachronic dimension of the phenomenon has been appreciated only by those arguing for a lexical approach: "[O]nly in a historical frame can any sort of interesting description of *wanna* be given" (Bolinger 1980: 297); "[t]he alternating form [i.e. *wanna*] no doubt had its historical source in contraction and merger of *to* with the verb, but no synchronic derivation is motivated" (Sag & Fodor 1994: 4). The idea clearly is that of a

<sup>&</sup>lt;sup>7</sup> The other four are habitual USED, deontic HAVE, OUGHT and SUPPOSED. The motivation for selecting just these seven verbs does not become quite clear.

diachronic pathway from phonetic reduction to lexicalization. This anticipates the notion of 'emancipation' which I will set forth in this work.

### 2.2. What Happened Before

The parent constructions of *gonna*, *gotta* and *wanna*, BE *going to*, (HAVE) *got to* and WANT *to*, have already come a long way. They are the results of grammaticalization processes spanning centuries.

### 2.2.1. The History of BE going to

The case of BE *going to* is fairly straightforward. It involves a meaning shift from 'movement toward' to 'intention' to 'future' (and on to 'probability' when used epistemically). This is a cross-linguistically common grammaticalization path, as identified in Bybee, Perkins and Pagliuca (1994: 240, 268). Examples (7) - (9) illustrate this development:

- (7) ['movement toward' / 'intention'] we be frenchmen, pylgrymes, & <u>are goyng to</u> offre at ye holy sepulcre (Huon of Burdeux 1534: 191; Danchev and Kytö 1994: 62)
- (8) ['intention' / 'future']
  [...] when you are going to lay a tax upon the people (Burton, Parl. Diary 1567: 12.1; Danchev and Kytö 1994: 63)
- (9) ['future'] *The sun <u>is going to</u> shine.*

It has been argued that the construction's semantic development to 'future' through 'intention' has come about by "the semanticisation of the dual inferences of later time indexed by *go* and purposive *to*, not from *go* alone" (Hopper & Traugott 1993: 83). It seems safe to assume, however, that *to* has since come to be perceived as an infinitive marker in the fixed string *going to* (cf. Fischer 1995).

The use of BE *going to* as denoting 'future' appears to have first come up in the 15th century, but only really gained ground in the late 1600s (cf. Mair 2004, Danchev and Kytö 1994). A further boost in frequency then occurred in the late 19th century, and it seems that it was this high frequency that paved the way for the contracted variant *gonna*.

#### 2.2.2. The History of (HAVE) got to

The grammaticalization of (HAVE) *got to* is slightly more complex. The underlying path goes from 'possession' to 'obligation' (cf. Bybee, Perkins and Pagliuca 1994: 184), but it is accompanied by structural changes. Examples (10) - (13) demonstrate the steps in this development:

- (10) *bu hefdest clað to werien* you had clothes to wear (Lamb.Hom. 33; Fischer 1994: 141)
  (11) *nu ic longe spell hæbbe to secgenne* now I long story have to tell (Or. 2 8.94.16; Fischer 1994: 141)
  (12) *I have to tell a story*
- (13) You have to leave

(see Fischer 1994, based on van der Gaaf 1931 and Brinton 1991)

The starting point here is a construction HAVE + NP + *to*-infinitive, attested in Old English; the meaning of HAVE is purely 'possession', with a purposive *to*-infinitive adjunct (example (10)). This construction may invite an inference of duty or obligation (11). Example (12) marks a word order change, which Fischer (1994) sees as the trigger of the grammaticalization process, while Brinton (1991) and van der Gaaf (1931) consider it a result of ongoing grammaticalization. The outcome, in any case, is the construction HAVE *to* Vinf denoting 'obligation', as exemplified in (13) (where 'possession' is ruled out by the absence of an object). This stage was reached in the Early Modern English period (Brinton 1991).

Around 1800, this construction expanded to HAVE *got to* Vinf, presumably in analogy to the replacement of possessive HAVE by HAVE *got* (cf. Visser 1973: 2202f). However, why this replacement extended to the semi-modal HAVE *to* remains something of a mystery. Other than in this construction HAVE *got* is only used to express 'possession'<sup>8</sup>. Where HAVE is used in other senses (e.g. 'partake in' in *have a dance*, 'experience' in *have a good day*, cf. Jespersen 1933), there is no variation with HAVE *got* (\* *have got a dance*, \* *have got a good day*). An explanatory scenario would be that the persisting construction HAVE (*got*) NP *to* Vinf with 'possession + obligation' meaning (14a-b) opened the door to associating HAVE *got* with 'obligation', which then followed the same path as HAVE *to* (15-16).

(14) a. I have some work to do

<sup>&</sup>lt;sup>8</sup> This is unsurprising given HAVE *got*'s origin as a present perfect of *get*. Its possessive meaning is historically derived by inference from 'have obtained' (Lorenz 2009, Schulz 2012).

b. I've got some work to do (15) I've got to do some work (16) I've got to work

The analogy with possessive HAVE *got* seems to carry on to the point where the auxiliary HAVE is omitted (17-18) and *got* is reanalysed as a full verb<sup>9</sup>, which renders (19-20) acceptable to some speakers (see also Mair 2012).

(17) I got a lot of work
(18) I got to work a lot
(19) % Do you got work?
(20) % Do you got to work tomorrow?

### 2.2.3. The History of WANT to

The history of WANT *to* is a less prominent case of grammaticalization. It is often assumed to be closer to main verb than auxiliary in status, and hence less grammaticalized than BE *going to* and HAVE *got to* (see, e.g., the auxiliary - main verb gradient in Quirk et al. 1985: 137). On the other hand, Verplaetse (2003) argues that its core meaning 'volition' falls within the scope of modality, and thus categorizes WANT *to/wanna* as an "incipient modal auxiliary" (155), following Bolinger (1980).

In terms of a shift from lexical to functional, WANT (*to*) has uncontroversially undergone a grammaticalization process, of which Krug (2000: 141ff) provides an overview. WANT first entered the English language in the thirteenth century as a borrowing from Old Norse, denoting 'lack'<sup>10</sup>, and taking as complements an Experiencer subject in dative case and a Stimulus object (Allen 1985: 224). Its meaning then shifted (by inference) from 'lack' to 'necessity' to 'desire'/'volition', as examples (21) - (23) illustrate. The volitional meaning "firmly established itself in the nineteenth century and is now the dominant sense of the verb" (Burchfield 1996: 832).

(21) And whan this wise man saugh that hym (DAT) wanted audience, al shamefast he sette hym doun agayn. (HCM, CTPROS 219.C2:25; c. 1390 – Krug 2000: 142)

<sup>&</sup>lt;sup>9</sup> For instance, Trudgill (2002) notes that in *You haven't got any money, do you?*, "American Standard English currently admits a new verb *to got*" (169).

<sup>&</sup>lt;sup>10</sup> The noun *want* still has the meaning of 'lack' in Present Day English, as in the nursery rhyme: "For want of a nail the shoe was lost. For want of a shoe the horse was lost. For want of a horse the rider was lost. For want of a rider the battle was lost. For want of a battle the kingdom was lost. And all for the want of a horseshoe nail."

- (22) And (to tell you truly) the Money, which you favour 'd me with, I chiefly want to prosecute this design. (ARCHER D1, 1671 – Krug 2000: 144)
- (23) Upon looking into my mother's marriage-settlement [...] I had the good fortune to pop upon the very thing I wanted before I had read a day and half straight forwards, -- it might have taken me up a month; (Laurence Sterne, Tristram Shandy Book I, 1759)

The verbal *to*-infinitive complement to WANT has only been attested since ca. 1700 (after the loss of case marking and the establishment of a fixed Subject-Verb-Object word order), from which point it rapidly increased in usage (Krug 2000: 145f). Thus, the construction WANT *to* Vinf has only undergone the transition from 'necessity' to 'volition', and consequently, "volitional modality is closely tied to modal WANT TO" (Krug 2000: 144). Krug cites (24) as an example in which a 'necessity' reading is still immanent, albeit backgrounded. In (25), by contrast, *want to* already denotes unambiguous volitional modality.

- (24) I wanted to have some chat with you, madam, in private. Why, madam, I, ah -- I, ah but let's shut the door: I was, madam, ah! ah! Can't you guess what want to talk about? (ARCHER D3, 1753 Krug 2000: 145)
- (25) I want to know, methinks, whether Sir Charles is very much in earnest in his favour to Lord G. with regard to Miss Grandison. (ARCHER F3, 1751 – ibid.)

Clearly, WANT *to* assumed its volitional semantics as the corresponding modal WILL left this domain in favor of use as a future marker. To my knowledge, it is unclear whether this resulted from a competition (WANT *to* ousted WILL from the domain of 'volition') or a pull chain (WANT *to* was resorted to in the absence of an expressive marker of 'volition', filling the place WILL had left on being bleached to a 'future' marker).

The later propensity for contraction to *wanna* is, presumably, a function of WANT *to*'s frequency and its modal function (cf. Okazaki 2002). This shows in the restrictions on the use of *wanna* which is restrained when the adjacency of *want* + *to* is derived from the construction WANT X *to* Vinf, as in (26); this is similar to the pair mentioned above (2.1.3.), in which (27) is ambiguous between the readings 'I want Teddy to succeed' and 'I want to succeed Teddy', whereas (28) can only be understood as the latter.

- (26) \* Who do you wanna see Bill? (Postal & Pullum 1978: 6)
- (27) *Teddy is the man I want to succeed.* (Lakoff 1970: 632)
- (28) Teddy is the man I wanna succeed. (ibid.)

A further restriction concerns inflected forms of WANT, which also cannot be contracted to *wanna* (29a-b and 30a-b).

(29) a. Terry wants to play table tennis.
b. \* Terry wanna/wannas play table tennis.
(30) a. Terry wanted to watch the Olympics.
b. \* Terry wannaed watch the Olympics.

With the continued increase in frequency of *wanna*, it is possible that options like (29b) and (30b) will become available in the future (in particular its use in third person singular). At present, however, they constitute gaps in the usage paradigm of *wanna*.

In sum, the semi-modals BE *going to* and HAVE *got to*, and arguably WANT *to* as well, are the product of grammaticalization mechanisms. The next question is how the emergence of the contracted forms *gonna*, *gotta* and *wanna* is tied to these grammaticalization processes.

### 2.3. Reduction and Divergence in Grammaticalization

Among the features of grammaticalization processes are reduction and divergence (Hopper 1991); these play a prominent role in the emergence of semi-modal contractions.

Reduction of form has often been cited as a symptom, sometimes even an integral part of grammaticalization: "Once a lexeme is conventionalized as a grammatical marker, it tends to undergo erosion; that is, the phonological substance is likely to be reduced" (Heine 1993: 106). Hopper & Traugott (2003: 154) identify two types ("tendencies") of phonological reduction that may accompany grammaticalization:

- a) A quantitative ("syntagmatic") reduction: forms become shorter as the phonemes that comprise them erode.
- b) A qualitative ("paradigmatic") reduction: the remaining phonological segments in the form are drawn from a progressively shrinking set [the set of "unmarked segments", 155].

Both types are represented in the case of *gonna*: *gonna* is shorter than *going to*, and the phoneme  $/\eta$ / in *going to* is replaced by, or reduced to, the more frequent and less marked apical nasal /n/.

While phonological reduction is a typical accompanying feature, it is "neither a necessary nor a sufficient property of grammaticalization" (Lessau 1994: 263). Indeed, "pure" grammaticalization, i.e. the shift of an item from lexical to grammatical status (Meillet 1912), or from less grammatical to more grammatical (Kuryłowicz 1965), does not comprise reduction, nor does it necessarily lead to reduction. Yet, as McMahon (1991) points out, "grammaticalization is not only a syntactic change, but a global change affecting also the morphology, phonology and semantics" (160). Whether reduction, when it does occur, is seen as a component or a consequence of grammaticalization is thus a matter of definition. For the purpose of this discussion, I will regard reduction as a symptom of grammaticalization rather than a part of the phenomenon itself.

Logically, functional reanalysis precedes reduction of form in two ways. Firstly, through reanalysis the context of use widens, which leads to an increase in usage frequency, which in turn leads to articulatory reduction: "As the meaning generalizes and the range of uses widens, the frequency increases and this leads automatically to phonological reduction and perhaps fusion" (Bybee et al. 1994: 6). Secondly, the reanalyzed item has less semantic content (it has undergone 'desemanticization', cf. Lehmann 1995: 126f), and will therefore be given less prosodic weight; this lack of stress also promotes reduction. Empirically, Mair (2004) has shown that an increase in discourse frequency, which is the main trigger of phonetic reduction, does not follow the completion of reanalysis directly. He concludes that frequency increases "should rather be seen as a delayed symptom of earlier grammaticalisation" (138). With the semimodals examined in the present study, it is quite clear that the establishment of the reduced forms in spoken English only began after the full forms' reanalysis from lexical to functional had been completed.

Bybee et al.'s (1994: 20f) "parallel reduction hypothesis" conveys the impression that semantic and phonological changes proceed *pari passu*, as a "dynamic coevolution of meaning and form" (20); similarly, Lehmann (1995) states that "phonological attrition and desemanticization go hand in hand" (126). The underlying assumption seems to be that reduced items may still desemanticize further, then be reduced further, and so on. This, however, is rather cyclical than parallel; at each stage, phonological reduction is a consequence of semantic change, but semantic change is not a consequence of phonological reduction. In light of the history of English semi-modals and their contracted variants, it therefore appears that "parallel reduction" should be

rephrased in terms of a cycle of reanalysis and reduction. We return to this point in the concluding chapter.

From the basic assumption that grammaticalized items are prone to reduction, it follows that lexical items are less easily reduced. For instance, the reduced form *gonna* may replace *going to* as a future marker, but not as a lexical present progressive verb (*I'm going to /\*gonna church*). This provides evidence for a conceptual difference between the cognate grammaticalized form and its lexical counterpart: the grammaticalized form has *diverged* from its lexical source. According to Hopper (1991), "[t]he Principle of Divergence [...] refers to the fact that when a lexical form undergoes grammaticization [...] the original form may remain as an autonomous lexical element" (24). Thus, the emergence of the contracted forms *gonna*, *gotta*, and *wanna* is a symptom of divergence. Whether an additional semantic divergence of the contractions from the grammaticalized full forms occurs, that is, whether the contractions come to serve different aspects of their modal function, is a question that will be explored in the empirical studies in chapters 3 and 4 – it will be seen that there is no strong evidence for this, although the process may be underway.

As regards the semi-modal contractions, then, the forms *gonna* and *gotta* involve both reduction and divergence, whereas *wanna*, while obviously a reduction, instantiates divergence to a lesser degree.

As the construction BE *going to* grammaticalizes and becomes more frequent, it becomes entrenched in the speakers' memories; it is thus produced with less effort (automatization) and processed as a chunk, and is therefore subject to phonetic reduction (Bybee 2006). Figure 2-1 shows a putative path of reduction yielding the form *gonna* as its outcome<sup>11</sup>:



Figure 2-1: Phonetic reduction of going to

<sup>&</sup>lt;sup>11</sup> The Oxford English Dictionary of Pronunciation (2001) also lists [gənə(r)], [gɔnə], [ganə], and [gn़ə(r)] as possible pronunciations.

Such reduction processes typically pertain to rapidly produced spoken language. But the form *gonna*, unlike the other reduced forms, is arguably not restricted to rapid speech (Pullum 1997)<sup>12</sup>. Also, with *gonna* the morphological structure [go]+[-ing]+[to] has become opaque. The form *gonna* is not a spontaneous, "on-the-fly" reduction, but rather, at the very least, a conventionalized pronunciation variant<sup>13</sup>. It is this conventionalized reduction that serves as an indicator of divergence in grammaticalization.

Consequently, the contraction is only possible with the grammaticalized semi-modal BE *going to*, not with its lexical counterpart:

(31) a. I'm going to sing
b. I'm gonna sing
(32) a. I'm going to church
b. \* I'm gonna church
(33) a. I'm going to have a beer in the pub
b. I'm gonna have a beer in the pub

In (31a), *going to* is a grammaticalized item; it denotes an intentional future and is followed by a verb. In this case it can be contracted to *gonna*, as in (31b). In contrast, the *going to* in (32a) is lexical, denoting movement in space, followed by a noun, and therefore the contraction is illicit (32b). By the same token, (33a) is ambiguous between a movement and a future reading, however with employment of the contraction, it can only be interpreted as 'future' (33b).

The same case can be made for *gotta*. Here, the phonetic reduction does not go as far as with *gonna* - from [gpt to] to [gpdə] or [gprə] - and the phonological distinction may not be as clear. It is clear, however, that *gotta* is also not restricted to rapid speech and is recognized as an item (whatever its exact status). One might raise objections at this point based on the phonological similarity of *got to* and *gotta* – the contraction's main characteristic perhaps being the t-flap (or alveolar tap) /c/, which is considered a typical feature of North American English (Giegerich 1992: 226)<sup>14</sup>. However, this flap does not generally occur at word boundaries where there is a /t/ in both the coda of the first and the onset of the second word – consider (34-35). Thus, the t-flap can only be regularly applied to *got to* (resulting in /gpro/, and hence /gprə/) if the two elements show a high degree of coalescence, i.e. in the semi-modal construction.

<sup>&</sup>lt;sup>12</sup> This point will be tested in chapter 3.

<sup>&</sup>lt;sup>13</sup> This is a minimal assumption – in the following chapters, I argue that *gonna* rather has the status of an autonomous item.

<sup>&</sup>lt;sup>14</sup> I am indebted to Joan Bybee (p.c.) for drawing my attention to this point.

(34) This tea is too hot to (\*/hpru/) drink.
(35) It was dark by the time we got to (\*/gpru/) the farm.

Divergence also shows in that the contracted form (HAVE) *gotta* can only replace the string (HAVE) *got to* when it occurs in its grammaticalized function:

(36) a. We ('ve) got to go home
b. We ('ve) gotta go home
(37) a. We got to know him in 1998
b. \* We gotta know him in 1998
(38) a. I'm giving all I've got to help the poor
b. \* I'm giving all I've gotta help the poor

Here, (36) shows the grammaticalized construction (HAVE) *got to*, denoting obligation (a.), and its acceptable contracted form (b.). In (37), on the other hand, *got* is the past tense form of *get*, and therefore contraction is not permissible; likewise, in (38) it is part of possessive HAVE *got*, and again is only valid in non-reduced form.

A similar restriction on the contraction of WANT *to* to *wanna* has already been discussed (examples 26-28). A further case in point of contraction only applying to the grammaticalized form is when the non-modal transitive verb WANT is adjacent to a purposive *to*; here, too, *wanna* is ruled out (39).

(39) a. To complete my collection, I want exactly that hat.b. That is exactly the hat that I want to complete my collection.c. \* That is exactly the hat that I wanna complete my collection.

Thus, the grammaticalized constructions BE *going to*, (HAVE) *got to* and WANT *to* diverge from their lexical sources by their capacity to undergo this reduction.<sup>15</sup>

<sup>&</sup>lt;sup>15</sup> On a side note, Fitzmaurice (2000) takes *to*-contraction (as in the cases of *gonna/gotta/wanna*) as part of a de-grammaticalization of the infinitive marker *to* in American English: "*to* is allowed to coalesce with selected verbs to create periphrastic auxiliaries, thus becoming part of the grammaticalization process of another construction, by virtue of its release from the infinitive construction" (173).
# 2.4. Emancipation

Meanwhile, the reduced forms *gonna*, *gotta* and *wanna* have begun to take on a life of their own. This is arguably due to two frequency effects. The first is an effect of string frequency. Krug (1998b) considers string frequency "the most important motivation in phonological and morphological changes that result in the cliticization and merger of two adjacent items" (309). Here, the frequent strings BE *going to*, HAVE *got to* and WANT *to* start to be perceived as chunks and processed as single units rather than by their individual elements (cf. Bybee 2006). That is, the sequences become stored items (see Sosa & MacFarlane (2002) for experimental evidence). This chunking brings about the forms' phonetic reduction. Then, as this reducing effect unfolds, the reduced forms increase in frequency, to a point where "gonna", "gotta" and "wanna" are common pronunciations in the flow of speech, so that these particular forms now also become entrenched.

These pronunciation variants are then transported into writing to represent spoken language ("eye dialect phrases" as Lawler (2002) calls them). The result is that *gonna*, *gotta* and *wanna* represent standard citation forms to be used in (informal) writing<sup>16</sup>. They are listed as words in almost every current dictionary of English.

In spite of this, *gonna/gotta/wanna* are still confined to representations of spoken or informal language, and dictionary entries suggest that their status is rather one of second-class words, referring back to the source forms and describing them as "contraction" (Chambers Dictionary 2004, Collins English Dictionary 1991), "short form" (Longman Dictionary of Contemporary English 2003), or "pronunciation variant" (Oxford English Dictionary, The New Partridge Dictionary of Slang 2006). Moreover, they are labeled as "informal" (Longman), "colloq[uial]" (Chambers), "colloq. or vulgar" (Oxford), or "Slang" (Collins). The Longman Dictionary even warns that *gotta* is a form "which most people think is incorrect"<sup>17</sup>. Ironically, the most American of dictionaries, Webster's, has only recently included these items – the third edition of Webster's New World College Dictionary (1996) contains no entries for any of them, while the fourth edition (2004) lists them as "phonetic spelling".

This raises the question of what status *gonna*, *gotta* and *wanna* really have. Are they merely a common way of pronouncing *going to*, *got to*, or *want to*? That is, would a speaker of English still "think" *going to* while saying *gonna*? Or are

<sup>&</sup>lt;sup>16</sup> But note that The New Partridge Dictionary of Slang (2006) also lists *gunna*, *gunner*, and *gonner* as alternative spellings for *gonna*.

<sup>&</sup>lt;sup>17</sup> One would assume that most people think that "correct" is what they find in the dictionary...

they words in their own right, independent of their source forms? These two possible states may be illustrated in terms of representation, as in Figure 2-2:



Figure 2-2: Two representation models of gonna

In Figure 2-2, (I.) shows a state in which *gonna* is a phonological variant of *going to*. Here, the contraction "represents" the full form, rather than a meaning. In contrast, (II.) depicts *gonna* as being linked directly to a meaning, that is, it is an independent element. The cognitive representation of *gonna* in (II.) is thus different from that of *gonna* in (I.). The 'future' meanings of *going to* and *gonna* may be equivalent semantically (though there is the possibility of a semantic divergence – recall the aspects of modality discussed above (2.1.2.)), but if pragmatic import (e.g. 'colloquial style', Boas 2004) is taken into account, the difference is evident.<sup>18</sup>

When presented with the form *gonna* (or *gotta*, *wanna*) in actual language use, there is no straightforward way of assessing whether it conforms to model (I.) or (II.). However, a detailed analysis of usage data can yield meaningful indications regarding the tendencies in the conceptualization of these contractions. In particular, I hypothesize that there is an ongoing process by which the contracted forms are gradually gaining independence (i.e. moving from stage (I.) to stage (II.)). This process, here termed *emancipation*, is first and foremost an effect of the contracted form's frequency in spoken language and its consequential entrenchment in the language user's memory. The 'emancipating effect' of frequency is the fundamental hypothesis of the present work.

<sup>&</sup>lt;sup>18</sup> On a similar note, Schmidtke (2009) suggests a distinction in acquisition in that a child learns not only "that the two constructions can potentially be used interchangeably, but also that he may conceive of *gonna* as the more appropriate variant in metaphorical contexts." (533)

In the linguistic literature, the term 'emancipation' was brought up by John Haiman (1993, 1994). In these works, it receives a very broad definition, such that any use of a linguistic (or other) sign or behavior beyond its original pragmatic motivation is considered an instance of emancipation. Thus, since language is a system of signs, linguistic structures in general are products of emancipation: "Emancipation is what creates grammatical categories" (Haiman 1993: 303). This concept is closely linked to 'ritualization', which implies frequent use, and especially use in an increasing variety of situations: "Ritual (or 'traditional') actions [...] are motivated by the past. We do things not because it is practical to do them in this way, but because 'that is how we have always done them'" (ibid.). To use language is, for the most part, to carry out rituals.

The proposition that "ritualization *emancipates* forms from whatever motivation they once had" (Haiman 1994: 1633, emphasis in original) serves as a basis for the 'emancipating effect' proposed here for contracted forms. For example, the original motivation of *gonna* is the phonetic reduction of *going to*. This motivation is lost as *gonna* becomes a conventional modal expression. Once *gonna* is no longer a reduced pronunciation variant of *going to*, it becomes a lexical item in its own right, with its own cognitive representation. We can thus formulate the endpoint of the emancipation process as follows:

The new form is emancipated when it is used and perceived as an independent item, without conceptual recourse to its source form.

Emancipation, as construed by Haiman, is emancipation of a form from its original motivation. It seems appropriate in the present context to say that the contractions become emancipated from their source forms, that is, an emancipation of a form from its 'parent' form. This may be read as shorthand for 'emancipation from the original motivation of phonetically reducing a frequent sequence'.

This emancipation approach can be illustrated by adopting an example from Bybee (2003):

"In emancipation, instrumental actions are disassociated from their original motivation and are free to take on a communicative function instead. The military salute derives from the more instrumental gesture used in the Middle Ages when knights in armor greeted one another. They raised the visor of their helmet to show their faces as an indication of a peaceful greeting. The armor is gone, the visor is gone, but a reduced form of the gesture remains, though without its instrumental function. It no longer raises the visor, but it has been imbued instead with the function of communicating respect for the military hierarchy." (Bybee 2003: 9)

Taken as an allegory, this example contains all the crucial elements of the emancipation of gonna. To begin with, the intention of peaceful greeting is inferred from the action of raising the visor to show one's face. This intention then becomes the main purpose of the action – raising the visor now is a gesture of greeting. This is analogous to the grammaticalization of the BE going to V construction, in that the 'future' reading starts out as an inference and becomes the core meaning of the construction (see above). This is an important step, as it shows how the connection between the concrete/literal and the abstract is still transparent, but no longer necessary. It is easy to understand the concrete action of opening the visor as a greeting (just as, given a favorable context, the literal expression of motion in space is easily understood as future reference), but a greeting does not require a helmet (just as future reference does not require motion in space). This frees the gesture from its original context and opens the door to its reduction. The salute as a reduced greeting gesture is, of course, analogous to the reduced form gonna. "The armor is gone, the visor is gone" the morphological structure is gone, the lexeme go is indiscernible - but the gesture (the reduced form) lives on and is imbued with a meaning.

Once the connection to the full form is lost, the sign /gpnə/ to mark future reference appears completely arbitrary. This harks back to Haiman's (1993) argument that the arbitrariness of the linguistic sign follows from its emancipation, as arbitrariness emerges when the initial motivation of the form is lost. Motivation is what marks the difference between /gpnə/ as a reduced form and *gonna* as a lexicalized form. The former is motivated by articulatory economy, the latter is arbitrary.

It is not clear at this point what the completion of the emancipation process will mean with respect to the variation of the full and contracted variant. It is possible that someday *gonna* will have completely replaced the semi-modal *going to*. The string *going to* would then be understood unambiguously as referring to movement in space, while *gonna* would be the generally accepted 'future' marker. But it is also conceivable that *gonna* will remain confined to informal registers and the representation of spoken language. (These scenarios of course apply to *gotta* and *wanna* in the same way.)

Assuming the full emancipation of the contractions, and thus their independent conceptualization, *gonna* and *going to* must be two different ways of expressing 'future', *gotta* and (HAVE) *got to* must be two different ways of expressing 'obligation', and *wanna* and *want to* two different ways of expressing 'volition'. As such, the contractions and corresponding full forms

compete for the same meaning. During the process of emancipation, this state of competition is not so evident. However, even when "gonna" is merely an alternative pronunciation of *going to*, they are in <u>variation</u>. With the contracted form's emancipation, this variation changes from phonological to lexical. Given these assumptions, the full and contracted forms can be studied as variants.

### 2.4.1. Emancipation From a Paradigm (And a Precedent Case)

It has already been mentioned in passing that *gonna*, *gotta* and *wanna* are only the most prominent representatives of a whole group of (more or less) modallike verbs with a *to*-infinitive complement that can undergo the same kind of contraction. This *to*-contraction can be abstracted as follows:

Vmodal [to Vinf] => [Vmodal /ə/] Vinf

That is, the erstwhile infinitive marker *to* becomes cliticized to the modal verb and reduced to schwa. The following items are included in the paradigm of *to*-contraction (the list is based on Pullum 1997 and Bolinger 1981)<sup>19</sup>:

```
going to => "gonna"
got to => "gotta"
want to => "wanna"
ought to => "oughta"
used to => "usta"
need to => "needa"
trying to => "tryna"
supposed to => "sposta"
```

This conforms to what Croft & Cruse call a "product-oriented schema" (2004: 317), producing a set of phonologically analogous forms. Clearly, these are not all equally common, so we might conjecture that the more conventional items *gonna/gotta/wanna* serve as the prototypes for the other forms, which follow in analogy.

Viewed from this perspective, this looks like a stable, semi-productive schema of morpho-phonological reduction. What, then, is the benefit of postulating an emancipation from the source form for some of the reduced forms? Is *gonna* not merely a somewhat more conventionalized instance of *to*-contraction? This can be answered by considering another contraction paradigm, the *ne*-contraction of Old English negatives, which is reported to include, among others, the following items (Traugott 1972, Kim 2003).

<sup>&</sup>lt;sup>19</sup> Pullum and Bolinger do not mention "needa" and "tryna" – these are noted, e.g., by Krug (2000: 211), Aoun & Lightfoot (1984), and Andrews (1978), respectively.

ne [X] => [ne-X] (X is a verb or adverb beginning with a vowel or glide)
ne habb- => nabb- ('have not')
ne will- => nyll- ('want not')
ne wit- => nyt- ('know not')
ne ænig => nænig ('not any')
ne awiht => nawiht ('not at all')
ne an => nan ('not one')
ne æfre => næfre ('not ever')
ne ægber => nægber ('neither')

Here, the negative marker *ne* attaches to the following item and is reduced to *n*-. This contraction scheme, as it were, was productive in Old English, but disappeared when the negation pattern changed and pre-verbal *ne* was replaced by post-verbal (now post-auxiliary)  $not^{20}$  (Mazzon 2004: 6f). Nevertheless, the last three items on the list survived and now exist as independent words in English: *none, never, neither*. The inevitable conclusion is that these forms had been emancipated, both from their individual source forms and from the schema of *ne*-contraction. By the time the paradigm faltered, they were already entrenched, and hence independent, i.e. they were used and perceived as words in their own right. The other *ne*-contractions, by contrast, disappeared when *ne* exited the language. Thus, we might say that emancipation is not simply a matter of linguistic description, but, in the long run, is a matter of survival.

### 2.5. Contractions versus Full Forms

One might ask, if the string *going to* is so entrenched that it is processed as a single unit and accessed non-compositionally, then what difference does it make whether it is realized as *going to* or *gonna*? The answer follows from the discussion thus far. It makes a difference, firstly, in the status of the contraction: *gonna* is not the only possible way to reduce *going to*, but it has become an established variant that can be recognized in isolation. Secondly, although *going to* has lost its compositionality, it has not (at least not entirely) lost its analyzability: the internal morphological structure [go]+[-ing]+[to] is still overtly present. In contrast, *gonna* has no such overt internal structure.

<sup>&</sup>lt;sup>20</sup> *not* is itself the outcome of the *ne*-contraction *nawiht* originally used as a reinforcer of negation (Mazzon 2004, Jespersen 1917).

Likewise, the original motion sense of 'go' is still transparent in *going to* but not *gonna*<sup>21</sup>. These differences are presented in this section.

Most studies of English modals and semi-modals do not distinguish between contracted and full forms, that is, they count instances of *gonna* as tokens of BE *going to* and instances of *gotta* as *got to* (e.g. Collins 2009, Leech 2003). Others, however, have also looked at the usage frequencies of the contractions (Berglund 2000, Krug 2000, Berglund & Williams 2007)<sup>22</sup>. For example, in his data from the British National Corpus, Krug (2000) has found a strong increase of contractions as opposed to full forms in apparent time (Figure 2-3), clearly indicating that change is in progress.



Figure 2-3: Use of contracted semi-modals in the BNC (from Krug 2000:175)

These rising contraction rates show that *gonna*, *gotta* and *wanna* are increasingly replacing the full forms in spoken English.<sup>23</sup>

Assuming, for the moment, the full forms and the contractions to be entirely distinct items, we can then sketch out their respective differences. For what distinguishes *gonna* from *going to*, *gotta* from (HAVE) *got to*, and *wanna* from *want to* is not only phonological form but also some morphosyntactic properties: *going to* is an instance of a more general periphrastic construction

<sup>&</sup>lt;sup>21</sup> This difference has been reported to also have an influence on children's acquisition of the two forms, see Schmidtke (2009).

<sup>&</sup>lt;sup>22</sup> Some also conflate *got to* and *gotta* but distinguish HAVE *got to/gotta* from Ø *got to/gotta* (Jankowski 2004, Tagliamonte 2004, Tagliamonte & D'Arcy 2007).

<sup>&</sup>lt;sup>23</sup> We will see in the next chapters, though, that the story is not one of simple replacement.

(BE V-*ing*), and consists of three morphemes, whereas *gonna* is a single unit with no internal structure; *going to* employs a *to*-infinitive for the following verb, while *gonna* is followed by a bare infinitive; *going to* is potentially ambiguous, with an alternative movement reading that *gonna* lacks; finally, *going to* syntactically requires the auxiliary BE, for which there is no structural need with *gonna*. These differences are summarized in Table 2-1.

going to	gonna
3 morphemes	1 morpheme
periphrastic construction	single item
to-infinitive	bare infinitive
potentially ambiguous	unambiguous
Syntax requires auxiliary BE	no structural need for auxiliary BE

Table 2-1: The different morphosyntactic properties of going to and gonna

It should be noted that, although there is arguably no structural need for it, *gonna* seems to generally retain the auxiliary BE. Labov (1969) reports its frequent omission in non-standard African American English, but this, even forty years later, has not transferred into the more 'standard' sociolects. The only indispensable function of BE with *gonna* is to mark tense (*is gonna* versus *was gonna*), and it is possible that BE is retained for that reason. It seems more likely, however, that in this case, form simply does not follow function; the auxiliary BE is there because it has always been there, and is too entrenched to be removed.

These differences are largely analogous to those between *got to* and *gotta*. However, a complication arises in that ellipsis of the auxiliary HAVE is common with both variants, though Krug (1998a) reports that the tendency is much stronger with *gotta* – this will be confirmed and discussed in the research presented in the following chapters. The morphosyntactic properties of *got to* and *gotta* are summarized in Table 2-2.

got to	gotta
2 morphemes	1 morpheme
present perfect construction	single item
to-infinitive	bare infinitive
homonymous with other constructions	no homonymy
slight tendency to auxiliary omission	strong tendency to auxiliary omission

Table 2-2: The different morphosyntactic properties of got to and gotta

The constructions WANT *to* and *wanna* can be distinguished along very similar lines. The opposition of periphrastic construction versus single item does not apply here, but the constructional difference is visible in the fact that *wanna* does not take any inflection markers. Table 2-3 presents the respective morphosyntactic properties.

want to	wanna
2 morphemes	1 morpheme
to-infinitive	bare infinitive
homonymy with transitive WANT	no homonymy
inflects for 3rd pers. sing. and past tense	no inflection (and no past tense)

Table 2-3: The different morphosyntactic properties of want to and wanna

It is evident from this that a replacement of *going to* by *gonna*, of *got to* by *gotta*, and of *want to* by *wanna* represents a change in both phonological and morphosyntactic form. What I have shown here are categorial differences that apply if the full forms are viewed as fully analytic, and the contractions as fully independent items. The aim of this was to show that as soon as emancipation is set in motion, there is more at stake than pronunciation. Still, the following chapters examine the contractions as emancipating forms, not as emancipated ones.

### 2.5.1. Lexical Access

In stating that an emancipating form becomes a 'word' in its own right, the question inevitably arises what a 'word' really is. However, the concept of a word seems in general to be defined by conventions rather than strict criteria (cf. Trask 2004), and thus does not lend itself to useful application in the task of describing emancipation. It would appear to make more sense to posit that the new 'word' represents a separate entry in the mental lexicon. But, the idea of a mental lexicon as a neat, dictionary-like list of memorized forms linked to corresponding meanings has been called into question. Jackendoff (2002), for instance, proposes a "much less rigid divide than usual [i.e. than previously assumed in formal theories] between lexical items and rules of grammar" (23), and Evans (2006) denies a simple link between form and meaning, submitting that "meaning is not a property of words, but rather of the utterance, that is, a function of situated use. Words, as such, don't have meanings" (527); finally, Elman (2009) even proposes a system of "lexical knowledge without a lexicon" (1).

The nature or existence of a mental lexicon is not the central concern of this discussion. I will therefore only make a few basic (and largely uncontroversial) assumptions in this respect: that forms are stored as representing lexical concepts<sup>24</sup>, and that forms may vary in their realization – deviant realizations (e.g. reduction) access the lexical concept through the stored form. This is incorporated in the representational model above (Figure 2-2).

Beyond these basic assumptions about the nature of the 'word', models of lexical access and encoding are of relevance to the idea of emancipation presented here. Such models, e.g. the 'distributed cohort model' (Gaskell & Marslen-Wilson 1997) and the TRACE model (McClelland & Elman 1986), involve the notion of co-activation and competition (or interference) of similar stored lexical items. This means that "input in the form of a spoken word activates a set of [phonetically] similar items in memory" (Jusczyk & Luce 2002: 13), which compete for selection (for instance, the input "plug" activates both *plug* and *plus*, but *plug* will be selected upon hearing the final /g/). According to these models, *gotta* will always co-activate *got to*, even when fully emancipated. However, at the stage of full emancipation the input "gotta" will lead to activation of both items, *gotta* and *got to*, and *gotta* will be selected since it better matches the input; whereas at the stage of reduction "gotta" cannot be directly linked to a concept, but will be matched with its meaning via the collocation *got to*. Thus, emancipation is reflected in speech perception.

<sup>&</sup>lt;sup>24</sup> Basically, this constitutes a classical form-meaning pair but considers Evans' (2006) distinction between 'meaning' and 'lexical concept' – the latter is defined by "the semantic units conventionally associated with linguistic forms" (491).

In speech production, we might say that the status of the contraction is a matter of the level of encoding at which it is retrieved. Models of speech production (Dell 1986, Levelt et al. 1999) assume that encoding a message (that is, producing words) proceeds through several steps. A speaker will 'select' a word or sequence of words that matches the concept ('message') they want to convey; this word is then encoded according to its morphological and phonological properties ('phonological encoding'), and finally articulated ('phonetic encoding') (cf. Levelt 1999). Figure 2-4 shows the main path of this word production process, from the lexical level through the morphological, phonological, and phonetic stages. For a detailed description, see Levelt et al. (1999).



Fig. 2-4: Outline of processing stages in word production (adapted from Levelt et al. 1999: 3)

Assuming that the form [gprə] ("gotta") is produced, the question is at what processing stage this form has emerged. If it is a result of "lazy" pronunciation, then it is only at the stage of articulation that the selected item *got to* turns into the sound sequence [gprə]. If it is used as a pronunciation variant of *got to*, the form "gotta" is selected at the stage of phonological encoding, i.e. the speaker deliberately encodes *got to* as /gpdə/, as this variant is available and stored in

memory. If, however, *gotta* is used as a word in its own right, the relevant stage is lexical selection: *gotta* is chosen as the 'right' word for the particular communicative purpose, and is thus favored over similar items such as *got to* or HAVE *to*.

In terms of word production, the emancipation of a reduced form from its source form is therefore a shift from lower to higher levels of encoding (in Fig. 2-4), or from later to earlier processing stages.

# 2.6. What Kind of Change?

As previously discussed, the source forms of *gonna*, *gotta* and *wanna* are products of grammaticalization. Their emergence as modal markers is therefore a continuation of this grammaticalization process, and partly an instance of the reducing effect ("partly" because the reducing effect does not subsume the emancipation of the reduced form).

As for grammaticalization, Givón (1979: 209) suggests a cline that retraces the changing status of a grammaticalizing item:

discourse > syntax > morphology > morphophonemics > zero

On this cline, *to*-contraction may be said to cover the part from 'syntax' (*to* as a free infinitive marker) to 'morphophonemics' (*to* cliticized to the modal verb and phonetically reduced). However, the proposed process of emancipation of the resulting form is not represented on this cline; it rather veers into lexicalization.

### 2.6.1. Emancipation in the context of Univerbation and Lexicalization

Taken together, reduction and emancipation constitute the creation of a new form-meaning pair by changing the <u>form</u> of a pre-existing item, while the meaning remains largely stable. In the case of *gonna/gotta/wanna* this process may be subsumed under the concept of *univerbation*<sup>25</sup>, i.e. "the process whereby independent, usually monomorphemic, words are formed from more complex constructions" (Traugott 1994: 1485). As cases of univerbation they are, of course, not unprecedented. Many function words have complex constructions as their historical source forms. The case of *never* 

<sup>&</sup>lt;sup>25</sup> The term *unification* is sometimes used for the same concept (Žirmunskij 1966, Lessau 1994). However, *univerbation* is more commonly used, and, to my mind, more descriptive.

and neither has already been mentioned; other examples include maybe (from It *may be [that]*) and *perhaps (per haps, 'by chances')*, dating from the fifteenth century, and, going further back in history, today (OE to dæg), not (a shortening of naught, from nā wiht, 'no thing/creature'), and between (from OE betweonum, 'by two each'). A more recent case is *alright*, attested from the late nineteenth century onwards (Cassell Dictionary of Word Histories 1999, Barnhart Dictionary of Etymology 1988, Oxford Dictionary of English Etymology 1986). Although a speaker of Present Day English might still be able to guess the source forms of some of these words, they clearly are conceptualized independently and without recourse to the source form – they are fully emancipated, and their univerbation is completed. Quite possibly, gonna, gotta and wanna are on a similar track, and through their examination we can hone in on the as yet relatively unexamined process of emancipation - in the narrow sense as defined in 2.4. - as a component of the larger process of univerbation. To elucidate this point, I will now outline a model of univerbation that includes the role of emancipation.

It should first be noted that, although the term appears to be self-explanatory, there seems to be some definitional uncertainty regarding univerbation. Lehmann (1995) and Žirmunskij (1966) use the term univerbation, or unification, respectively, without distinguishing between a diachronic process and a synchronic morphological mechanism that "is possible everywhere and at any time" (Lehmann 1995: 152). Lehmann's example of German prepositions being fused to determiners (*an dem -> am*) is of the latter kind (ibid.: 83f). Brinton & Traugott (2005: 48), on the other hand, list six definitions which all describe univerbation as a process, thus implying diachronicity. Most definitions also include the outcome of the process, such as "independent, usually monomorphemic, words" (Traugott 1994: 1485, see above), and "a full-fledged lexical item" (Moreno Cabrera 1998: 214).

Taking this interpretation as a diachronic process, univerbation can be described as beginning with a collocation of two (or more) separate items, and ending with a single item: a word whose etymological source is that collocation. Univerbation thus covers the entire distance from, e.g. BE *going to*  $V_{inf}$  as a grammaticalized construction to *gonna* as a monomorphemic modal word.

Figure 2-5 illustrates how *univerbation* is a combination of *entrenchment*, *reduction*, and *emancipation*. The arrows in the diagram represent the time axis.

The grammaticalized combination of the progressive form of GO and a *to*infinitive produces the invariant sequence *going to*; this sequence becomes *entrenched* and consequently will be processed as a single chunk (cf. Bybee 2010: ch.3, and see above). According to Blumenthal-Dramé's (2012) operationalization of entrenchment, "[h]igher token frequencies will correlate with a gradual increase in processing ease [...]. At some point, this process will lead to a new, holistic representation" (104). Entrenchment thus comprises a structural reanalysis from compositional to holistic, through which membership in a more general construction is backgrounded. In this case, BE *going to* V<sub>inf</sub> is reanalyzed from an instance of 'verb + *to*-infinitive' to the idiosyncratic '*going to* + bare infinitive'. This step in the process corresponds to what has been called "coalescence" (Lehmann 1995: 148) or "fusion" (Brinton & Traugott 2005: 47ff; see also Rostila 2006).

The reanalysis paves the way for phonological erosion, or *reduction*, as the morphemes *-ing* and *to* have lost their function. Reduction here is understood to pertain solely to the phonological level. It is also considered a process on a time line, which means that an increase in the frequency of on-line phonetic reduction affects the sequences' phonological representation, such that at the end of the reduction process, [gpnə] has become a conventional way of pronouncing *going to*. In general, phonological reduction appears to be a typical but not a necessary feature of univerbation. In at least one of the examples provided above, *perhaps*, no conventionalization of a reduced variant has taken place (at least not yet). Therefore, we can state that reduction follows from entrenchment, but is a separate process: "Erosion is another language change, which has to be innovated - speakers produce an eroded version of the grammaticalized construction - and then propagated through the speech community" (Croft 2010: 6).

*Emancipation*, then, is the stage in univerbation in which conceptual change prompts the reduced form to become an independent item. This is what the present work deals with.

The entire process of entrenchment, reduction and emancipation is comprised in the term *univerbation*. This is to be distinguished from *contraction*, which refers not to a process but to a form in which two (or more) elements are fused together. Hence it is the contraction that undergoes emancipation.

The arrows in Figure 2-5 correspond to progress through time, describing the diachronic process – note, though, that the stages merge and overlap, rahter than following one another in neat succession.



Figure 2-5: Universation as entrenchment + reduction + emancipation

Cases of universation do not feature prominently in historical linguistic research. In grammaticalization studies, the focus is usually on changes of meaning rather than form. Univerbation has predominantly been regarded as a type of lexicalization, as it creates a new lexical item, that is, in Brinton & Traugott's (2005: 89f) terms, a form is adopted into the lexicon. However, the univerbations of interest here are products of grammaticalization (see 2.2. and 2.3.). This leaves us with two definitorial options: gonna/gotta/wanna either constitute a lexicalization within the scope of a grammaticalization process, or they are instances of grammaticalization, though employing a mechanism that occurs in the same way in lexicalization. Brinton & Traugott (2005) suggest the latter option, defining lexicalization and grammaticalization by their result: cases "which yield functional, closed class items [...] may be considered grammaticalization", while those "that result in an open class item must be seen as lexicalization" (100). However, since the processes involved in the two types of change are largely the same ("a decrease in formal or semantic compositionality and an increase in fusion", ibid.: 101), this distinction seems rather arbitrary.<sup>26</sup> It is particularly problematic for the focus on universation in the cases at hand, as their outcomes are grammatical markers, but any implication that gonna is somehow 'more grammatical' than going to cannot be maintained.

It therefore appears more useful to adopt a view that focuses on the process, and that allows for the interactive coexistence of lexicalization and grammaticalization. This stance is taken by Wischer (2000), Himmelmann (2004), and Lightfoot (2005). Lightfoot, for instance, warns of "the false notion that grammaticalization means no lexicalization and vice versa" (2005: 606). Wischer (2000) sees the two processes as operating on different levels: while grammaticalization is characterized by semantic bleaching, lexicalization "can

<sup>&</sup>lt;sup>26</sup> This point is also stressed by Campbell (2001), not just with respect to lexicalization, but to the place of grammaticalization within language change in general, leading him to conclude that "grammaticalization does not have any independent status of its own, but rather is derivative of other kinds of language change" (116).

be related to desyntacticization, in the sense of a syntagmatic structure losing its syntactic transparency and merging into one single lexical item" (364). In a slight variation, Moreno Cabrera (1998) posits that "grammaticalization processes [...] feed lexicalization processes" (223). Based on these accounts, we can define the univerbations of *gonna/gotta/wanna* as processes of lexicalization (loss of syntactic/morphological transparency), and state that the grammaticalizations of BE *going to* / HAVE *got to* / WANT *to* have fed these lexicalizations by producing the phonologically reduced variants. Or, as a general statement: Univerbation is a type of lexicalization process that may occur as a consequence of grammaticalization.

#### 2.7. Reanalysis, Gradualness, and Frequency

An important concept in grammaticalization (as well as lexicalization) is that of reanalysis: at some point the grammaticalizing item is no longer analyzed by its lexical content but by its grammatical function. Reanalysis is defined by Langacker (1977) as "change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation" (58). Hopper & Traugott (1993) name fusion as a particular type of reanalysis "very frequently found in grammaticalization" (40) - for example, as previously noted, the fusion of the (erstwhile) infinitive marker to with the preceding modal verb is a reanalysis that sets the stage for the sequence's reduction to gonna/gotta/wanna. The emancipation of these forms, however, involves an additional reanalysis, taking gonna/gotta/wanna from phonologically reduced pronunciation variants of going to/got to/want to) to separate lexical items (i.e. from stage I to stage II in Figure 2-2). This reanalysis of a contraction indeed comes with no "modifications of its surface manifestation" (Langacker 1977: 58), but rather constitutes a shift in the form's cognitive representation.

In a strict sense, reanalysis is an abrupt change; if an item can only belong to one category at a time (e.g. a lexical or a functional category), then, in any given instance, reanalysis has either happened or not. Yet, it is only in theory that reanalysis can be uncoupled from gradualness. The observable facts of change are usually gradual (see, e.g., de Smet 2013). A grammaticalizing item's new function evolves by small steps, through inference of new aspects of meaning (Traugott & Dasher 2002: 34ff, and see the examples in 2.2.), and these steps are not actualized at once, but gradually spread through the speech community (Labov 1972). Lichtenberk (1991) states that "[w]hile categorial reanalysis is abrupt, its entry into the language and its actualization are gradual" (39). More recently, it has been suggested that there is in fact no such necessity for abruptness if we remove the assumption that grammatical categories are strictly distinct, and rather consider them to be gradient as well (Haspelmath 1998, Denison 2001, Bybee 2010) – Traugott (2006) specifically refers to modality as "a gradient notion, semantically as well as morphosyntactically" (128). In morphology, Hay & Baayen (2005) argue that morphemes should not be seen as fixed, stored items but as gradient entities, in the sense that their presence in processing depends on the strength of paradigmatic analogy (that is, the occurrence of the same form as part of other words). These approaches reconcile the discrepancy between theoretical assumptions and empirical data, and allow for a concept of gradual reanalysis.

As described above, the cases examined in this book involve the secondstage reanalysis from "gonna" as a reduced form of going to to gonna as an independent item, and likewise for gotta and wanna. In the search for empirical evidence, the idea of gradual actualization is adopted. Lexical emancipation, then, is a gradual process, and also a gradient notion when viewed from the perspective of co-activation and lexical selection (Gaskell & Marslen-Wilson 1997, McClelland & Elman 1986; see 2.5.1.), in that the degree of emancipation from the source form is contingent on the degree to which the source form is co-activated when the new form is encountered (for example, how strong the activation of going to is on hearing "gonna"). That is, the contraction's tie to the full form can be more or less strong. Lexical emancipation, then, is a process constituting a gradual shift along this continuum such that these ties become weaker as the representation of the contracted form becomes stronger through repeated exposure and usage, thus creating greater direct association between the contraction and its meaning (i.e. between gonna and 'future').

Gradual actualization, in the sense of an innovation spreading through a speech community as well as through linguistic contexts of use, is also necessarily closely tied to frequency. The frequency with which a structure is used is crucial to its role in a grammar as it is represented in the language users' minds, because usage events "are the basis on which a speaker's linguistic system is formed, i.e. they are experience from which the system itself is initially abstracted" (Kemmer & Barlow 2000: viii-ix). Specifically, it is the frequent use of the contractions in spoken language that drives their emancipation and makes reanalysis possible.

The role of frequency has been touched upon several times in this chapter thus far. I will now state a few assumptions concerning the specific import of frequency to the development of the contracted semi-modals. This is a preview of the more elaborate frequency-based model of the emancipation process that is presented in chapter 6.

Firstly, lexical emancipation is considered a frequency effect. More specifically, it is seen initially as an effect of the emancipating form's overall frequency of use in spoken language (i.e. its absolute frequency), as frequent occurrence is what entrenches the form in memory. Thus, a reduced form's absolute frequency is the trigger for its emancipation. Secondly, the frequency of the emancipating form relative to the source form (the contraction rate, as in Figure 2-3) is taken as an indicator of ongoing change as emancipation progresses; if the full form and the contraction compete for activation, then the more often the contraction is used instead of the full form, the more its representation is strengthened ("instead of" here translating to "relative to" in empirical data).

These absolute and relative frequencies are, of course, intertwined: If the (absolute) usage frequency of the contracted form rises while that of the full form remains stable, the observed rate of contraction (the relative frequency) will also increase. In turn, when the contraction gains a stronger presence in the language user's memory, it is used more readily, thus increasing its absolute frequency in discourse.

Furthermore, contraction itself is frequency-dependent. The frequency of a collocation determines its propensity to undergo contraction: "We process collocates faster and we are more inclined therefore to identify them as units" (Ellis et al. 2009: 108; cf. Krug 1998b). Examining a different case of contraction - that of *will* with a preceding pronoun subject (e.g. *I'll*) - Bybee (2010) comes to the conclusion "that the contraction has extended from the more frequent pronouns to the less frequent ones" (137). As *gonna*, *gotta* and *wanna* evidently share membership in the same paradigm (see 2.4.1.), it can be surmised that here too, contraction extends from the more frequent instances to the less frequent ones. Thus, *gonna*, as the most frequent member, is expected to be the most advanced in its emancipation.

One caveat is the possibility that these emergence of the contractions is a consequence of the source forms' modal functions rather than "pure" frequency. As grammaticalizing forms generally also become more frequent, this is not easily resolved. We have already seen that it is only the grammaticalized uses of *going to, got to* and *want to* that may be systematically contracted. Similarly, Dankel (to appear) shows that in Andean Spanish, the string *dice que* ('s/he says that') undergoes univerbation to *dizque* only when used as an abstract evidentiality marker (with the meaning 'allegedly'). There clearly is a link between non-compositional semantics and the chunking of morphosyntactic structures. This, it seems, defines the difference between contractions (or 'cliticizations', cf. Krug 1998b) such as *I'll* and *can't* and the type represented

by *gonna*, *gotta* and *wanna*; the former retain a compositional meaning ('I' + FUTURE; 'can' + NEGATIVE), whereas the latter refer to single concepts ('future', 'obligation', volition'). The effect of frequency applies generally here, since high collocation frequency leads to contraction in all these cases. The effect of semantics, on the other hand, is more specific; it promotes only the emancipation of the semi-modal contractions. Moreover, Krug's (2000) notion that "similarity in form [...] reflects functional and conceptual closeness" (212) now falls into place. It is collocation frequency that drives contraction; the specific forms the contractions take on as they become conventional are influenced by their "conceptual closeness", so that the outcome is a set of similar forms.

## 2.8. Research Approach

In proposing a process of lexical emancipation, I hypothesize that *gonna/gotta/ wanna* represent an ongoing change in the English language, and that this change comes through variation (2.1.1.). Therefore, in the following chapters, I examine the full and contracted semi-modals as variants, that is, I investigate the variation between *going to* and *gonna*, *got to* and *gotta*, and *want to* and *wanna*. In chapter 3, the spoken forms *needa* (from *need to*) and *tryna* (from *trying to*) are also considered for comparison. The observed patterns of variation yield information about the status of the contractions; change in the patterns of variation reveals change in the new forms' status.

As I have pointed out (2.1.2.), in the changes concerning modal expressions in English, American English is generally seen as the most progressive of the standard varieties (Collins 2009, Mair & Leech 2006, Jankowski 2004, Leech 2003). The contracted forms are also taken to be "American innovations" (Mair 2006: 95), and to enjoy a wider acceptance in American than in British English (Pullum 1997). For this reason, the case studies presented here focus on usage in American English. A comparison with British English and other varieties would certainly be useful but is not within the scope of the present work. Furthermore, since the contractions are essentially a vernacular phenomenon, they need to be examined in data that represents spoken language.

To study this case of recent and on-going change in spoken (American) English, then, it would be ideal to have a balanced set of long-term diachronic spoken data. However, this ideal data set does not exist. Having to revert to the lessthan-ideal data that does exist, I will largely use the Santa Barbara Corpus of Spoken English (SBC, DuBois et al. 2000-2005), a synchronic collection of speech recordings that comes with time-aligned transcripts and speaker details (chapter 3), and the Corpus of Historical American English (COHA, Davies 2010), a large and balanced diachronic corpus of written American English (chapter 4). Combining the findings from these corpora comes as close as possible to what an ideal yet utopian diachronic spoken corpus might yield. Additionally, a psycholinguistic experiment on the perception of *gonna* and *gotta* is presented in chapter 5. The studies in the following chapters focus on variation of modal expressions. Thus, the various contexts excluding contraction (as described in sections 2.2 and 2.3 above) are also excluded from the data.

The following three chapters present empirical research on the status and development of *gonna*, *gotta* and *wanna*. They are organized as follows:

Chapter 3 examines the variations between full and contracted forms in contemporary spoken American English (largely on the basis of the SBC), employing multivariate statistical modeling, and exploring changes in apparent time. As the data consists of recorded spoken discourse, it is possible to consider the roles of speech rate as well as social factors; moreover, in the case of *gonna*, reduced phonetic realizations are taken into account, which elucidates the differences between the use of the contraction and phonetic reduction.

Chapter 4 takes a look back into the history of semi-modal contractions. Using speech-purposed written data from the Corpus of Historical American English (COHA), this study tracks the development of the contractions and their relation to the source forms in American English through the twentieth century. The contractions' startling increase in frequency is discussed in that context. Again, a set of multivariate models are devised, focussing on changes in the determinants of variation that indicate progress towards the contracted forms' independence.

In Chapter 5, I present the results of a listen-and-repeat experiment conducted with speakers of North American English. The experiment is designed to investigate the perception of *gonna* and *gotta*. It is based on some of the findings from the corpus data (presented in chapters 3 and 4), testing whether factors influencing the use of contractions in production also have import in their perception.

Finally, Chapter 6 is where all the results are drawn together. On the basis of the combined findings, a detailed model of emancipation as a frequency effect is proposed.

# **CHAPTER 3 Emancipation in Apparent Time**

gonna, gotta, and wanna in contemporary spoken American English

"Shall we", they ask, "have no standards?" To which we might answer: "Certainly. The more the better." If they are before us, they lure us on. If they are behind us, they mark our progress. (68)

Robert P. Utter, "Progress in Pronunciation"

There is, as it were, a standard in English that allows for usage of the constructions BE going to, HAVE got to and WANT to in their respective modal functions, but disapproves of the shorter and simpler versions gonna, gotta and *wanna*. However, in the actual spoken language, exactly these forms are pervasive. This chapter deals with the contracted forms gonna, gotta, and wanna and their relation to the source forms in contemporary spoken American English. In addition, these forms are compared to contractions of lower frequency, namely needa (from need to) and tryna (from trying to). Their development in apparent time is presented and the variations between the full and contracted forms are examined with a quantitative approach. Thus, this is a detailed, synchronic study of spoken language, based on the phonological realization of the respective items. The general approach of this chapter is exploratory, attempting to attain the best possible description of the variation of semi-modal forms in spoken American English. However, it will also be seen that conclusions regarding diachronic change can be drawn from the synchronic state of affairs - as Keller (1994) remarks: "The changes of tomorrow are the collective consequences of our communicative actions today" (71). The study is largely based on data from the Santa Barbara Corpus of Spoken American English (DuBois et al. 2000-2005).

The Santa Barbara Corpus of Spoken and American English (SBC) consists of sixty recordings of, in the words of the official corpus description, "natural speech from all over the United States, representing a wide variety of people of different regional origins, ages, occupations, and ethnic and social backgrounds" (DuBois et al. 2005). These are predominantly face-to-face conversations, both private and professional, and with varying numbers of interlocutors; they also include telephone conversations, public talks, and others. Thus, a wide range of speech situations at different levels of formality is covered. The material amounts to circa 33 hours of recorded speech, or 249,000 words of transcripts. A small corpus by current standards, the SBC's strength

lies in the detailed information it provides, which includes the age, sex, education level, and home state of the speakers. Moreover, it comprises a manageable amount of data, thus allowing for the inclusion of variables that require manual coding, such as semantic and syntactic aspects (i.e. type of modality and clause type). The greatest advantage to using this data is that the recordings are available and come with time-aligned transcripts, which is important here for two reasons: firstly, it enables double-checking of the phonetic realization of all the tokens in the analysis, and, where necessary, correction of the provided transcription<sup>27</sup>; secondly, the phonetic realizations can also be taken into account in the analysis, and speech rates can be measured.

### **3.1.** The Contractions' Development in Apparent Time

In chapter 2 it is suggested that the increasing independence of the contracted forms *gonna*, *gotta* and *wanna* is contingent on their increasing use as compared to the full forms. For the present analysis I assume that the diachronic developments of the forms in question can be shown, to an extent, in apparent time, i.e. that young speakers represent a diachronically more advanced stage than older speakers. A comprehensive discussion of the apparent time construct can be found in Bailey (2002); Mair (2006: 29ff) makes a case for documenting change in apparent time specifically in reference to the contractions investigated here.

The suggested frequency increase of the contracted semi-modals has previously been shown by Krug (2000) in an apparent time study of spoken British English. As we saw in 2.5., in Krug's British data *gonna* shows the highest relative frequency throughout, and *wanna* the lowest.

These results are by and large replicated in the American English data from the albeit significantly smaller SBC (Krug's BNC study boasts 28,613 tokens, as opposed to 1,361 tokens in the SBC for the present analysis); the age groups are also set differently here so as to fit to the available data.

Although this analysis is based on the transcripts of the SBC, all tokens have been double-checked against the corresponding audio signal, and corrections have been made where necessary (in 102 cases). The raw frequencies and percentages found are presented in Table 3-1.

<sup>&</sup>lt;sup>27</sup> The forms *gonna*, *gotta* and *wanna* are included in the SBC's transcription conventions, and are quite reliably identified. However, on close listening, the transcription was corrected in 102 cases (out of 1361 tokens).

	> 65	50-65	35-49	25-34	11-24	(NA)	total
going to	14	18	15	21	4	(4)	76
gonna	40	93	188	239	174	(86)	820
% gonna	74.1	83.8	92.6	91.9	97.8		91.5
got to	2	4	6	3	1	(4)	20
gotta	7	16	25	24	10	(9)	91
% gotta	77.8	80	80.6	88.9	90.9		82
want to	5	15	16	28	19	(4)	87
wanna	8	26	66	97	68	(12)	277
% wanna	61.5	63.4	80.5	77.6	78.2		76.1

speaker age

Table 3-1: Frequencies of full and contracted variants by age groups

These results can be visualized as an apparent time development curve for each of the three variations, as in Fig. 3-1.



Figure 3-1: The share of the contracted variants in apparent time

The trends for *gonna* and *wanna* clearly match expectation, and *gotta*, while not statistically significant, also follows the upward trend.<sup>28</sup> As in Krug's data, the

<sup>&</sup>lt;sup>28</sup> The p-values were calculated on speaker age as a continuous numeric vector, not on the age groups.

most striking development is that of *gonna*. All three items start out from a much higher level here than in British English, so the curves are not as steep, suggesting again that American English is further advanced in this development. In the case of *gotta*, the number of tokens for this variable seems to be too low to render a statistically significant effect.

The normalized absolute frequencies (tokens per 1,000 transcript lines, see Figure 3-2) show a slightly different picture: while the use of *going to/ gonna* and *want to/wanna* increases with younger speakers, *got to/gotta* shows no such development.



Figure 3-2: Normalized frequencies by age groups

These trends are in line with the findings of other research on the usage of expressions of modality. Leech (2003) finds a sharp rise of BE *going to/gonna* and *want to/wanna* in written American English between the 1960s and the 1990s, and a slight increase of (HAVE) *got to/gotta*, while Jankowski (2004) reports that (HAVE) *got to* has been losing ground to HAVE *to* since the 1970s in American English. Thus, it seems that the reducing effect of frequency (Bybee 2006) is at work in the cases of *gonna* and *wanna*, and their higher frequencies yield more contraction. However, this cannot explain the trend of preferring *gotta* over *got to*, as *gotta* is holding its ground despite the demise of its source form. There must therefore be individual differences among the contractes forms.

The contraction *gonna* exhibits the sharpest increase of the three, and it is also the one most phonetically distinct from its source form. The difference between

*gonna* and *going to* is thus more easily perceived (and possibly more salient) than that between *gotta* and *got to* or *wanna* and *want to*. Moreover, *gonna/going to* is far more frequent than these other modal expressions.

This trend is therefore very robust; older speakers use both *gonna* and *going to*, while younger ones almost exclusively use *gonna*. This is concomitant with an overall rise in absolute frequency, but it transcends the reducing effect of frequency: *gonna* gets so close to 100% that it is the contraction itself, not the full form, that contributes to the increasing absolute frequency. If the two forms are seen as distinct variants, then *gonna* is clearly winning out against *going to* over time in terms of usage in spoken language.

The data available for *gotta* and *got to* is sparse, totalling 110 tokens. Despite this low absolute frequency the share of contractions is larger than with the more frequent *want to/wanna*. Also, the curve shows a clear upward trend in the portion of *gotta*. However, as noted above, this trend does not rate as statistically significant, and there is no increase in absolute frequency. Moreover, the phonetic difference between *got to* and *gotta* can be very subtle and may depend solely on the quality of the final vowel ([ə] or [v]). While the case is thus not as clear as that of *gonna*, the neat upward curve is still remarkable in light of the overall decline of the variant. Figure 3-3 shows that this decline of (HAVE) *got to/gotta* is in favor of HAVE *to*, confirming Jankowski's (2004) finding. Although we can observe a short-lived trend towards (HAVE) *got to/gotta* in the middle-aged generations, younger age groups strongly favor HAVE *to*. A very similar trajectory has also been found in northern British English (York) by Tagliamonte & Smith (2006).



Figure 3-3: HAVE to versus (HAVE) got to by age groups

Clearly, *gotta*'s position in the modal system is far less secure than that of *gonna*. There is, moreover, yet another relevant variation: the presence or absence of the auxiliary HAVE. Omission of the auxiliary is regarded as non-standard (Tagliamonte & D'Arcy 2007) and has been reported to be rare in conservative dialects (Tagliamonte 2006) Since HAVE *got to* is originally a spin-off of HAVE *to*, one might expect the resurgence of the latter to lead to an avoidance of auxiliary omission in the former. But, as Figure 3-4 shows, auxiliary omission remains popular with *got to/gotta*. Interestingly, this variation shows no interpretable development in apparent time, except perhaps that HAVE is retained most in usage by the age cohort with which (HAVE) *got to/gotta* is most popular (the 35-49 year-olds).



Figure 3-4: Auxiliary omission with gotta/got to in apparent time

Whether the auxiliary is left out or retained seems to depend on factors other than the speaker's age. This does not necessarily mean that there is no change at all – there might be a long-term shift in which older and younger speakers change their linguistic behavior *pari passu* (cf. Labov 2001: 76f). As we will see, this variation is in fact largely determined by intralinguistic factors. The longitudinal change is discussed in chapter 4.

The portion of the contracted variant is generally lower with *wanna* and *want to* than in the cases of *gonna/going to* and *gotta/got to*. While there is an upward trend with decreasing speaker age, there is also an unexpected peak in the group of 35-49 year-old speakers, followed by a light decrease, even though the absolute frequency continues to rise.

In principle, these data allow for an interpretation by which *wanna* reaches a saturation level at 75-80%, from which point it ceases to increase. However, there is no apparent reason why *wanna* should settle for that share

while *gonna* and *gotta* continue toward 100% (recall that the non-contracting *wants to* and *wanted to* are excluded from consideration). We night therefore postulate that the stalled increase is due to the interference of factors that do not bear on the rise of *gonna* and *gotta*. Later in this chapter I offer an analysis suggesting that intralinguistic factors are more influential on the choice of *wanna* than the speaker's age, thus hampering the emancipation of *wanna*.

#### "tryna" and "needa":

For comparison, let us now consider two cases of contraction that are reasonably common and on occasion cited alongside *gonna* and *wanna* (e.g. Aoun & Lightfoot 1984, Krug 2000), but that have either no claim to emancipation, or at least are lagging behind considerably. These are the contracted forms of *trying to*, i.e. /trainə/ (henceforth *tryna*), and *need to*, /ni:də/ (henceforth *needa*). These contractions are thought to "occur only in rapid or very casual speech" (Pullum 1997: 82). However, *need to* has recently seen a rapid increase in frequency and has a modal meaning ("a strong or inevitable necessity which is in the addressee's interest", Müller 2008: 87), making it quite similar to *going to*, *got to* and *want to*.

The data for *trying to/tryna* and *need to/needa* are scarce: the corpus yields only 105 tokens of the former and 96 of the latter, of which 87 and 83, respectively, are annotated for the speaker's age (see Table 3-2). The third person singular form *needs to* is excluded from consideration, as it does not contract to *needa*.

As we can see, the frequency of the contracted realization *tryna* does increase significantly towards younger speakers, albeit from a very low initial level (indeed from zero). Also, the correlation between absolute frequency and contraction fails only in the youngest age group. The increase of *needa*, in contrast, is somewhat stunted – the younger age cohorts use the contraction less than the middle-aged speakers, and as such the apparent time development of this form is not statistically significant. Figure 3-5 shows how the developments of *tryna* and *needa* trail behind that of *gonna*, *gotta* and *wanna*.

	> 65	50-65	35-49	25-34	11-24	(NA)	total
trying to	3	11	20	25	12	(10)	81
tryna	0	1	4	5	6	(8)	24
total per 1,000 lines	0.44	1.21	1.67	1.54	1.45		1.38
need to	0	6	28	17	13	(13)	77
needa	0	1	12	3	3	(0)	19
total per 1,000 lines	0	0.71	2.78	1.03	1.29		1.26

Table 3-2: trying to versus tryna and need to vs needa by speaker age



Figure 3-5: The share of contracted *tryna* and *needa* as compared to *gonna*, *gotta* and *wanna* 

The data and figures in this section show that the contracted variants are by and large on the rise, and that *gonna* is the most advanced in this development. The forms *tryna* and *needa* exhibit much lower frequencies than *gonna*, *gotta* and *wanna*, both on absolute and relative measures, but a significant increase for *tryna* is also observed. A perhaps rather surprising outcome is that time (i.e. age) does not seem to have an effect on the frequency of auxiliary omission with *gotta/got to*.

In terms of the status of the contraction and their postulated emancipation, this apparent time analysis leads to a mixed conclusion: To some extent the increasing use of contractions is accompanied by higher absolute frequencies, inviting an explanation in terms of the reducing effect of frequency. The reducing effect, however, can only operate as long as the contracted variants are conceived of as reduced forms rather than independent items. Thus, the persistent preference of *gotta* over *got to* and the near-total victory of *gonna* in spoken English indicate that these variants are advancing beyond frequency-induced reduction.

The question remains whether the observed progress is indeed from phonetic to lexical variant, or simply an increased tendency of phonetic reduction in younger speakers. We cut to the heart of this matter in the following section.

## 3.2. Full and Contracted Forms in Spoken American English

If *gonna*, *gotta* and *wanna* are on the rise, what does this mean in terms of their 'emancipation' as defined in chapter 2, i.e. the increasing independence of the contractions from their full forms? Is /gpnə/, for example, simply an easier and more economical way of <u>pronouncing</u> *going to*, or is it perceived and used as a word in its own right?

It appears that in any given single instance there is a discrete answer to this question, as theoretically /gpnə/ is either a representation of *going to* or of *gonna*. However, when considering the entire language community, especially from a diachronic perspective, it is appropriate to posit a continuum from more to less dependence from the source form. That is, even if the distinction is seen as discrete rather than gradient<sup>29</sup>, the actualization of the change is gradual (cf. the discussion of gradualness and gradience in Traugott & Trousdale 2010). The hypothesis is, again, that the contractions are proceeding along a continuum towards complete independence, with *gonna* being the most advanced.

Evidence for this emancipation process can only be indirect. We cannot look into the minds of speakers; we can, however, observe the ways and circumstances of their use of semi-modal expressions. The general approach in this section is to examine and compare factors bearing on the variations between the respective full and contracted forms.

Assuming that a speaker's age is not the only factor that influences their choice of a full or contracted variant, this section takes a wider scope than the previous, integrating a number of speaker- and speech-related factors. These are assessed through multivariate statistical models to yield a picture of how the variations are determined, and also how the patterns of variation are changing in apparent time.

To begin with, some general remarks on each of the variations seem appropriate, to serve as the backdrop of the data modeling and discussions to follow.

#### gonna versus going to

As shown above, the preponderance of *gonna* is very strong and increasing with younger speakers. The contracted form is in fact the default variant in spoken American English. Nevertheless, as the following analysis shows, some disfavoring factors persist (though on a small scale) – these effects can be

<sup>&</sup>lt;sup>29</sup> As discussed in 2.7., it does not need to be seen as strictly discrete.

interpreted as remnants of *gonna*'s status as a reduction of *going to*. The variation of *going to* and *gonna* is also compared to phonetically reduced realizations, showing how this variation is moving away from reduction.

#### gotta versus got to

Since the SBC does not provide sufficient data to productively examine and compare the factors of variation, it is complemented with data from the publicly available part of the Michigan Corpus of Spoken Academic English (MICASE, Simpson et al. 2002). This corpus features recordings of various speech events (lectures, discussion groups, conversations) in academic settings at the University of Michigan. Thus, whilst covering a wide array of language use, it is not as well balanced as the SBC, and is probably biased towards highly educated speakers from the northern United States. Also, it does not include information about the speakers' education level or their regional dialect. It is therefore not a perfect supplement to the SBC, but still a useful one. 108 tokens were added from the 75 recordings available on the MICASE website. This makes for a total of 220 tokens for the analyses below, of which the contraction *gotta* has a share of 80% (Table 3-3).

	(HAVE) got to	(HAVE) gotta	% gotta
SBC	20	92	82.1%
MICASE	24	84	77.8%
TOTAL	44	176	80%

Table 3-3: (HAVE) got to and (HAVE) gotta in SBC and MICASE

The retention or omission of auxiliary HAVE with *got to/gotta* is referred to in the description of the individual factors when needed. It will be examined more closely in the multivariate analysis, which reveals how closely it is intertwined with the selection of *gotta* or *got to*. What becomes evident is that there is a very strong tendency to use the contraction if HAVE is omitted (Table 3-4). Of the four possible variants,  $\emptyset$  got to is the least frequent, while  $\emptyset$  gotta is used most. This point and its implications are also discussed in chapter 5.

auxiliary	HAVE	Ø
got to - gotta	34 - 49	10 - 127
% gotta	59%	93%

p < 0.0001

Table 3-4: got to vs gotta by auxiliary

#### wanna versus want to

The variation examined here is strictly between *wanna* and *want to* (rather than WANT *to*). The inflected forms *wants to* and *wanted to* are excluded, because *wanna* cannot usually replace these forms. One might take this gap in the usage of *wanna* as evidence that the relation to the full form is essentially phonological, but that is not the approach taken here; rather, I investigate the variation where it occurs, and draw conclusions from the data. Speculation concerning whether *wanna* will eventually also enter third person singular contexts (apart from markedly non-standard usage) is therefore beyond the scope of this study.

## 3.2.1. Factors of Variation in Spoken Language

In total, ten factors of variation are included in this study. These can be grouped into factors pertaining to the speaker (labeled 'social variables' here) and those pertaining to speech or grammar (i.e. 'intralinguistic factors'). Naturally, not all factors influence every variation. Inspection of the data with respect to each factor reveals what determines the use of contracted semi-modals in speech and what does not.

### 3.2.1.1. Social Variables

#### Speaker's Age

The apparent time study in the previous section is based exclusively on this factor. Here, 'age' is listed as a property of the speaker, but it clearly maintains a special status as a likely indicator of change in progress. The overall age average in the SBC is 39.65 years; in the *going to/gonna* set it is 37.03, *got to/gotta* tokens average at 42.02 years, and *want to/wanna* at 34.65.

The distributions of the contractions and their source forms by this factor are repeated here in Table 3-5. The figures for *got to/gotta* are those of the SBC and MICASE data combined – as MICASE provides no exact age, but only membership of one of four predefined age groups, the SBC portion of the data is, for this set, subjected to the same categorization.

speaker age	11-24 years	25-34 years	35-49 years	50-65 years	> 65 years
going to - gonna	4 - 174 (98%)	21 - 239 (92%)	15 -188 (93%)	18 - 93 (84%)	14 - 40 (74%)
want to - wanna	19 - 68 (78%)	28 - 97 (78%)	16 - 66 (81%)	15 - 26 (63%)	5 - 8 (62%)
	17-23 years	24-30 years	31-50 years	> 50 years	
got to - gotta	4 - 31 (89%)	1 - 19 (95%)	16 - 76 (83%)	19 - 41 (68%)	

Table 3-5: Full and contracted variants by speaker's age

### Speaker's Education

A speaker's education level is seen as "an important concomitant of socioeconomic status" (Tagliamonte & D'Arcy 2007: 81). Thus, if a variant shows an association with more educated speakers, it may be a marker of social prestige; likewise, forms used by less educated speakers are often socially stigmatized.

In the SBC data, the speakers' level of formal education is implemented as a numeric vector, by the number of years that a person has attended an educational institution. The average education level in the corpus overall is 15.8 years<sup>30</sup>. It is slightly higher for men (16.3) than for women (15.4).

The distributions of the full and contracted forms over three levels of education are summarized in Table 3-6, including the percentages of the contractions.

education	< 16 years	16 years	> 16 years	
going to - gonna	15 - 201 (93%)	21 - 325 (94%)	21 - 125 (86%)	p = 0.012
got to - gotta	4 - 30 (88%)	4 - 20 (83%)	2 - 17 (89%)	p = 0.447
want to - wanna	23 - 67 (74%)	33 - 123 (79%)	16 - 40 (71%)	p = 0.713

Table 3-6: Full and contracted forms by speaker's education

*going to / gonna*: While the preference for the contracted form applies at all levels of education, it is significantly weaker with highly educated speakers ('> 16 years' in Table 3-6). Unsurprisingly, as *going to* is the more formal variant, it persists with the group whose members are most accustomed to formal ways of speaking. In reverse, however, there is no evidence that *gonna* is now associated with low education.

<sup>&</sup>lt;sup>30</sup> This surely is above the real average of the population, as (naturally) many of the speakers in the corpus have an academic background.

<u>got to / gotta</u>: As this factor is adopted from the SBC, the MICASE data are not included here. In contrast to *gonna*, *gotta* scores its largest share with highly educated speakers, but the effect is not significant. Note also that the largest number of tokens for *got to/gotta* is found in the lower-education group, where there is greater acceptance of informal variants, and *got to/gotta* perhaps stands a better chance against the socially neutral HAVE *to* (cf. Tagliamonte & D'Arcy 2007). Note also that the tendency to drop the auxiliary HAVE is more pronounced with less educated speakers (76%) whereas highly educated speakers tend to retain it (58% auxiliary omission with education >16years).

*want to / wanna*: *Wanna* shows the same trend as *gonna*, being least popular with the most educated speakers. However, this trend is not significant.

### Speaker's Sex

This is a binary factor, taking the values 'male' or 'female'. Overall, there is slightly more 'female' speech (54.9% of transcript lines) than 'male' (45.1%) in the SBC. The male speakers in the corpus are on average slightly older than the women (mean age 42.3 and 37.5 years, respectively), and are more educated (see above). As a sociolinguistic factor the speaker's gender has often been observed to correlate with the social evaluation of variants, such that "women use fewer stigmatized and nonstandard variants than do men of the same social group in the same circumstances" (Chambers 2002: 352). One might therefore expect female speakers to somewhat shun the contracted forms, but, as Table 3-7 shows, this is not the case.

speaker sex	male	female	
going to - gonna	31 - 404 (93%)	45 - 416 (90%)	p = 0.159
got to - gotta	27 - 87 (76%)	17 - 89 (84%)	p = 0.155
want to - wanna	43 - 121 (74%)	45 - 155 (78%)	p = 0.41

Table 3-7: Full and contracted forms by speaker's sex

<u>going to / gonna</u>: The preference for gonna is slightly more pronounced among men than women, though at a non-significant level (Table 3-7). Men thus exhibit the same tendency as younger and less educated speakers, which runs counter to their representation in the corpus (men being older and more educated).

<u>got to / gotta:</u> gotta is more frequent with female speakers, in direct contrast to the expectation that women use "stigmatized" variants less frequently than men (Chambers 2002, see above). However, this is not surprising considering the

age distributions – both in the SBC and MICASE, the female speakers are younger on average.

<u>want to / wanna</u>: wanna is slightly more frequent with female speakers, and again, this might be expected from the age distribution of the corpus. However, in this case the difference is marginal.

### **Dialect Region**

The dialect region is defined here as the region of the United States where a speaker grew up or where they have their linguistic roots. The SBC itself provides the speakers' "dialect states" (DuBois et al. 2005). These states are grouped into regions on the basis of the dialect areas proposed in Labov, Ash & Boberg (2006), resulting in four categories: North, Midlands, South and West<sup>31</sup>. In Table 3-8, which presents an overview of the distributions, an additional category 'mixed' is included to accommodate those speakers who perceive their linguistic roots to be from multiple regions. In the later analyses, these cases are grouped with the region of the state that is mentioned first in the respective speaker's metadata.

	(mixed)	West	South	Midlands	North	dialect region
p<0.001	1 - 33	14 - 216 (94%)	13 - 84 (87%)	27 - 147 (84%)	5 - 147 (97%)	going to - gonna
p=0.295	0 - 1	3 - 36 (92%)	4 - 11 (73%)	2 - 21 (91%)	4 - 14 (78%)	got to - gotta
p=0.434	2 - 19	28 - 89 (76%)	11 - 30 (73%)	14 - 39 (74%)	12 - 50 (81%)	want to - wanna

Table 3-8: full versus contracted forms by dialect region

<u>going to / gonna</u>: As Table 3-8 shows, the preferred use of gonna is not a feature of any particular regional dialect(s). Yet, a speaker's dialect region does affect the choice of the full or contracted form to some extent, as speakers from the South and the Midlands appear to retain going to more than others. Interestingly, this contrasts with the regional variation in written texts reported

<sup>&</sup>lt;sup>31</sup> The grouping of states into region is as follows:

North: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, Vermont, New York, Michigan, Wisconsin, Minnesota, North Dakota, South Dakota

Midlands: New Jersey, Delaware, Pennsylvania, Ohio, Indiana, Illinois, Iowa, Nebraska, Kansas, Oklahoma South: Virginia, West Virginia, Maryland, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Missouri, Arkansas, Louisiana, Texas

West: Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, Arizona, Washington, Oregon, Nevada, California

<sup>(</sup>Alaska and Hawaii are not represented in the data.)

by Grieve (2011), who finds the heaviest use of *to*-contraction in the South and the lowest in the Northeast.

It is important to note, however, that the regions are very imbalanced with respect to the other social variables, so that it is not clear to what extent the distributions in Table 3-8 truly reflect regional variation rather than variation due to age, sex, or education. Table 3-9 shows how these variables are distributed over the regions in the *going to/gonna* data set.

dialect region	North	Midlands	South	West	(mixed)
mean age	36.3 ys	43.9 ys	44.8 ys	30.1 ys	37.8 ys
mean education	14.7 ys	16.5 ys	16.1 ys	14.6 ys	16.9 ys
male - female	49% - 51%	43% - 57%	73% - 27%	32% - 68%	53% - 47%

Table 3-9: social variables by dialect region for going to/gonna

The figures in Table 3-9 suggest that age and education are indeed at least in part responsible for the effect of dialect region on the variation. The regions with more retention of the full form, the Midlands and the South, are those skewed towards older and more educated speakers. The contribution of the factor 'sex' is not so clear. If male speakers tend to use *gonna* more, this may weaken the effects of age and education in the South (more male speakers) and the West (more female speakers). Indeed, these regions' distributions of *going to* and *gonna* are not as extreme as those found in the North and the Midlands. It would therefore seem that the combined effects of age, education and sex account for a large portion of the effect of dialect region.

<u>got to / gotta</u>: This variation shows considerable fluctuation over dialect regions. However, since the MICASE data do not include this information and therefore cannot be considered, the token numbers are too small to make any confident statement. We might only state that *gotta* seems to be generally popular in the West.

<u>want to / wanna</u>: The distribution of *want to/wanna* over dialect regions is not significant, and it appears that what difference there is between regions can be explained by speakers' age: As with *going to/gonna*, speakers from the North and West are the youngest on average, and it is there that higher rates of contraction are found.

#### 3.2.1.2. Intralinguistic Variables

#### Speech Rate

On-line phonetic reduction is generally linked to rapid speech (e.g. Jurafsky et al. 1998), however the contracted form of a semi-modal has been described as an item that is "not necessarily a mere *reflex* of rapid speech, but may be *chosen* as a lexical item in its own right" (Bolinger 1981: 197). Through the implementation of this factor we can investigate whether high speech rates quantitatively favor contraction of the semi-modals. Given that reduction is in part determined by rapid speech, but that a "lexical item in its own right" should be largely unaffected by it, this is an important indicator of an item's progress towards independence.

Speech rate is measured here in syllables per second (syll/sec) in the respective line of the corpus transcript, which, according to the SBC website, corresponds to an "intonation unit". Short pauses and ingressions are counted as one syllable and longer pauses within the intonation unit are counted as two. Transcript lines with longer silences are adapted so as to exclude these long pauses. Despite these adaptations, this is a fairly rough measure (for instance, changes in speech rate within the intonation unit are not captured), yet it will be seen that it provides useful results. Table 3-10 and Figure 3-6 present the distribution of the data which shows that speech rate does persist as a factor in the contraction of the semi-modals.

speech rate	< 5 syll/sec	5-6 syll/sec	6-7 syll/sec	7-8 syll/sec	> 8 syll/sec
<i>going to - gonna</i>	15 - 103	26 - 223	20 - 226	10 - 156	5 - 112
p = 0.0049	(87%)	(90%)	(92%)	(94%)	(96%)
<i>got to - gotta</i>	14 - 21	13 - 48	13 - 71	2 - 27	2 - 9
p = 0.0016	(60%)	(79%)	(85%)	(93%)	(82%)
<i>want to - wanna</i>	16 - 29	26 - 61	22 - 69	14 - 68	10 - 49
p = 0.0025	(64%)	(70%)	(76%)	(83%)	(83%)

Table 3-10: Full and contracted forms by speech rate

Note how the upward curves in Figure 3-6 are reminiscent of the apparent time curves in Figure 3-1. Given that younger speakers also generally talk faster, and both young age and rapid speech foster contraction, the question remains (at this point) to what extent the import of speech rate is an artefact of the speaker's age.


Figure 3-6: Share of contracted forms by speech rate

<u>going to / gonna</u>: The average speech rate in the gonna/going to set is 6.48 syll/ sec. It is clear from the data in Table 3-10 that gonna is indeed not "a mere reflex of rapid speech" (Bolinger 1981: 197); however, the use of the full form going to steadily declines with increasing speech rates and hardly ever occurs in very fast speech. This effect does not seem drastic, but it is significant. In its distribution by speech rate, gonna thus retains a property of phonetic reduction.

<u>got to / gotta</u>: The case of got to versus gotta is very similar. Speech rate has a significant effect, and a strong increase of the contraction is accompanied by increased speech rates. The highest speech rate (> 8syll/sec) drops out of the curve, though this result is based on very few tokens.

<u>want to / wanna</u>: Like gonna and gotta, the use of wanna appears to be strongly favored by rapid speech. Nevertheless, the contraction wanna is also common in slow speech, and similarly, the full form want to is compatible even with very high speech rates.

#### Preceding Item

If contraction is related to frequent strings or chunks, then the collocates of the item undergoing contraction are likely to play a role. As frequent chunks are more easily reduced (cf. Bybee 2010), it is expected that frequent collocates will favor contraction if the contracted form is still tied to its source form. This can be operationalized by considering the preceding item of the respective semi-modal (and the string frequency with the following verb, see below).

Previous studies have shown that frequent collocations (i.e. high predictability from the preceding item) do often favor reduction, e.g. Scheibman (2000) for the string *I don't know*, and Keune et al. (2005) for Dutch adverbs.

<u>going to / gonna</u>: The element preceding going to/gonna is usually a cliticized form of the auxiliary BE. Lumping some of the less frequent preceding forms together, we can define the following categories: I'm (n=170), you/they/we're (n=135), he/she/it 's (n=158), full form of present tense BE (are, is) (n=58), past tense marker (was, were) (n=126), negation markers (not, -n't) (n=83) and adverbs (just, always, really, etc.) (n=42), noun phrase (n=100), and zero (pause or beginning of a phrase) (n=24). The distributions of going to and gonna according to these categories are displayed in Table 3-11.

preceding item	'm	're	's	full BE	was/ were	NEG/ ADV	NP	pause
going to - gonna	17 -153	7 - 128	10 - 148	13 - 45	12 - 114	6 - 119	10 - 90	1 - 23
% gonna	90%	95%	94%	78%	90%	95%	90%	96%

p = 0.0166

Table 3-11: going to vs gonna by preceding item

Here, too, we observe an effect that points to the persistence of *gonna* as a contraction. The one type of element after which retention of *going to* is relatively more frequent is present tense BE in its full form (*am/are/is*). As such, if the subject and copula BE are not contracted, the likelihood of contracting *going to* to *gonna* also decreases. When speakers choose not to use contraction, perhaps for the sake of explicitness and formal style (consider example (40)), they tend to be consistent in this choice.

# (40) [...] an area where we are going to do .. some strategic planning along with the community (SBC 018 - 707.355)

<u>got to / gotta</u>: The preceding element of (HAVE) got to/gotta is usually the subject - a personal pronoun or full noun (here included in "3rd Person singular"<sup>32</sup>) - but may also be an adverb or pause. In Table 3-12 the infrequent *we* and *they* are conflated, and expletive subjects have been categorized as "3rd person singular". The presence or absence of auxiliary HAVE is at present ignored.

<sup>&</sup>lt;sup>32</sup> Effectively no instances of plural nouns preceding (HAVE) *got to/gotta* have been found in the data – the only candidate, *you guys gotta spread out* (MICASE STP095SU139) was grouped with *you*.

preceding item	Ι	you	we/they	3rd Pers sing	ADV	pause
got to - gotta	9 - 51	10 - 78	6 - 17	16 - 19	1 - 3	2 - 8
% gotta	85%	89%	74%	54%	75%	80%

p = 0.0016

Table 3-12: got to vs gotta by preceding item

The distribution in Table 3-12 is statistically significant (p<0.01). The contraction has the largest share with preceding *I* and *you*, which are also the most frequent subjects (see examples (41-42)). This points to an effect of chunking, in that the most frequent sequences containing an item (i.e. *got to*) favor its reduction (i.e. to *gotta*). Even more strikingly, third person singular subjects strongly disfavor *gotta*. This is at least in part induced by the almost obligatory presence of auxiliary HAVE in this context – HAVE *got to* is almost as common as HAVE *gotta* (examples (43-44)).

- (41) you roll and then you get a six and then you think okay that means I gotta put my big toe on Park Place (MICASE DIS475MU012)
- (42) then you roll it again and that means you gotta put your pinky on you know, jail, or something (MICASE DIS475MU012)
- (43) [...] that the relationship with the child has got to be a permanent commitment (MICASE COL605MX132)
- (44) The landlord's gotta put a vent over it. (SBC 046 161.268)

<u>want to / wanna</u>: As with got to/gotta, we usually find the subject in the preceding position of want to/wanna. Additionally, there are adverbs, pauses, negation (*not*, -n't) or a modal (*will, might, going to, gonna*). Because there is no variation in the third person singular (*wants to* does not contract to *wanna*), this type has been excluded.

preceding item	I	уои	we	3rd p. plural	ADV	MODAL	NEG	pause
want to - wanna	19 - 78	18 - 78	4 - 10	5 - 8	4 - 14	3 - 12	30 - 68	3 - 6
% wanna	80%	81%	71%	62%	78%	80%	69%	67%

p = 0.3803



Table 3-13 shows a similar trend to Table 3-12: *I* and *you* are frequent as preceding items and favor contraction (examples (45-46)). However, with *want to/wanna*, negation markers are just as frequent, although in comparison they

disfavor contraction (see (47)). Interestingly, Krug's (2000) observation on British English that *wanna* is rarer after modals is not replicated here (exemplified in (48)). Unlike the cases of *gonna* and *gotta*, the distribution of *want to* and *wanna* by preceding item is not statistically significant.

- (45) *Would you wanna be a clown or a ninja, instead of the tick?* (SBC 058 922.973)
- (46) I wanna be the tick. (SBC 058 926.898)
- (47) She didn't want to keep the mare at home after they put the other horse down (SBC 056 1107.637)
- (48) *Mom's not gonna wanna go to Wal-Mart anymore.* (SBC 036 766.467)

#### String Frequency

Following this idea, i.e. that more frequent sequences (chunks) are more susceptible to reduction, string frequency with the following item is also considered. This variable is the frequency with which either variant occurs with a given verb (e.g. *gonna/going to play*). In order to obtain balanced and broadly valid frequency values, these string frequencies are taken from the 'Spoken' section of the Corpus of Contemporary American English (COCA, Davies 2008-), which contains about 80 million words of spoken American English. The string frequencies are measured in tokens per million words, and is therefore a numeric vector.<sup>33</sup>

It should be noted that the factor 'string frequency' measures a frequency effect different from that found for frequent preceding items above. While the latter allows an interpretation in terms of predictability, the former refers solely to the reduction of a frequent string, and is therefore of a more prosodic nature.

<u>going to / gonna</u>: For the collocations with gonna/going to the string frequencies range from 0 (with no matching collocation found in COCA at all, e.g. gonna unpack, gonna barbarian it out (49)) to 554 (gonna/going to be). The distribution of the variants is illustrated in Table 3-14. These results are not revealing – the factor string frequency clearly has no import on this variation.

# (49) Shall I do something civilized, like clear the table, or are we just gonna barbarian it out (SBC 0003 1219.87)

<sup>&</sup>lt;sup>33</sup> For example, the string *going to/gonna play* occurs 9.98 times per 1 million words in COCA Spoken, so the 'string frequency' value of a *going to/gonna* token followed by *play* is 9.98; *want to/wanna play* has a frequency of 6.8 per million words in COCA Spoken, so here the respective 'string frequency value is 6.8. Consequently, the variable *going to/gonna* generally has higher values for this vector, *got to/gotta* the lowest, following from their overall frequencies.

string frequency	0-5	5-30	30-100	100-200	>200
going to - gonna	17 - 174	12 - 136	14 - 147	8 - 145	15 - 151
% gonna	91%	92%	91%	95%	91%

p = 0.917

Table 3-14: going to vs gonna by string frequency

<u>got to / gotta</u>: Naturally, the string frequencies with got to/gotta are much lower overall. They range from 0 (e.g. gotta breed, gotta tailor it (50)) to 41.88 (got to/gotta be). The distributions in Table 3-15 indicate that low-frequency strings have a much stronger tendency towards gotta than high-frequency strings. In terms of frequency effects, this is a reverse effect to what has been shown in Table 3-12 – it seems that while the most frequent preceding items favor contraction, the most frequent following items disfavor it. Note, however, that the most frequent verbs - be, get, do, go - all start with a voiced consonant, which may explain their tendency to retain got to. This is further discussed below.

## (50) What's even more important is, you've gotta tailor it to what your insulin is (SBC 041 606.772)

string frequency	0-1	1-5	5-20	>20	
got to - gotta	4 - 48	5 - 42	11 - 40	19 - 35	p = 0.0013
% gotta	92%	89%	78%	65%	

Table 3-15: got to vs gotta by string frequency

<u>want to / wanna</u>: Collocations with *want to/wanna* show string frequencies between 0 (e.g. *wanna meditate*, *wanna waitress* (51)) and 85.58 (*want to/ wanna be*). There is no significant effect overall, but the high-frequency strings stand out as more favorable to contraction. This kind of frequency-induced reduction is expected if the contraction is a phonological rather than a lexical form. As such, it is a persisting effect of reduction, albeit a rather weak one.

(51) 'cause I don't wanna waitress, 'cause I'm – I get too nervous like kinda things (SBC 050 618.855)

.

string frequency	0-5	5-20	20-50	>50	
want to - wanna	22 - 73	19 - 52	20 - 59	18 - 79	p = 0.2677
% wanna	77%	73%	75%	81%	

Table 3-16: want to vs wanna by string frequency

#### Following Sound

Reduction is often conditioned by an item's phonetic environment. Thus, the sound immediately following a semi-modal may influence its chance of contraction. If this is the case, it points to phonetic reduction rather than lexical variation as motivation for the use of the contracted form.

The following sound is usually the first sound of the verb (or adverb) following a semi-modal, but may also be a pause. The sounds are grouped here into vowels, voiced consonants, voiceless consonants, and 'zero' for pauses or end of phrase. Table 3-17 displays the distributions with respect to these sound types (with the shares of the contracted forms in parentheses).

following sound	vowel	voiced cons.	voiceless c.	'zero'	
going to - gonna	4 - 41 (91%)	40 - 508 (93%)	24 - 228 (90%)	8 - 43 (84%)	p = 0.2439
got to - gotta	0 - 3	34 - 92 (73%)	5 - 71 (93%)	5 - 10 (67%)	p < 0.0001
want to - wanna	8 - 14 (64%)	48 - 163 (77%)	20 - 85 (81%)	12 - 14 (54%)	p = 0.0246

Table 3-17: Full and contracted forms by following sound

<u>going to / gonna</u>: While the effect is far from significant, a following pause or end of phrase is slightly less favorable to contraction (exemplified in (52)). This context indicates a disfluency or disruption of speech, which is associated with phonetic lengthening and disfavors reduction (Fox Tree & Clark 1997). The effect would therefore be expected if contraction is speech-dependent. This, then, presents another persisting factor of phonetic variation, and its low impact may be seen as evidence of *gonna*'s emancipation.

### (52) And do you remember when she was going to ... go down to Howard's End with her? (SBC 023 1367.18)

<u>got to / gotta</u>: There is a strong effect of voiceless consonants favoring gotta. A straightforward explanation for this lies in the phonetic characteristics of the variants, in that the voiceless stop sound /t/ in got to is replaced by a flap /r/ in gotta. A sequence of two voiceless consonants, and especially two voiceless stop sounds (as in got to try, for instance (53)), is cumbersome to produce, thus

inviting the use of the flap, and hence reduction of [gpt tə] to [gprə]. A following voiceless consonant therefore appears to be the primary context for reduction. The observation that the other contexts trail behind in adopting *gotta* indicates that the contraction retains traits of phonetic reduction.

## (53) but this is the only data you've got, so you've got to try to use it, okay? (MICASE LES205JG124)

<u>want to / wanna</u>: Here we can see a similar yet stronger effect as with going to/ gonna. A pause or end of phrase following the semi-modal relatively disfavors contraction (see example (54)). The similarity of distributions and the difference in significance show that wanna's ties to phonetic reduction remain stronger that those of gonna.

# (54) he's your brother, you can talk to him any time you want to, just leave me out of it. (SBC 037 1374.601)

## Type of Modality

The usage of competing variants is often influenced by their pragmatic import in a given context. In modality, it has been shown that the distribution of variants may differ depending on the type of modality being expressed (e.g. Leech 2003, Collins 2009 Tagliamonte & Smith 2006). The data in this study is therefore annotated for several types of modality. The basic distinction is between epistemic and root modality (see Larreya 2009, Smith 2003, and ch. 2.1.2.).

<u>going to / gonna</u>: Following Collins (2009) and Brisard (2001), four types of modality are distinguished, for *going to/gonna*: 'prediction' (stating a future event, as in (49)), 'intention' (stating what a subject plans to do (56)), 'epistemic' (stating an assumption (57)), and 'deontic' (issuing a command (58)). This categorization has its caveats. For one thing, it could be argued that 'prediction' is equivalent to an assumption about a future event or state, and thus every 'prediction' is actually an epistemic assertion<sup>34</sup>. Given this, an additional stipulation that 'epistemic' uses refer to a present state is needed. Furthermore, a statement of 'intention' often implies a prediction, especially with first person subjects; Berglund & Williams (2007) suspect that there are 'two for the price of one'-cases, that "a speaker or writer may sometimes wish to convey both intentional and predictive meaning simultaneously" (118). In order to maintain a clean distinction, tokens are labeled as 'intention' whenever an intention is overtly present, disregarding any predictive connotation in these

<sup>&</sup>lt;sup>34</sup> The inverse argument is also possible, as proposed by Menaugh (2005): an epistemic assertion is also a prediction, as it refers to a 'future event', namely "the revelation or verification of the state" (198).

cases. Often (but not always) 'intention' refers to an action, whereas states are predicted (consider the difference between *I'm gonna go home* and *I'm gonna be home by six*). Nevertheless, some cases remain elusive or equivocal; an additional category 'ambiguous' is therefore added to accommodate these instances, of which (59) is an example<sup>35</sup>. Table 3-18 shows the use of each type with *going to* and *gonna*.

- (55) Rana Lee's gonna have a baby by the way. (SBC 001 1232.27)
- (56) ... but our mission is not for us to go and decide what we're gonna do. (SBC 030 198.31)
- (57) every horse is gonna have a little different shape. (SBC 001 348.349)
- (58) Today you're gonna act like a human. (SBC 006 403.68)
- (59) Player three is aggressive, so he's gonna like go for everything (SBC 024 63.374)

modality type	prediction	intention	epistemic	deontic	(ambig.)
going to - gonna	17 - 280	43 - 375	11 -116	3 - 7	2 - 42
% gonna	94%	90%	91%	70%	(95%)

p = 0.0426

Table 3-18: going to vs gonna by modality type

The distribution over these four types is significant (p=0.0426). The most striking effect is the relatively strong retention of *going to* with deontic modality. This can be explained by explicitness: a command necessarily needs to be explicit and emphatic, which the full form can more adeptly express because it has more phonetic material that can carry emphasis. As this effect is based on only 10 tokens, it necessarily remains uncertain. It is tested further in chapter 5.

The modality type most favorable to contraction (leaving the ambiguous cases aside) is 'prediction', however the interpretation of this effect is less straightforward. If the grammaticalization of *going to* proceeded from 'intention' to 'prediction' to 'epistemic', one might expect the most grammaticalized meanings to be most open to contraction. 'Prediction', however, is the most neutral of these meanings, merely stating that an event is situated in the future. It seems to be this neutrality, then, that favors the use of

<sup>&</sup>lt;sup>35</sup> Example (59) is in fact ambiguous between three readings: 'prediction' ('I predict player three to go for everything'), 'intention' ('player three intends to go for everything'), and epistemic ('I assume that player three goes for everything')

the contraction.<sup>36</sup> This can be seen as a "generalizing abstraction" (i.e. reduction to core meaning) in the sense of Heine et al. (1991: 43), and hence as a grammaticalization feature. Note also that Berglund & Williams (2007) report a similar tendency in British English, namely that *going to* is rather associated with 'intention' uses, and *gonna* with 'prediction'.

<u>got to / gotta</u>: The root modality of got to/gotta is deontic (i.e. obligation/ necessity, cf. Coates 1983), which is here further divided into 'generic' uses (expressing a general obligation or necessity, as in (60)) and 'specific' uses (an immediate obligation or necessity pertaining to the specific situation that the speaker is in or that is being discussed, as in (61)). The third modality type distinguished is epistemic (an assumption or conclusion, as in (62)).

- (60) Guess they gotta make money somehow (SBC 018 707.355)
- (61) I gotta get some more coffee, please (SBC 059 817.013)
- (62) ... *it's a health hazard*. [...] *It's gotta breed rats and stuff*. (SBC 052 1348.328)

In addition to the use of the full and contracted form with each of these types, Table 3-19 also shows the share of auxiliary omission, The distribution on this score is highly significant.

modality type	deont. gen.	deont. spec.	epistemic	
got to - gotta	20 - 67	18 - 88	6 - 21	- 0 FF 47
% gotta	77%	83%	78%	p = 0.5547
HAVE - Ø	32 - 55	31 - 75	20 - 7	
% aux omission	63%	71%	26%	p < 0.0001

Table 3-19: got to vs gotta and auxiliary HAVE by modality type

As Table 3-19 shows, expressions of immediate obligation or necessity have a marginally higher rate of contraction. However, the effect is not statistically significant.

The distribution with respect to auxiliary omission is more interesting. Epistemic uses overwhelmingly retain HAVE, no doubt because of their affinity to third person singular subjects – but this does not restrain the use of contractions. As such, *it's gotta* and *that's gotta* emerge as typical representatives of epistemic modality (such as example (62)). Moreover, the

<sup>&</sup>lt;sup>36</sup> If one interprets the 'ambiguous' category as cases in which semantic detail simply does not matter, this, too, would be neutral in a sense, and the large share of *gonna* in this bin falls into place.

result that specific deontic uses have a higher rate of auxiliary drop than generic ones parallels the findings of Tagliamonte (2004) for northern British English<sup>37</sup>.

<u>want to / wanna</u>: Obviously, in most cases *want to/wanna* denotes volition (n=306, exemplified in (63)). Deontic *want to/wanna* is used to express non-authoritative advice or weak obligation, a kind of instruction that "create[s] the illusion that the source of potency is identified with the subject" (Desagulier 2005: 34). This type (exemplified in (64)) is also reasonably frequent in the SBC (n=58). It has been reported as a rather recent development and evidence of the form's "modalization" (Collins 2009: 152)<sup>38</sup>.

- (63) I didn't wanna get friendly with this fish. (SBC 015 1350.06)
- (64) ... but you don't wanna stretch those ligaments very much [...] while they're healing. (SBC 046 51.382)

modality type volition		deontic	
want to - wanna	80 - 226	8 - 50	- 0.0044
% wanna 74%		86%	p = 0.0341

Table 3-20: want to vs wanna by modality type

Table 3-20 shows that the newer, more grammaticalized use (deontic) has the higher rate of contraction. The contracted form may thus be interpreted as being more easily detached from the original meaning, indicating that it is beginning to be delineated from the full form. Conversely, this effect might be considered to be due to *wanna*'s informal character which favors its use for (indirect) advice in conversations of a more casual tone.

### Clause Type

This final variable refers to the syntactic embedding of the semi-modal.<sup>39</sup> Here this is operationalized by distinguishing three clause types, namely 'main clause', 'relative/complement clause' and 'question'. As deeper embedding, i.e.

He had the most beautiful looking place you ever didn't wanna see. (SBC 032 - 844.251)

<sup>&</sup>lt;sup>37</sup> with a slight difference in definition: Tagliamonte divided the subject *you* into generic and specific reference, whereas I consider whether the sentence has a generic or specific proposition (cf. Krifka et al. 1995).

<sup>&</sup>lt;sup>38</sup> Collins also discusses the potentially emerging epistemic use of *want to/wanna*, citing Krug's (2000: 150) example: *Coolers? They wanna be on the top shelves somewhere.* The example from the SBC that comes closest to this is the following:

<sup>&</sup>lt;sup>39</sup> In a study of complements to *going to/gonna* in British English, Gesuato & Facchinetti (2011) present data that include syntactic contexts but do not suggest strong differences between *going to* and *gonna* – the clearest deviations seem to be in past tense (disfavoring *gonna*) and with subject types, which are categories of the preceding item in the present analysis. (The authors themselves do not discuss the differences between full form and contraction.)

occurrence in a relative or complement clause, is linked with greater syntactic complexity, an intuitive expectation may be that these structures favor the longer and more explicit forms over contractions (cf. Rohdenburg 1996). This expectation is borne out in the results, at least for *gonna* and *gotta* (see Table 3-21). The examples (65)-(66) illustrate this difference for *got to/gotta*.

(65) A state which suddenly has got to wage war, three to four months march from its home base [...] (MICASE LEL215SU150)
(66) Aw man, we gotta get rid of some of this stuff, [...] (SBC 058 977.094)

clause type	main cl.	rel./compl. cl.	question	
going to - gonna	40 - 544 (93%)	25 - 180 (88%)	11 - 96 (90%)	p = 0.051
got to - gotta	30 - 146 (83%)	14 - 30 (68%)	0 - 0	p = 0.031
want to - wanna	51 - 173 (77%)	29 - 69 (70%)	8 - 34 (81%)	p = 0.302

Table 3-21: Full and contracted forms by clause type

#### 3.2.1.3. Summary of the Factors of Variation

The distributions presented above show that the variations between the full and contracted semi-modals are not random fluctuations – rather, they are complex and informed by many factors. Importantly, while we can see that the contractions are on the rise and moving towards independence, exhibiting signs of semantic and syntactic conditioning (type of modality and clause type, respectively), they are not entirely dissociated from constraints relating to phonetic reduction. It is clear that the variables *going to/gonna*, (HAVE) *got to/gotta*, and *want to/wanna* are not conditioned by the same factors in the same ways; where they do profess similarities, most notably with respect to speech rate and speakers' age, the quantitative differences suggest that *gonna* is the pacesetter in the emancipation process.

Just how strong each individual constraint is when the interplay of all factors is taken into account is explored in the next section, where the ten variables are employed in multivariate analyses of the variations of the full and contracted semi-modals, as well as an analysis of phonetically full versus reduced pronunciations of *going to* and *gonna*, and of the presence or absence of the auxiliary HAVE with *got to/gotta*.

## **3.3. Modeling the Variations – a Multivariate Approach**

This multivariate analysis examines the variations between full and contracted forms, based on the ten factors described above. The statistical model used is a Logistic Regression Model (LRM)<sup>40</sup>, which can accommodate factors of different types (here: numeric vectors, binary and multi-level categorical factors). This is used to estimate the weight and significance of each factor (or factor level) in relation to the influence of all other factors (cf. Baayen 2008, ch. 6). The procedure is explained in more detail with the application of the model to the variation of *going to* and *gonna* in the next section, which then serves as the methodological template for the subsequent analyses. This, I hope, makes the following subchapters consistent and comparable. It will be seen, however, that this method also has its limits, and adequate modeling of the data is sometimes hardly possible, especially when the data is scant or highly unbalanced. In such cases, we step away from the statistics and inspect the raw data.

In the analysis of *going to/gonna*, this variation is contrasted with a model for phonetically reduced realizations such as [gpində] or [ənə]. Modeling of the same factors (though adapted as needed) is then applied to (HAVE) *got to/gotta* as well as the presence or absence of the auxiliary HAVE, and to *want to/wanna*, including a comparison to phonetic reduction ([wpndə]). The contractions of *trying to* to "tryna" and *need to* to "needa" are also considered and compared. Moreover, apparent time developments are taken into account - to the extent this is possible given the limited amounts of data - through the comparison of variation models for older and younger speakers. Each variation is summarized at the end of the respective subsection. An overall conclusion of the chapter with an overview and discussion of the results is provided in 3.4.

### 3.3.1. The Variation of going to and gonna

The lrm function in R is used here to compute a logistic regression model (LRM) of the variation of *going to* and *gonna* that comprises all the ten predictors described above. Figure 3-7 presents the relevant summary statistics and an Analysis of Variance (ANOVA) of this model. As we can see, the model takes the choice of *going to* or *gonna* as the dependent variable, and the social and intralinguistic factors are integrated as independent variables, that is, their influence on the dependent variable is measured. The ANOVA lists the factors as a whole rather than by their individual levels; the number of levels of a

<sup>&</sup>lt;sup>40</sup> The Irm function is part of the package "rms" for R, formerly known as "Design" (Harrell 2008).

categorical is its degrees of freedom (listed as "d.f.") plus one. Thus, the ANOVA provides a good overview of the model, showing which factors are relevant to the variation. It should be noted, however, that the strength of a factor's influence cannot be read from the chi-square column, as these values are not directly comparable when they pertain to different types of variables (but this can be remedied by considering Z scores, see below). Nevertheless, the p-values in Figure 3-7 clearly show 'age' as the most significant factor, a significant effect for the type of modality, and a trend for the speaker's sex. The model in total is significant, even though a large number of tokens have to be ignored because they lack a value for one of the independent variables. Overall, however, there is a conspicuous absence of significant effects in Model 1. The C-value is a concordance value indicating how well the model accommodates the data it is based on – according to Gries (2009), the C-value "can be considered good when it reaches or exceeds approximately 0.8" (297). It exceeds that mark here, probably due to the sheer mass of information that the ten independent variables feed into the model. The D<sub>xy</sub> index (Somers' D) is derived from C by  $D_{xy}=2*(C-0.5)$ . The "explained variation" value  $R^2$  is described as a measure of "the proportion of variation of the dependent variable which can be explained by the predictor variables of a given regression model" (Mittlböck & Schemper 1999: 17). At R<sup>2</sup>=0.277, Model 1 offers a relatively low portion of explained variation, suggesting that there is high variability between going to and gonna, although the R<sup>2</sup> value is also affected by the low overall number of tokens for going to. However, the R<sup>2</sup> measure is known to be reliable only for linear regression models, whereas in logistic regressions, as used here, its meaningfulness is not so clear (cf. Baaven 2008: 204)41.

<sup>&</sup>lt;sup>41</sup> Baayen notes the problem that "the model produces estimates of the *probability* [that the binary dependent variable takes a value A or B], whereas our observations simply state *whether* [it is A or B]" (2008: 204), but nonetheless recommends considering R<sup>2</sup> in addition to C. So do Gries & Wulff (2012).

			Log	istic Regression Model 1
Variants going to 46 gonn	a 468	(378	ignored	due to missing values)
C=0.803 D <sub>xy</sub> =0.605	R <sup>2</sup> =0.249	)		
Factor overview (AN	<u>OVA)</u>			
Factor	Chi-Sq.	d.f.	Р	
speaker age	14.92	1	0.0001	***
speaker_sex	3.51	1	0.0611	
speaker_education	1.05	1	0.3054	
speaker_region	4.98	3	0.1734	
speech_rate	2.18	1	0.1379	
preceding_item	8.13	7	0.3212	
string_frequency	1.01	1	0.3146	
following_sound	0.17	2	0.9199	
modality_type	10.83	4	0.0285	*
clause_type	1.37	2	0.5044	
TOTAL	47.52	23	0.0019	**

Figure 3-7: Maximal factor model for going to vs gonna

Evidently, Model 1 can hardly be seen as an adequate description of the variation. It is based on the maximal assumption that each of the ten factors introduced in 3.2. somehow has a decisive influence, an assumption which is obviously incorrect. The model in Figure 3-7 is thus merely the starting point, from which we can eliminate non-significant factors in order to arrive at the minimal adequate model featuring only the significant factors (cf. Gries 2009: 296); in other words, "a model that we feel is both parsimonious and adequate" (Baayen 2008:236). Clearly, this requires taking the trends described in the previous section into account, as those factors that showed significant distributions in the tables in 3.2. should be considered more promising candidates for a meaningful minimal adequate model. Moreover, the entanglement between social factors that became apparent in 3.2. suggests possible interactions between those factors.

Indeed, an interaction of education and dialect region is included in the minimal adequate model, as presented in Figure 3-8. This model retains six predictors: 'age', the interacting variables 'education' and 'dialect region', 'preceding item', 'speech rate', and 'type of modality'. These are all statistically significant determinants of the variation, and the model's concordance value is good (C=0.87). Figure 3-8 lists the coefficients, but, like the Chi-square values in the ANOVA, these are no reliable indicators of effect size in logistic regression; therefore, we need to consider the Z values. The Z score (also called Wald's Z) is, for a vector or factor level, the coefficient

divided by the standard error,<sup>42</sup> and is used as an approximation to factor strength. In categorical factors, where each level is assigned its own Z score, this depends on which factor level is selected as the reference level. In the models presented here, this is always the most "average" level, i.e. the level whose distribution is closest to the overall distribution.<sup>43</sup> This allows for the best estimation of effects in both directions. The absolute value of Z indicates the strength of an effect; a positive Z signals a higher chance of contraction, a negative Z a lower one (with numeric vectors, this relates to the higher values of the vector, i.e. older speakers, more educated, higher speech rate).

		Ī	ogistic Re	egression N	<u>/Iodel 2</u>
Variants	,		`		
going to 51 gonna 538 (303 ignored du	ing to 51 gonna 538 (303 ignored due to missing values)				
C=0.870 $D_{xy}$ =0.741 R <sup>2</sup> =0.359					
<u>Factors:</u> speaker_age, speaker_education*speaker_region, preceding_item, speech_rate, modality type					
	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$	
Intercept	4.862	1.743	2.79	0.0053	**
speaker_age	-0.050	0.011	-4.57	< 0.0001	***
speaker_education	-0.145	0.062	-2.33	0.0200	*
speaker_region=west	2.972	2.445	1.22	0.2241	
speaker_region=north	-11.22	3.107	-3.61	0.0003	***
speaker_region=midlands	-8.805	2.323	-3.79	0.0002	***
preceding_item=PST	-0.632	0.657	-0.96	0.3361	
preceding_item='re	0.912	0.718	1.27	0.2040	
preceding_item=(pause)	0.656	1.170	0.56	0.5751	
preceding_item=ADV/NEG	1.806	0.962	1.88	0.0604	
preceding_item=I'm	-0.165	0.613	-0.27	0.7878	
preceding_item=NP	0.177	0.667	0.27	0.7905	
preceding_item=full BE	-1.379	0.654	-2.11	0.0350	*
speech_rate	0.393	0.150	2.62	0.0088	**
modality_type=intention	-0.588	0.611	-0.96	0.3363	
modality_type=ambiguous	0.403	1.180	0.34	0.7326	
modality_type=deontic	-3.002	1.082	-2.77	0.0055	**
modality_type=prediction	0.125	0.652	0.19	0.8479	
speaker_education * speaker_region=west	-0.224	0.142	-1.58	0.1131	
speaker_education * speaker_region=north	0.936	0.263	3.56	0.0004	***
speaker_education * speaker_region=midlands	0.524	0.137	3.83	0.0001	***

Figure 3-8: Minimal adequate model for going to vs gonna

<sup>&</sup>lt;sup>42</sup> Just as with coefficients, a numeric vector, such as age or speech rate, has one Z score, but with a categorical factor, each level receives a Z score. Because of these different predictor types in the models used here, the coefficients are not directly comparable to determine factor strengths.

<sup>&</sup>lt;sup>43</sup> The reference levels of the categorical variables in Model 2 are: speaker\_region=south, preceding\_item='s, and modality\_type=epistemic.

In Model 2 the speaker's age clearly emerges as the strongest determinant of the choice between *going to* or *gonna*, and achieves the highest Z score (Z=-4.57). The strong trend towards *gonna* in apparent time observed in 3.1. is thus confirmed, as it is not overruled by other factors.

The effects of the other social variables are more intricate. 'Education'<sup>44</sup> and 'dialect region' both show significant distributions on their own (Tables 3-6 and 3-8, respectively), and their interaction appears to have considerable predictive force. Recall that the contraction rates are higher in the North and the West compared to the Midlands and the South. The interaction with education, however, is such that the trend for more educated speakers to retain the full form *going to* is strongest in the West and also clearly present in the South. whereas in the North (with generally the highest rate of contraction) and the Midlands (lowest rate of contraction) the trend is not visible at all. (It seems to even be reversed in the North, however this is based on only six tokens of *going* to, produced by four different speakers.) As such, there is no correlation between the overall share of the contraction and the influence of the speaker's education in the four regions. Figure 3-9 illustrates this state of affairs: the lines represent the overall mean values for 'education' found with tokens of going to and gonna, and the bars represent the mean education value for the two variants in each region.



Figure 3-9: Mean education for tokens of going to and gonna

<sup>&</sup>lt;sup>44</sup> There is a considerable correlation of 'education' with 'age' in that up to the age of about fifty, education increases with age (cor=0.248). This has not been included in the model (as an interaction), because it will show more clearly in the age grading in the next section, and because including it does not improve the model.

There is no straightforward interpretation of this pattern. It should be noted, however, that the evidence from the SBC data is rather too sparse to draw firm conclusions. We can only state that there is variation along the lines of dialect region and education, and conjecture that the full form's association with higher education, and hence social prestige, is present in some cases but by no means universal.

As for intralinguistic variables, 'speech rate', 'preceding item' and 'type of modality' feature as significant in Model 2. The import of speech rate shows that the general effect of fast speech fostering contraction remains present in the use of *gonna*. However, this effect clearly falls behind that of 'age' and the social variables.

Additional significant effects are observed for 'preceding item' and 'type of modality'. As the Z scores and p-values show, a preceding full form of BE and deontic modality lower the chance of contraction. Conversely, the probability of contraction is slightly increased with preceding adverbs and negation markers.

The results of this model indicate that the factors determining the variation between *going to* and *gonna* are largely the social variables, of which 'age' is the most dominant. This indicates, firstly, that variant choice depends to a large extent on social connotations, which conforms to the general notion that *going to* is the more formal variant; secondly, the import of 'age' shows that the change towards more (possibly exclusive) use of the contraction is ongoing. Of the speech-related factors, that which points to a persistence of phonetic reduction is 'speech rate'. The effects of 'preceding element' and 'type of modality', on the other hand, can both be interpreted as effects of explicitness. Speakers tend to choose the fullest forms available when striving for explicitness, in this case full *is/am/are* and full *going to*; issuing a command (deontic modality) typically requires a high degree of explicitness. Note also that the effect of deontic modality is significant in Model 2 despite the fact that the data comprises only ten tokens of this type.

## 3.3.1.1. Full and Reduced Forms of going to and gonna

In order to investigate the extent to which *gonna* has shifted from a phonetic to a lexical variant, we compare this variation to one that is clearly phonetic, using the same method as described above. In this analysis the term 'variation' refers to the choice between *going to* and *gonna*, and 'reduction' to the distinction between full and reduced realizations of these.

The phonetic realizations have been manually coded in the data analysis upon careful listenings of each token. Five different pronunciation variants are annotated, which form a cline from the fullest to the most reduced form:

- 1. fully pronounced *going to* (n=61)
- 2. reduced *going to*, such as [goinə], [gondə] (henceforth "goinde", n=15)
- 3. fully pronounced *gonna* (n=692)
- 4. reduced gonna, [enə] ("ena", n=49)
- 5. monosyllabic *gonna*, [nə] or [gp] (n=73)

The realizations of *going to* (1.-2.) and *gonna* (3.-5.) are treated separately, however general conclusions are drawn about what factors influencing reduction.

#### Realizations of going to

For *going to* the token numbers are too low to apply a model with many factors. Nevertheless, a meaningful minimal adequate model is arrived at with two independent variables, 'sex' and 'speech rate' (Figure 3-10). Given its rather low concordance probability (C=0.728), however, we cannot draw firm conclusions from this model. This is particularly true for the marginal effect of 'sex' reported by the model; there is a trend for men to reduce *going to* more than women (29% and 13%, respectively) although they use it less overall (see 3.2.1.), but the consistency of this trend is uncertain. A more substantial effect is that of 'speech rate' (also noted in Table 3-22). As expected, rapid speech promotes reduction, while very low speech rates appear to preclude it.

		Ī	Logistic R	egression ]	Model 3
Variants 'goingto' 61 'goinde' 15					
C=0.728 D <sub>xy</sub> =0.456 R <sup>2</sup> =0.143					
<u>Factors:</u> speaker_sex, speech_rate					
	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$	
Intercept speaker_sex=m speech_rate	-5.183 1.037 0.526	1.770 0.617 0.260	-2.93 1.68 2.02	0.0034 0.0927 0.0430	** • *

Figure 3-10: Factor model of realizations of going to

speech rate	< 5 syll/sec	5-6 syll/sec	6-7 syll/sec	7-8 syll/sec	> 8 syll/sec
"going to" - "goinde"	15 - 0	21 - 5	15 - 5	7 - 3	3 - 2
% reduced	0%	19%	25%	30%	40%

Table 3-22: Realizations of going to by speech rate

#### Realizations of gonna

In the realization of *gonna*, the initial consonant may be dropped (usually in combination with a centering of the vowel, hence "ena"), and sometimes an entire syllable is swallowed, resulting in a monosyllabic realization such as "na". By far the most frequent realization is /gpnə/, with 692 out of 814 tokens (85%)<sup>45</sup>. The realization variants can be treated as a three-level ordered factor, from 3. to 5. in the list above, which is entered into the logistic regression model as an ordinal dependent variable. The resulting minimal adequate model is presented in Figure 3-11.

		Ī	Logistic R	egression l	Model 4
Variants 'gonna' (/gpnə/) 512 'ena' (/enə/) 40 monosyllabic 55 (207 ignored due to missing values)					
C=0.819 $D_{xy}$ =0.632 R <sup>2</sup> =0.304					
<u>Factors:</u> speaker_age, speaker_region, speech_rate, pr	receding_ite	em			
	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$	
y>=ena	-4.278	0.841	-5.09	< 0.0001	***
y>=monosyllabic	-5.092	0.855	-5.96	<0.0001	***
speaker_age	-0.024	0.010	-2.43	0.0152	*
speaker_region=south	1.685	0.370	4.56	<0.0001	***
speaker_region=west	-0.282	0.356	-0.79	0.4285	
speaker_region=midlands	-0.030	0.383	-0.08	0.9378	
speech_rate	0.338	0.082	4.14	<0.0001	***
preceding_item='s	-0.145	0.559	-0.26	0.7956	
preceding_item=PST	0.550	0.546	1.01	0.3144	
preceding_item='re	0.445	0.546	0.82	0.4148	
preceding_item=(pause)	-0.568	1.142	-0.50	0.6187	
preceding_item=ADV/NEG	-0.754	0.726	-1.04	0.2989	
preceding_item=I'm	2.284	0.450	5.07	<0.0001	***
preceding_item=full BE	0.397	0.872	0.46	0.6487	

Figure 3-11: Factor model of realizations of gonna

<sup>&</sup>lt;sup>45</sup> For two tokens, the realization could not be determined due to noise in the recording.

This model reveals that younger speakers tend more toward phonetic reduction, 'age' being a significant predictor. However, its effect is not nearly as strong as in the variation of *going to* versus *gonna*. Table 3-23, displaying the distribution of realizations across age groups, shows that there is a considerable gap between adolescents (11-24 years) and the elderly (over 65), however the rate of reduction fluctuates with the intervening age cohorts. Moreover, this effect may be a consequence of the rise of *gonna*: as *gonna* is more frequent with young speakers, it is more predictable and hence more susceptible to reduction (cf. Fosler-Lussier & Morgan 1999:156).

speaker age	11-24 years	25-34 years	35-49 years	50-65 years	> 65 years
"gonna"	130 (76%)	209 (88%)	155 (83%)	83 (89%)	36 (92%)
"ena"	17 (10%)	14 (6%)	14 (8%)	3 (3%)	0
monosyllabic	25 (15%)	15 (6%)	17 (9%)	7 (8%)	3 (8%)
total	172 (100%)	238 (100%)	186 (100%)	93 (100%)	39 (100%)

Table 3-23: Realizations of gonna by speaker's age

While 'age' certainly plays a role in the realization of *gonna*, other factors carry greater weight. The Z scores and significance levels<sup>46</sup> suggest that the three major factors of reduction of *gonna* are 'dialect region', 'speech rate', and 'preceding item'.

The effect of 'dialect region' is due to Southerners' inclination to reduce *gonna*. While all other regions display usage rates of the full form of 85%-89%, it is only 64% in the South – with 27% of all instances of *gonna* being monosyllabic (see Table 3-24). This cannot be ascribed to frequency alone, as *gonna* is no more established in the South than elsewhere (see Table 3-8 above). The stronger reduction tendency thus appears to be a dialect feature, which is in line with Clopper & Pierrehumbert's (2008) findings on vowel reduction.

dialect region	North	Midlands	South	West
"gonna"	123 (85%)	130 (89%)	54 (64%)	191 (89%)
"ena"	11 (8%)	7 (5%)	7 (8%)	13 (6%)
monosyllabic	11 (8%)	9 (6%)	23 (27%)	10 (5%)
total	145 (100%)	238 (100%)	186 (100%)	93 (100%)

Table 3-24: Realizations of gonna by dialect region

<sup>&</sup>lt;sup>46</sup> The reference levels of the multi-level factors in this model are dialect\_region=north and preceding\_item=NP.

As with *going to*, 'speech rate' has a strong effect on the realization of *gonna* (displayed in Table 3-25) – the higher the speech rate, the higher the chance of reduction. This is particularly notable in very fast speech (>8 syllables/second). This is an altogether expected outcome, as rapid speech is the prime determinant for phonetic reduction.

speech rate	< 5 syll/sec	5-6 syll/sec	6-7 syll/sec	7-8 syll/sec	> 8 syll/sec
"gonna"	93 (92%)	201 (91%)	191 (85%)	132 (85%)	75 (67%)
"ena"	2 (2%)	9 (4%)	16 (7%)	8 (5%)	14 (13%)
monosyllabic	6 (6%)	10 (5%)	19 (8%)	15 (10%)	23 (21%)
total	101 (100%)	220 (100%)	226 (100%)	155 (100%)	112 (100%)

Table 3-25: Realizations of gonna by speech rate

The way speech rate plays out across all the possible realizations of *going to/ gonna* (forms 1.-5.) reflects the distinction between variation and reduction very neatly. Figure 3-12 shows the curve of mean speech rates across realizations. As such, faster speech will produce more reduced pronunciations; the only point at which this does not hold is the transition from "goinde" to "gonna", i.e. at the boundary between the variants *going to* and *gonna*. This is evidence that, at least with respect to speech rate, *gonna* cannot be filed under 'reduction', and rather should come under 'emancipation'.



Figure 3-12: Mean speech rates of realizations of going to/gonna

Finally, the factor 'preceding item' is also a significant predictor of *gonna*realization. This is due solely to the most frequent element to precede *gonna*, namely *I'm*. Reduced realizations with other preceding items make up between 5% and 10%, as opposed to 44% with *I'm*. Most likely this is a chunking effect: Due to its high frequency, the string *I'm gonna* is processed more easily and is therefore susceptible to reduction, resulting in the realizations "I'm ena" (23%, see example (67)) and "I'mma" (21%, (68)). This factor thus reveals a straightforward frequency-induced reduction. In contrast the variation of *going to* and *gonna* (Table 3-11 above) does not conform to this.

- (67) Well by that time I'm gonna ["I'm ena"] be married (SBC 013 1037.04)
- (68) I'm gonna ["I'mma"] start dancing with those Brazilian women. (SBC 002 - 890.12)

#### 3.3.1.2. A Brief Summary of going to/gonna

When we compare the factor combination determining the variation between going to and gonna to that determining the phonetic reduction of these forms, they look superficially similar: a set of speaker-related variables, including age, plus the intralinguistic factors 'speech rate' and 'preceding item'. However, their respective weightings show stark contrast. While the variation between going to and gonna depends heavily on the speaker's age, this in fact plays a subordinate role in reduction. Similarly, whilst in variation the effect of dialect areas is tied to the speaker's level of education, the dialect effect on reduction can be pinned down to a particular region (the South). Most importantly, speech rate is a major determinant of reduction, along with the speech-related reducing effect on the string I'm gonna; in contrast, the effects of speech rate and the preceding item are present, but not very strong, in the variation between the full and contracted forms. These results are visualized in Figure 3-13, in which the arrows indicate the direction and strength of each effect (strength as indicated by the size of the arrows); dotted arrows are distributional trends that do not reach statistical significance in the multivariate model. The factors are grouped according to which aspect of variation they pertain to: change, sociolinguistic variation, phonetics/prosody, and semantics.



Figure 3-13: Overview of the factors of variation and reduction of *going to/ gonna* 

In very general terms, we might conclude that variation is a matter of who speaks, and reduction is a matter of how they speak. Thus, the variation is set apart from the reduction process.

As noted above, the factors 'speech rate' and 'preceding item' relate to the flow of speech and hence to phonetic reduction. Social variables may (and do) also influence reduction, but are expected to have a stronger effect on lexical variation. This is borne out here for the variation and realizations of *going to* and *gonna*, and is evidence that *gonna* has already covered much of the path from reduced pronunciation to a lexical variant. In particular, reduction appears to be a dialect feature of the South, while the sociolinguistic characterization of the variants *going to* and *gonna* is much more complex.

Yet, while *gonna* is advanced overall, it still shows some ties to its source form *going to*. The next section shows that these ties are becoming weaker over time.

#### 3.3.1.3. Change in the Use of going to/gonna

Grammaticalization has been associated with "changes in the constraint hierarchies" (Jankowski 2004: 101) when describing the usage of a

grammaticalizing form (see also Poplack & Tagliamonte 2001). Therefore, if a real change is in progress, not only in the increasing frequency of the contraction *gonna*, but also in its status as it moves from phonological to lexical variant, then this should manifest as a changing pattern of factors determining the variation. To test this, the data set is split into two groups according to the age of the speakers, i.e. 'older' and 'younger'. Given that the average age in the corpus is 39.7 years, this is taken as the dividing line, so speakers aged forty years and over form the 'older' set, speakers under forty are 'younger'. The resulting subsets comprise 290 tokens for 'older' speakers, with an 84.8% share of *gonna* (246/290), and 516 tokens for 'younger' with 94.6% *gonna* (488/516). Logistic regression models are applied to both subsets, following the same procedure as that above. Given the assumption that apparent time differences reflect actual change, the differences between the 'older' and the 'younger' model should then detail developments in what factors determine the variation.

Figure 3-14 presents the minimal adequate logistic regression model for *going to* versus *gonna* among the 'older' and 'younger' speaker groups – as depicted, no factor or combination of factors is found to be significant for the 'younger' group. It should also be noted that the situation presented for older speakers is not as definite as may seem. Although conforming to Baayen's (2008) "rule of thumb" that "there should be at least fifteen times more observations than coefficients" (195; see also Harrell 2001: 61), the reduced data size here makes for a less reliable model. In terms of the factors considered, 'education' would also have been a good candidate, but is not included here.<sup>47</sup> Thus, Model 5 is the most adequate model given the data, but it is a somewhat fragile construct.

<sup>&</sup>lt;sup>47</sup> The small size of the data set prohibits modeling interaction of education and dialect region; even taking up the two factors individually confounds the model, partly because more data is lost due to missing values for 'education'.

			Logistic 1	Regressior	<u>n Model 5</u>
older speakers (≥40years)					
<u>Variants</u> going to 36 gonna 206 (48 ignored of	due to mis	ssing valu	es)		
C=0.807 D <sub>xy</sub> =0.614 R <sup>2</sup> =0.258					
<u>Factors:</u> speaker_age, speaker_region, preceding_item	1				
			Wald		
	Coef	<u>S.E.</u>	Z	$\underline{Pr(> Z )}$	
Intercept	4.902	1.080	4.54	< 0.0001	***
speaker age	-0.063	0.016	-3.95	< 0.0001	***
speaker_region=north	2.442	0.808	3.02	0.0025	**
speaker_region=west	0.897	0.800	1.12	0.2621	
speaker_region=south	0.710	0.528	1.35	0.1783	
preceding_item='re	0.459	0.826	0.56	0.5785	
preceding_item='s	0.008	0.703	0.01	0.9912	
preceding_item=(pause)	0.140	1.227	0.11	0.9091	
preceding_item=ADV/NEG	0.789	0.985	0.80	0.4229	
preceding_item=I'm	0.132	0.730	0.18	0.8567	
preceding_item=NP	-0.336	0.739	-0.45	0.6497	
preceding_item=full BE	-1.539	0.756	-2.04	0.0418	*
younger speakers (<40years)					
Variantsgoing to 28gonna 488					
< no significant effects > (all factors have p>0.1)					

Figure 3-14: Factor models of going to vs gonna for older and younger speakers

In spite of these limitations, it is clear that 'age', even though its range has been cut by thirty years, remains the strongest determinant in the 'older' group of speakers. This again shows how forceful the frequency increase of *gonna* has been<sup>48</sup>. Next to age, we again find the social variable 'dialect region'; speakers from the North are more likely to use the contraction. One should not, in the absence of other evidence, jump to the conclusion that *gonna* was once a Northern dialect feature; nonetheless, it is reasonable to state that a speakerrelated (regional/social) variation persists among the older generation of speakers of American English. Results for this group also show that an

<sup>&</sup>lt;sup>48</sup> This forceful frequency increase is examined in detail in chapter 4. One might even speculate on a connection between the age groups here and the diachronic development: The SBC recordings largely date from the mid-1990s, so all the speakers in the 'older'-set were born in or before the 1950s. Given that the major rise in the contractions' frequency occurs in the late 1960s, the youngest cohort of 'older' speakers in the SBC may be seen as the generation associated with the proliferation of the contractions.

intralinguistic effect holds for preceding full BE, which favors *going to*; recall that this is linked to explicitness and formal style. In sum, in the subset of older speakers we find a subset of the effects determining the overall variation (Model 2, Fig. 3-8). Interestingly, the persisting influence of speech rate found in the overall model is not significant in either of the subsets modeled in Figure 3-14, but rather remains stable on a low level across generations<sup>49</sup>.

With younger speakers, the contraction is already overwhelmingly dominant, and the few instances of *going to* do not pattern in any significant way. One might wonder whether the low number of *going to* tokens and the pervasive dominance of *gonna* in this data set have thrown off the statistical modeling, while the constraints on the contraction really persist on a smaller scale. Closer examination of the data suggests that the constraints are really changing: the differences indeed level out and the constraints disappear. This is depicted in the graphs in Figure 3-15 for the factors 'preceding item' and 'dialect region', where the differences that hold with older speakers are no longer present in the younger age group; for 'education' the same trend is observed, even though it does not appear as a determinant of the variation in the older speaker group in Model 5.

 <sup>&</sup>lt;sup>49</sup> the mean speech rates confirm this:
 Older speakers: going to - 5.87 syll/sec, gonna - 6.25 syll/sec
 Younger speakers: going to - 6.31 syll/sec, gonna - 6.68 syll/sec

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<sup>&#</sup>x27;education'

It would seem reasonable to expect at least one factor to persist with the younger speakers, suggesting a (contextual, semantic, or social) niche into which *going to* is withdrawing. As no such niche is found, it is possible that the periphrastic future *going to* is actually disappearing from spoken American English in general.<sup>50</sup> Speculation aside, what has become clear is that if *gonna* was formerly associated with a social stigma and stylistic restrictions, it has since shed these constraints in spoken language and is winning out across the board. The changes in the variation observed here ring with Poplack & Tagliamonte's statement that "[w]here early effects are no longer operative [...], we may infer that the change, if not complete, is well advanced" (2001: 226)<sup>51</sup>.

<sup>&</sup>lt;sup>50</sup> In a similar scenario, Poplack & Malvar (2007) found a semantic distinction ('temporal distance') to level out as declining variants exit the system of future reference in Brazilian Portuguese.

<sup>&</sup>lt;sup>51</sup> In their study, "the change" is the grammaticalization of *going to* in African American Vernacular English.

This picture is almost reversed when looking at the realizations of *going to* and *gonna* over the two generations. In order to retain a useful number of tokens, *going to* and *gonna* are conflated in this model – the distinction in the dependent variable is now between full realizations ("going to", "gonna") and reduction ("goinde", "ena", monosyllabic). Reduction is rare in the older group (10.5% or 30/288) and does not abound in the younger group, though it is clearly more established (19.5% or 100/512). In spite of this, the minimal adequate factor models yield clear and robust results; the models for older and younger speakers are presented in Figure 3-16.

older speakers (≥40years)
Variantsfull realization 216reduced realization 25(49 ignored due to missing values)
C=0.827 $D_{xy}$ =0.653 R <sup>2</sup> =0.237
Factors: speaker_region, speech_rate
$\frac{\text{Wald}}{\text{Coef}}  \frac{\text{Pr}(\geq l}{\text{Z}}$
Intercept -6.564 1.179 -5.57<0.0001 ***
speaker_region=west 0.637 0.756 0.84 0.3990
speaker_region=midlands -0.481 0.671 -0.72 0.4732
speaker_region=south 1.206 0.652 1.85 0.0645.
speech_rate 0.621 0.150 4.14<0.0001 ***
Logistic Regression Model 6b         younger speakers (<40years)
C=0.819 $D_{xy}$ =0.637 R <sup>2</sup> =0.349
<u>Factors:</u> speaker_age, speaker_region, speech_rate, preceding_item
Coe Wald Pr(>
$\underline{f}$ <u>S.E.</u> <u>Z</u> <u>Z</u>
Intercept -2.966 1.005 -2.95 0.0032 **
speaker age $-0.040 \ 0.023 \ -1.72 \ 0.0858$ .
speaker_region=midlands -0.130 0.473 -0.27 0.7834
speaker_region=south 1.806 0.461 3.92 <0.0001 ***
speaker_region=west -0.261 0.403 -0.65 0.5168
speech_rate 0.223 0.096 2.32 0.0204 *
preceding_item='re 0.010 0.662 0.02 0.9876
preceding_item='s -0.385 0.633 -0.61 0.5430
preceding_item=(pause) $-0.397  1.194  -0.33  0.7398$
preceding_item=ADV/NEG -0.515 0.695 $-0.74  0.4592$
preceding_item=1'm $2.361 \ 0.503 \ 4.69 \ <0.0001^{***}$
preceding_item=full BE 0.863 0.814 1.06 0.2891

Figure 3-16: Factor models of realizations of *going to/gonna* with older and younger speakers

Here, the trend is from fewer to more numerous predictors. With older speakers it is predominantly 'speech rate' that determines reduction, while 'dialect region' (the South) is an already present, but secondary, determinant. With the

younger generation, however, 'speech rate' is backgrounded, and the major effects come from the high rates of reduction in the South and in the chunk *I'm gonna*. Even 'age' exhibits a marginal effect here, with the youngest speakers showing a greater tendency towards reduction.

The trajectory is therefore from reduction as a 'speeding accident' (tied to rapid speech) to established phonological variation, with reduction as a (southern) dialect feature and a common alternative pronunciation /aɪmə/ for *I'm gonna*. This pronunciation variant may well be a consequence of the conventionalization of *gonna*, given that /aɪmə/ as a realization variant of *going to* would be a rather extreme case of reduction ([gouŋ to] -> [ə]). If the base form is conceived of as *gonna*, on the other hand, the reduction only involves dropping one syllable and assimilating /n/ to /m/, which appears rather natural.

Clearly the apparent time development from one generation to the next is fundamentally different for the contraction *gonna* and phonetic reduction of *going to/gonna*. Moreover, both developments support the hypothesis that *gonna* has become an independent item. This is reflected in the diminishing social and intralinguistic constraints on its use as it emerges as the default variant in all registers and varieties of spoken American English.

In spite of these results in spoken language, there is still a strong convention of avoiding the contraction in written registers. Also, language users are generally aware of the connection between gonna and going to. This awareness appears to have little impact on gonna's every-day use in speech, but exerts considerable influence on writing practices, such that gonna is avoided in favor of going to, except in representations of spoken language. This might simply mean that the development in written language trails behind that in spoken language, which is usual in cases of change from below (cf. Labov 1994). Regarding the emancipation of gonna, it means that victory is not yet complete. The current diglossia in the use of the two variants, i.e. 'say gonna, write going to', implies that going to is still formal and gonna colloquial. This neat division may be on the verge of faltering, as gonna is now so widely used that it could soon become acceptable, and eventually favored, in even the most formal styles of spoken language; from this point on, it could make its way into the written registers. This is, of course, a speculative forecast. What this study can ascertain is that gonna's emancipation is now far enough advanced to make this scenario conceivable.

#### 3.3.2. The Variation of (HAVE) got to and (HAVE) gotta

Unlike *going to/gonna*, the semi-modal (HAVE) *got to/gotta* is no longer on the rise. Thus, in order to understand *gotta*'s status with respect to *got to*, we need

to first look at what defines these variants' position against the increasingly dominant HAVE *to* in the realm of 'obligation/necessity'. To this end, the ten predictors listed above are fed into a model comparing the use of HAVE  $to^{52}$  and (HAVE) *got to/gotta*, based on data from the SBC. In total, HAVE *to* represents 67.8% (234 tokens) of the variation, leaving (HAVE) *got to/gotta* with 32.2% (112 tokens). Figure 3-17 displays the resulting minimal adequate model – here, a positive Z score indicates an increased propensity for the *got*-variant, i.e. (HAVE) *got to/gotta*.

		Ī	ogistic Ro	egression	Model 7	
<u>Variants</u> have to 216 (have) got to/gotta 99 (31 ignored due to missing values)						
C=0.762 D <sub>xy</sub> =0.524 R <sup>2</sup> =0.244						
<u>Factors:</u> speaker_age, preceding_item, following_sou	ind, modalit	y_type, c	lause_typ	e		
	Coef	<u>S.E.</u>	<u>Wald Z</u>	<u>Pr(&gt; Z )</u>		
Intercept	-1.716	0.585	-2.94	0.0033	**	
speaker_age	0.024	0.008	2.91	0.0037	**	
preceding_item=you	0.847	0.495	1.71	0.0866		
preceding_item=3rd pers sing	-0.552	0.596	-0.93	0.3547		
preceding_item=I	0.797	0.509	1.57	0.1176		
preceding_item=we/they	-0.467	0.558	-0.84	0.4027		
following_sound=(pause)	-0.240	0.500	-0.48	0.6310		
following_sound=voiceless consonant	0.640	0.300	2.14	0.0327	*	
modality_type=epistemic	1.517	0.671	2.26	0.0239	*	
modality_type=root generic	-1.081	0.325	-3.32	0.0009	***	
clause_type=relative/complement	-1.085	0.423	-2.56	0.0104	*	

Figure 3-17: Factor model of HAVE to versus (HAVE) got to/gotta

This model shows a number of effects, however at C=0.762 its predictions cannot be interpreted as completely reliable, and some caution is therefore in order. Nevertheless, at least for the stronger effects, we may assume that their import is real.

The factor 'age' here replicates what we have already seen in section 3.1 (Figure 3-3): younger speakers prefer HAVE *to*. This strong effect comes as no surprise. However, the results indicate that the variation is also determined by some grammatical variables. The factor 'preceding item' is a possible but

<sup>&</sup>lt;sup>52</sup> Instances in past tense (*had to*), DO-support contexts (*Do we have to...*), and occurrence after a modal (*might have to*) were excluded, as there is no variation with (HAVE) *got to/gotta* in these contexts.

uncertain candidate<sup>53</sup>. Model 7 suggests that preceding *you* slightly favors the *got*-variant, which could be a frequency effect, as *you* is also the most frequent item in the set (with 125 tokens). This, however, is only a marginal effect, and indeed, (HAVE) *got to/gotta* occurs after *you* only slightly more frequently than in other contexts (36% compared to 30.3%). As for 'following sound', voiceless consonants appear to somewhat disfavor HAVE *to*, with its share reduced to 56% (56 out of 100 tokens) in this context. As seen above (Table 3-17), voiceless consonants also favor *gotta* over *got to*. It is possible that the voiceless /t/ in *to* is generally avoided before another voiceless sound, which can be achieved by using *gotta*, i.e. /gprə/ (a realization /hævdə/ of *have to* is possible but probably not as common).

The factor 'type of modality' exhibits strong effects, suggesting a possible semantic niche for the declining variant cluster (HAVE) *got to/gotta*. This niche would be epistemic modality, in which it retains a share of 60% (9 out of 15 instances). Epistemic necessity has been known to disprefer HAVE *to* in most varieties of English, often in favor of *must* (Collins 2005). Epistemic uses of HAVE *to* and (HAVE) *got to/gotta* have been reported to be a feature of North American English (Tagliamonte & D'Arcy 2007). The same may be true for the pronounced preference for HAVE *to* in generic uses (78%; example (69)), as it matches Myhill's (1996) note on post-World-War-II American usage: "For specific obligations, *got to* is normally used, as it is more individual" (370). Moreover, this result contrasts with Tagliamonte & Smith's (2006) finding that this same reference type favors (HAVE) *got to* in British, Scottish and Northern Irish varieties<sup>54</sup>.

Finally, relative and complement clauses favor HAVE *to* more than main clauses (example (70)). This shows that, HAVE *to* and the *got*-variants are also different in their syntactic distribution. Given that main clauses are the syntatically simpler structures, this is in line with the more colloquial flavor of (HAVE) *got to*.

## (69)[...] then why does everybody always have to go through Mexico (SBC 015 47.575)

(70)[...] and then all of our paperwork that has to move (SBC 043 301.176)

All the determinants featured in this analysis - 'age', 'preceding item', 'following sound', 'type of modality', and 'clause type' - will be seen to also bear on the variation of *got to* and *gotta*. As such, when analyzing the

<sup>&</sup>lt;sup>53</sup> In the variable 'preceding item' the categories 'adverb' and 'pause' were conflated to compensate for their low token numbers. The new category, 'other', also forms the reference level.

<sup>&</sup>lt;sup>54</sup> However, Tagliamonte & Smith define genericness by the subject (generic *you*), not by the proposition of the sentence.

characteristics of the use of gotta, we need to keep in mind how HAVE *to* is expanding.

### 3.3.2.1. The Variation of gotta and got to

The success of HAVE *to* in expressing obligation/necessity gives the emancipation of *gotta* from *got to* an additional dimension. The question is then whether *gotta* is independent enough to survive the decline of its source form, and whether it is conventionalized enough to stand its ground against HAVE *to*. To approach this question, we need to investigate how the contraction diverges in usage from its source form. Therefore, *gotta* is contrasted with *got to*, regardless (for now) of the presence or absence of the auxiliary HAVE. Note, again, that the combined data of the SBC and MICASE are used, which means that the factor 'age' is rendered in four groups rather than by precise age, and 'education' and 'dialect region' are excluded – Although unfortunate, this loss of information is not material as the SBC data alone do not suggest any significant effect of these factors (see Tables 3-6 and 3-8). The minimal adequate model of *got to* versus *gotta* is presented in Figure 3-18.

	Logistic Regression Model 8
Variants got to 40 gotta 167 (1	ignored due to missing values)
C=0.791 D <sub>xy</sub> =0.583 R <sup>2</sup> =0.252	
Factors: age_group, preceding_item, follow	ng_sound
	<u>Coef</u> <u>S.E.</u> <u>Wald Z</u> <u>Pr(&gt; Z )</u>
Intercept	1.399 1.585 0.88 0.3773
age_group	0.296 1.194 0.25 0.8045
age_group=3	-1.361 2.196 -0.62 0.5356
age_group=4	-2.275 3.363 -0.68 0.4988
preceding_item=you	1.205 0.551 2.19 0.0287 *
preceding_item=3rd pers sing	-0.856 0.549 -1.56 0.1192
preceding_item=I	0.560 0.595 0.94 0.3464
following_sound=pause/vowel	-0.449 0.643 -0.7 0.4849
following_sound=voiceless conso	nt 1.108 0.542 2.05 0.0407 *

Figure 3-18: Factor model of (HAVE) gotta versus (HAVE) got to

As for the descriptive quality of this model, the C and  $D_{xy}$  values suggest that it is a slightly less than perfect fit. Moreover, it reports only two significant

effects. Thus, it appears that this variation is relatively free, or at least cannot be fully described by the determinants considered here. Nevertheless, Model 8 yields plausible trends, so we may consider it a useful but tentative result.

A few confounds need to be noted with respect to this model. Firstly, the factor 'age group' is included because the overall trend (from "1" to "4") is relevant, even though none of the levels show a strong effect individually. The analysis of variance (ANOVA) of Model 8 yields the following p-values for the factors represented:

age_group	p=0.0996
(Nonlinear	p=0.7734)
preceding_item	p=0.0015
following_sound	p=0.0724
TOTAL	p=0.0006

According to the ANOVA, 'age' is a marginally significant predictor for the use of *gotta* versus *got to*. The list also shows that 'preceding item' is the most important factor, so this is considered in some detail below. An additional necessary observation is that some factors showing significant distributions when considered individually are not part of the model, namely 'speech rate' (Table 3-10), 'string frequency' (Table 3-15) and 'clause type' (Table 3-21). In particular, 'speech rate' is correlated with 'age' in that younger speakers talk faster, and 'string frequency' is correlated with 'following sound' because the most frequent collocates (*be, get, do, go*) all start with a voiced consonant.

The effect of 'age' is, as expected, that the share of the contraction is smaller with older speakers than with younger speakers. It would seem from Model 8 that the factor 'age' overrides 'speech rate', as the latter does not contribute to the model. Yet this issue cannot be completely resolved. Table 3-26 shows the correlation of age and speech rate in the present data set: it is precisely the oldest speaker group that has a markedly slower speech rate as well as a markedly lower rate of contraction.

age group	17-23 years	24-30 years	31-50 years	> 50 years
mean speech rate	6.51 syll/s	6.46 syll/s	6.27 syll/s	5.69 syll/s
% gotta	89%	95%	83%	68%

Table 3-26: Correlation of speech rate and age

The analysis of variance assigns the highest significance to the factor 'preceding item'. Its levels differ vastly in their distribution of *got to* and *gotta* (see Table 3-11 above). While *you* favors the contraction, third person singular

subjects disfavor it. Some, however, do not follow this trend: expletive *there* occurs with *gotta* four out of five times, pointing to an epistemic chunk *there's gotta be*<sup>55</sup> (see example (71)). Thus it appears that speakers tend to say *He's got to*, *There's gotta be*, and *You gotta*.

#### (71)[...] after all it's dielectric, there's gotta be plastic somewhere (MICASE MTG485SG142)

All of this can be seen as the effect of chunking – the more "chunked", the higher the chance of contraction. Thus, the contraction is tied to automization (within a chunk) and hence to phonological reduction. It would seem, however, that the contracted form spreads from the construction's most frequent environments (i.e. within chunks) to less frequent ones. Thus, while *gotta* undeniably shows persisting traits of phonetic reduction, it is also moving towards independence.

Finally, Model 8 reports a strong preference for *gotta* when a voiceless consonant follows. As seen above, a following voiceless sound is also a dispreferred environment for HAVE to, and thus particularly favorable for (HAVE) gotta. In the model, this effect also obliterates that of 'string frequency', as the most frequent verbs to co-occur with gotta/got to (be, do, get) all start with a voiced consonant, prompting the use of got to. However, a closer look at the data reveals another pattern: when taking only following voiceless consonants into account, string frequency does not play a role (p=0.6855), but it retains its effect (p=0.0197) when only following voiced consonants are considered<sup>56</sup>. The 'following sound', on the other hand, remains significant (p=0.0364) even when the four most frequent collocates (be, get, do, go, all with voiced consonants) are excluded. Thus, we can conclude that got to is disfavored with following voiceless consonants for reasons of ease of pronunciation (as discussed above). Following voiced sounds, on the other hand, allow more variation, and here the frequency of the collocation matters – interestingly, high frequency collocations occur with the full form more often. Although this might be a conserving effect of frequency, a functional explanation seems more likely: verbs like be, get, do, go carry little or very unspecific meaning, therefore emphasis is shifted away from them and placed on the modal expression instead. Phonetically, got to has a stronger propensity for emphasis than gotta. Consider example (72), in which it is next to impossible to stress get, while got to will receive at least a secondary stress.

<sup>&</sup>lt;sup>55</sup> Clearly, this chunk has to be defined by its function as well as frequency – to put it into perspective, COCA lists 52 instances of *there's gotta be* and 546 of *there's got to be*.

<sup>&</sup>lt;sup>56</sup> This may seem to suggest the includision of an interaction between 'following sound' and 'string frequency' – however, this interaction does not rate as significant when included in the model, perhaps because it is too specific and token numbers are too low.

(72) *if it's really true that all frames of reference are on an equal basis, everybody's got to get the same value for the speed of light.* (MICASE LEL485JU097)

All in all, *gotta* is increasingly favored over *got to*, but both are declining under pressure from HAVE *to*. The contraction's dependence on chunking effects does not *per se* speak in favor of its emancipation, but it shows that the form has spread into low-frequency collocations; for example, even third person singular subjects occur with (HAVE) *gotta* about half of the time. Additionally, the chunking effect only concerns the subject (i.e. 'preceding item'), while other forces are at work with respect to the following verb. Here, too, *gotta* reveals a lingering preference for its most fertile soil – a following voiceless consonant. This is a phonological constraint that, along with *gotta*'s reluctance to carry emphasis, points to a persistence of phonetic reduction in the status of *gotta*. Clearly, then, *gotta*'s case for emancipation is not as far advanced as that of the more frequent *gonna*.

#### 3.3.2.2. The Auxiliary HAVE

The contraction *gotta* is preferably used without the auxiliary HAVE (72% omission rate), whereas *got to* tends to retain it (23% omission). This makes sense from both perspectives on *gotta*, i.e. as either a phonological or a lexical variant. Phonologically, a higher degree of reduction is achieved by not only contracting *got to* but also by reducing the auxiliary to zero. Lexically, *gotta* does not come in the form of a present perfect, hence the auxiliary is functionally superfluous. In spite of this apparent parsimony, the retention or omission of HAVE is subject to different constraints than the choice of *got to* or *gotta*. Figure 3-19 presents the minimal adequate model for this variation (Model 9); a positive Z score here indicates a higher chance of auxiliary omission.
			L	ogistic Re	egression ]	Model 9
<u>Variants</u> HAVE got to/gotta 83	$\emptyset$ got to/gotta 1	137				
C=0.795 $D_{xy}$ =0.590 R <sup>2</sup> =0.375						
<u>Factors:</u> speech_rate, preceding_item						
	<u>(</u>	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$	
Intercept	-	1.323	1.002	-1.32	0.1865	
speech_rate		0.357	0.150	2.37	0.0176	*
preceding_item=3rd pers sing	-	3.543	0.848	-4.18	< 0.0001	***
preceding_item=I		0.066	0.519	0.13	0.8997	
preceding_item=pause		1.359	1.146	1.19	0.2356	
preceding_item=you		0.132	0.495	0.27	0.7900	

Figure 3-19: Factor model of presence versus absence of HAVE with gotta/got to

The effect of 'speech rate' - rapid speech promotes auxiliary omission - is a typical reduction feature. As HAVE usually occurs in its cliticized form 've, dropping it altogether eliminates a coda from a syllable and avoids a sequence of two consonants (formed with the /g/ from the following *got(ta)*). In this respect, auxiliary omission is not the choice of a variant *gotta* over HAVE *gotta* (or *got to* over HAVE *got to*), but the more or less accidental loss of a morpheme by skipping a sound – this, however, requires that the morpheme be regarded as dispensable. This optional omission distinguishes the auxiliary HAVE in this construction from the auxiliary BE in BE *gonna*, which, although functionally superfluous, is generally retained even in rapid speech and when *gonna* is phonetically reduced.

The strongest effect presented in this model is by far the retention of the auxiliary *has/'s* with third person singular subjects. This comes close to an absolute rule and as such it seems to be based on the form of the auxiliary (*has/'s* rather than *have/'ve*). This morphophonological constraint can also explain the distribution with respect to the type of modality (that epistemic uses retain HAVE, see Table 3-19): epistemic statements tend to be made about third person subjects<sup>57</sup> and therefore include the auxiliary. On a similar note, Jankowski (2004) associates *gotta/got to* (without HAVE) with strong obligation due to its preference for first and second person subjects – most likely, however, this is a side effect of third person singular subjects demanding the auxiliary, rather than a consequence of the modality expressed.

 $<sup>^{\</sup>rm 57}$  in 20 out of 27 cases in the SBC/MICASE data

These data suggest another effect of 'preceding item', which does not reach significance due to its rarity: a preceding pause or beginning of a phrase favors variants without HAVE (9 out of 10 instances). This may be expected in cases where the subject is omitted (as in (73)), as the auxiliary attaches to the subject. However, the data include only two such instances. All other preceding pauses are simply hesitations or disruptions of the speech flow.

# (73) *My sister made a loaf of bread, ... gotta have a piece.* (SBC 50 - 460.070)

An interesting note is that these distributions are strikingly similar to those found in the analysis of HAVE *to* versus (HAVE) *got to/gotta*. In other words, auxiliary omission is strong where HAVE *to* is weak (i.e. with a preceding pause), and HAVE *to* is strong where the auxiliary is required (3rd person singular)<sup>58</sup>. Thus, by their distribution as well as their historical development, the variants *got to/gotta* exhibit a greater distance from HAVE *to* than do HAVE *got to/gotta*. In light of the current developments, one might speculate that HAVE *got to/gotta* will be first to be replaced by the resurgent HAVE *to*.

# 3.3.2.3. A Brief Summary of (HAVE) got to/gotta

The effects and distributions in the variations between *got to* and *gotta*, and auxiliary retention and omission, are summarized in Figure 3-20; again, the size of the arrows indicates the strength of the respective factor<sup>59</sup>. As in the previous summary of *going to/gonna* (Figure 3-13), Figure 3-20 also shows which factor is linked to which area of grammar.

<sup>&</sup>lt;sup>58</sup> A contrary observation may be made with respect to epistemic modality, disfavoring HAVE *to* but favoring HAVE *got to/gotta*, if its non-significance in the model is set aside.

<sup>&</sup>lt;sup>59</sup> The dotted arrows stand for factors that exhibit a significantly skewed distribution, but whose effect does not reach significance level in the multivariate model.



Figure 3-20: (HAVE) got to/gotta – overview

Figure 3-20 visualizes how *got to* and *gotta* are subject to complex variation in which many factors potentially play a role, of which the chunking effects associated with the preceding item are the strongest predictor for contraction. In contrast, auxiliary omission appears to occur by relatively clear-cut criteria – firstly, a morphophonological rule stipulating that the auxiliary be retained in the third person singular; secondly, the auxiliary may fall victim to reduction in rapid speech. Thus, even though the prefered forms are HAVE *got to* and  $\emptyset$  *gotta*, it is only third person singular subjects that show a clear effect towards both the full form and auxiliary retention.

Compared to *gonna*, the case for *gotta*'s emancipation appears doubtful, as its favoring contexts are tied to phonetics and chunking, which relates the contraction rather to phonetic reduction than lexical variation. This matches expectation given the lower frequency of *gotta* and the decline of the entire HAVE *got to/gotta* construction at the expense of HAVE *to*. Still, *gotta* is preferred over *got to*, and increasingly so; thus it is already poised to supersede its source form.

### 3.3.2.4. Changes in the Use of (HAVE) got to/gotta

As *gotta* increasingly replaces *got to* in spoken American English, the question remains whether this change in relative frequencies comes with a change in the pattern of variation, and if so, whether the change in variation indicates a change in the status of *gotta* towards an independent item. These questions are addressed using the same procedure as for *going to/gonna* by splitting the data set into older and younger speakers. This time, however, 'older' speakers are those over thirty years of age, as predetermined by the age groups in MICASE<sup>60</sup>. This is problematic, however, as it leaves only 55 tokens in the 'younger' group, of which a mere 5 represent the full form. The logistic regression modeling for these subsets is therefore of limited informative value; it is presented in Figure 3-21.

			: D	·
alder sneakers (>30vears)		<u> </u>	<u>_ogistic R</u>	egression Model 10
older speakers (> Soyears)				
Variants				
got to 35 gotta 117				
C=0.744 D <sub>xy</sub> =0.488 R <sup>2</sup> =0.211				
Factors:				
preceding_item, following_sound				
	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$
Intercept	0.483	0.451	1.08	0.2784
preceding_item=you	1.174	0.583	2.02	0.0439 *
preceding_item=3rd pers sing	-0.876	0.594	-1.32	0.1857
preceding_item=I	1.172	0.653	1.79	0.0728 .
following_sound=voiceless consonant	0.956	0.547	1.73	0.0835 .
younger speakers ( $\leq$ 30years)				
Variants				
got to 5 gonna 50				
< no signit	ficant effe	cts >		
(all factor	s have p>	0.1)		
	1	/		

Figure 3-21: Factor models of *got to* versus *gotta* for older and younger speakers

<sup>&</sup>lt;sup>60</sup> MICASE's age group 3 ranges from 31 to 50 years - thus, by making the split at 30, age groups 1 and 2 make up the 'younger' set, and 3 and 4 count as 'older'.

At first sight, Model 10 seems to suggest that *gotta* follows a very similar development to that of *gonna*. Two determinants<sup>61</sup>, both of prosodic nature, are found for the variation among older speakers, as opposed to none for the younger generation. However, with only 5 tokens of the full form, the younger speakers simply do not provide enough data for a conclusive statistical calculation. Moreover, even the model for older speakers is not entirely reliable (C=0.744). We may therefore only tentatively conclude that the contraction-favoring effect of preceding *you* (and perhaps *I*) is receding. This is also evident when comparing the raw data across generations. It can also be gleaned that following voiceless consonants stay ahead of voiced sounds in their preference for the contraction (reaching up to 100% in the present data). Moreover, the finding that complement and relative clauses appear to somewhat inhibit contraction (Table 3-21) does not change across generations. These observations are presented in Figure 3-22.



Figure 3-22: Factors of gotta with older and younger speakers

<sup>&</sup>lt;sup>61</sup> For 'following sound', the levels 'vowel' and 'voiced consonant' are conflated to enable statistical modeling.

The graphs in Figure 3-22 suggest that the influence of these factors on the use of *gotta* does not really disappear with younger speakers. Only in the first graph does the gap narrow; older speakers tend to use *gotta* with the most frequent subjects, *I* and *you*, whereas for the young generation, although a slight preference remains, the other contexts are closing in. In this respect, *gotta* has almost completed the expansion from frequent into rarer environments.

The results from the models display the contraction's impressive majority among younger speakers, suggesting that *gotta* is indeed unconditionally displacing *got to* (just as *gonna* is displacing *going to*) in spoken American English. The emancipation of *gotta* is not as far advanced as *gonna*, as it still exhibits stronger ties to phonetic and prosodic factors. Evidence of emancipation in apparent time is found in only one factor, 'preceding item', and is otherwise rather stagnant. The emancipation process is probably also being hampered by the rising competition from the largely synonymous but more versatile HAVE *to*. This competition has curbed the absolute frequency of occurrence of *gotta*, and even more so of *got to*. As for the auxiliary HAVE, its use with *gotta* appears to become restricted to third person singular subjects. An optional reduction of '*ve* to zero in rapid speech is thus replaced by general omission. A speculation that might be derived from these results is that the deontic construction HAVE *got to* is facing extinction in (American) English, but its derivate *gotta* stands a chance of survival.

### 3.3.3. The Variation of want to and wanna

Let us now turn to the case of *wanna*. This contraction has a lower relative frequency than *gonna* and *gotta*, and is also less grammaticalized. We may therefore expect *wanna* to be less independent from *want to*. On the other hand, Krug (2000: 159) argues that *wanna*'s syntactic properties diverge from those of its source form, which would suggest a difference in usage beyond the phonological.

The SBC yields 276 tokens of *wanna* and 88 of *want to*. The factor descriptions in 3.2. show that only four of the ten variables exhibit a significant distribution for this variation: 'age', 'speech rate', 'following sound', and 'type of modality'. Figure 3-23 presents the minimal adequate logistic regression model (Model 11) that results from a multivariate analysis run on the ten variables. It comprises three predictor variables.

		Lo	ogistic Re	gression Model 11
Variants want to 88 wanna 276				
C=0.647 $D_{xy}$ =0.294 R <sup>2</sup> =0.086				
<u>Factors:</u> speech_rate, following_sound, modality_type				
	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$
Intercept	-0.591	0.617	-0.96	0.3388
speech_rate	0.264	0.093	2.84	0.0045 **
following_sound=pause	-1.001	0.432	-2.32	0.0204 *
following_sound=voiceless consonant	0.208	0.303	0.69	0.4929
following_sound=vowel	-0.587	0.484	-1.21	0.2250
modality_type=deontic	0.750	0.413	1.82	0.0690 .

Figure 3-23: Factor model of want to versus wanna

The first thing to note is that this model provides a surprisingly weak account of the variation. The C-Score, at 0.647, is well below the desired 0.8, and the low  $R^2$  value suggests, to the extent that it is informative, that the model cannot explain a large portion of the variation. However, even the maximal model (including all variables but no interactions) scores only C=0.736 and R<sup>2</sup>=0.205. That is, even all the information comprised in the ten variables combined does not provide a fully adequate description of the variation between *wanna* and *want to*. As such, there is either a decisive factor that this analysis is missing, or the two forms are in largely free variation, such that the factors bearing on it have only a limited effect. For the present purpose, I assume the latter, as the model nonetheless yields some interesting and interpretable effect, even though they do not provide a full description of the variation.

Firstly, the factor 'age' is not featured in the model, hence the increase of contraction in apparent time is not a significant aspect of the variation. Secondly, 'speech rate', i.e. rapid speech favoring contraction, has the strongest effect on the use of *wanna*, thus tying the contraction to phonetic reduction. This is in contrast to *gonna* and *gotta*, which also show speech rate effects, but these are weaker and exceeded by other factors.

The effect of 'following sound' is here that a following pause or end of phrase ('zero' in Table 3-17) decreases the rate of contraction considerably. This is also observed, but not significant, with *gonna* and *gotta*. *Wanna*, on the other hand, seems particularly unwelcome at the end of a phrase: of the six end-of-phrase instances in the data (the other 'zero' tokens are pauses or speech disruptions), five occur with *want to* (as in (74)) – the one counterexample is a

question (75). In this respect, *wanna* is tied to the flow of speech and is not syntactically independent.

(74) You can talk to him anytime you want to. (SBC 037 - 1376.861)
(75) Let's listen to The Commitments. ... You wanna? (SBC 050 - 990.774)

Finally, the factor 'type of modality' shows a significant trend. Here, the less common deontic use of *want to/wanna* favors the contraction. In other words, the newer variant *wanna* has a stronger association with the more grammaticalized deontic meaning (cf. the discussion of Table 3-20). This is the only real evidence pointing to the emancipation of *wanna*, in that a semantic distinction is at play between the contraction and its source form.

Overall and unsurprisingly, the variational evidence shows that of the three contracted forms analyzed, *wanna* is the least emancipated from its source form. Characteristics of phonetic reduction (speech rate, following sound) have a stronger impact on this variation than on those of *gonna/going to* and *gotta/got to*. This corresponds to the findings of Hudson (2006) and Falk (2007), both of which, however, disregard the diachronic dimension of the case. In this respect the emerging semantic distinction (modality type) and the distribution by age (though not statistically represented in Model 11) should be taken as signs of the progress of *wanna* towards becoming an independent item.

# 3.3.3.1. Realizations of want to

As noted, *wanna* displays rather close ties to its source form *want to*. Under this premise it is interesting to look at the phonological realization of *want to*. The phonological trajectory of contraction is, roughly, /wpnto/ > /wpndə/ > /wpnə/. Thus, there is a reduced pronunciation of *want to*, /wpndə/, which marks a step towards *wanna*, but is entirely on the level of phonetics/phonology. This gives us a chance to examine a contraction-related phonological variation and compare it to the variation between *want to* and *wanna* (similar to the comparison of *gonna/going to* to pronunciation variants in 3.3.1.2<sup>62</sup>). To this end, only the instances of *want to* are extracted from the SBC data and analyzed for the determinants of full ("want to") versus reduced ("wande") realization. The factors included in the maximal model are the same as in the analyses above. The resulting minimal adequate model (Model 12) is presented in Figure 3-24, where positive Z values correspond to a higher chance of reduction. In total, of the 88 tokens, 35 are realized as "want to" (39.8%) and 53 have been

<sup>&</sup>lt;sup>62</sup> Unlike the case of *gonna*, there is no further reduction of *wanna* (unless by accident), so this level of phonetic reduction cannot be analyzed.

reduced to "wande" (60.2%). The tendency to reduce *want to* is thus rather strong overall.

		L	ogistic Re	gression Mo	odel 12	
Variants "want to" 29 "wande" 40 (19 ignored due to missing values)						
C=0.795 $D_{xy}$ =0.590 R <sup>2</sup> =0.352						
Factors: speech_rate, following_sound, modality_type						
	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$		
Intercept	-2.357	1.465	-1.61	0.3388		
speaker_age	-0.058	0.027	-2.19	0.0287 *	k	
speaker_education	0.245	0.116	2.10	0.0354 *	k	
string_frequency	0.038	0.013	2.88	0.0040 *	**	

Figure 3-24: Factor model of realizations of want to

This model is a surprisingly good fit to the data, considering the problems with the *want to*-versus-*wanna* model in Figure 3-23. The C value is close to 0.8 and a large portion of the variation can be explained by the three factors 'age', 'education' and 'string frequency'<sup>63</sup>. For a better overview these factors are listed with their mean values for each variant in Table 3-26.

	mean age	mean education	mean string frequency
"want to"	42.2 ys	14.7 ys	16.7 /mil
"wande"	34.0 ys	16.5 ys	31.7 /mil

Table 3-26: Determinants of reduction of want to

Another surprise is the absence of 'speech rate' as a determinant of phonetic reduction. In fact, when taken on its own, speech rate displays a significant distribution of "want to" (mean speech rate 5.8 syll/sec) and "wande" (6.5 syll/sec) at p=0.0294 – this distribution does not however add any effect to the

<sup>&</sup>lt;sup>63</sup> There is, again, a correlation between 'string frequency' and 'following sound'. A model involving 'following sound' instead of 'string frequency' would be equally good - but the effect of voiced consonants favoring reduction would have to be explained by the high frequency of *be, do, go* and *get*. Hence 'string frequency' is the more appropriate factor in this model.

model, perhaps due in part to the (almost significant) correlation of 'speech rate' with the 'age' (cor=-0.2, p=0.064)<sup>64</sup>.

Model 12 shows that two speaker-related variables, 'age' and 'education', indeed take part in determining the reduction of *want to* – younger speakers and more educated ones are more likely to produce reduced realizations. While the effect of 'education' does not readily lend itself to an interpretation, that of 'age' leads to an interesting conclusion: If the pronunciation "wande" is seen as a step towards *wanna*, then the increase of the former with younger speakers may lead us to expect an increase in the use of wanna in the near future. Also interesting is that the mean ages are almost equal (33.8 years for wanna, and 34.0 years for "wande") – as are the speech rates (6.7syll/sec for wanna, 6.5 for "wande"). On these measures, then, the pronunciations "wanna" and "wande" group together and are separate from "want to". This means that wanna is still tied in with an ongoing reduction process. Compared to the case of *going to*/ gonna and its intermediate realization "goinde" (recall especially Figure 3-12), it would seem that *gonna* must have gone through the phase that *wanna* is in now. That is, the current stage of wanna precedes that of gonna on the emancipation trajectory.

The effect for 'string frequency', the strongest in Model 12, is quite straightforward and expected in phonetic reduction. If a collocation *want to X* is more frequent, it is more likely to be realized in a reduced way. This is not an exclusive effect of very high frequency, as it persists even when the four most frequent verbs (*be, do, go, get*) are excluded.

### 3.3.3.2. A Brief Summary of want to/wanna

A summary of the relevant factors of both variation (*want to* versus *wanna*) and reduction (the pronunciations "want to" versus "wande") is provided in Figure 3-25. As in the summaries above, the factors are presented along with their associated aspect of variation; also as above, the size of an arrow indicates the strength of the effect.

<sup>&</sup>lt;sup>64</sup> However, even replacing 'speaker age' by 'speech rate' does not result in a significant effect for speech rate. Also, 'speech rate' does not partake in any significant interaction.



Figure 3-25: Factors of variation and reduction with want to/wanna

Taking these results, the determinants of the reduction from "want to" to "wande" appear to be different from those of the variation between *want to* and *wanna*. This may be initially remniscent of the findings for *going to/gonna*, but in fact the situation is very different. Firstly, given the correlations of 'age' and 'speech rate', and of 'following sound' and 'string frequency', the models for variation (Figure 3-23) and reduction (Figure 3-24) are not so different at all – with two of the three factors they only differ in which of the correlates appears in which model. Secondly, the signs that *wanna* is further along on the path from phonetic to lexical variant than "wande" are not nearly as clear as they are for *gonna* (compared to "goinde"). In fact, the influence of 'type of modality' on the use of *wanna*, but not "wande", is the only one. A further interesting aspect is that the reduced pronunciation "wande" and the contraction *wanna* show strikingly similar contrasts to the full form *want to*; this is clearly different from the phonetic reduction of *going to*, "goinde", which does not have much in common with the contraction *gonna*.

## 3.3.3.3. Changes in the Use of want to/wanna

As in the previous cases, we also want to see how the variation between *want to* and *wanna* changes in apparent time, i.e. from older to younger speakers. In particular, the question is whether the variation evolves towards a lexical variation, thus becoming less dependent on phonetic/prosodic factors. The procedure is again to run logistic regression models over 'older' and 'younger' subsets of the data (over versus under 40years respectively). Since it is not

possible to fit an adequate model to the variation of *want to* and *wanna* overall (Fig. 3-23), we should not expect too much from the generational models, which only a part of the data feeds into. The results (Models 13a and 13b) are presented in Figure 3-26.

				Logistic 1	Regression Model 13a
older speakers (≥40years)					
Variants want to 31 wanna 66					
C=0.634 D <sub>xy</sub> =0.268 R <sup>2</sup> =0.052					
<u>Factors:</u> speech_rate					
<u>C</u>	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$	
Intercept 1	.003	0.975	1.06	0.2896	
speech_rate -0	.289	0.156	-1.85	0.0645 .	
				Logistia	Pagraggian Madal 12h
younger speakers (<40years)					
<u>Variants</u> want to 53 wanna 198					
C=0.702 D <sub>xy</sub> =0.405 R <sup>2</sup> =0.129					
Factors: speech_rate, preceding_item, follow	ving_	sound			
		Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$
Intercept		-0.020	0.916	-0.02	0.9826
speech_rate		0.191	0.121	1.58	0.1132
preceding_item=I		0.797	0.551	1.45	0.1479
preceding_item=NEG		-0.543	0.493	-1.10	0.2702
preceding_item=we/they		-0.373	0.650	-0.57	0.5656
preceding_item=you		0.680	0.562	1.21	0.2268
following_sound=pause/vowel		-0.791	0.441	-1.79	0.0730 .
following_sound=voiceless conson	ant	0.252	0.385	0.65	0.5131

Figure 3-26: Factor models of the variation of *want to/wanna* for older and younger speakers

The model for older speakers is neither adequate nor very informative. Its model fit and explained variation are very low, and the single effect it includes, 'speech rate', is only significant as a trend. Yet perhaps this is reflective of the forms' usage – a rather free variation with a preference for contraction in rapid speech.

On first perusal, the 'younger' model shows little of interest, however in the analysis of variance the factor 'preceding item' is significant at p=0.0146. This means that the distribution by preceding items is significant, but no individual item stands out as carrying the effect. The factor 'speech rate' narrowly misses the significance threshold, but its dismissal would deteriorate the model considerably. Model 13b is most meaningful when the two models are viewed as successive stages of the variation. With the overall increase in the use of the contraction, the impact of speech rate decreases and context conditions emerge. In the context of a following pause (especially at the end of a phrase) want to shows more resistance to the trend towards contraction. A similar resistance is found for preceding negation markers. This effect is not present in the overall model (Figure 3-23, see also Table 3-13), and indeed it only emerges here among the younger generation. The contraction rate even drops from 79% to 67% in this context. Examples (76) and (77) illustrate this, with exactly the same sentence uttered by an older and a younger speaker, differing only in the choice of want to or wanna.

(76) ... *I don't wanna do that*. (SBC 054 - 289.245; speaker age: 47 years) (77) *I don't want to do that*. (SBC 009 - 547.48; speaker age: 19 years)

In contrast, an increased preference for *wanna* with preceding *I* and *you* is emerging – *I* and *you* are the most frequent subjects for *want to/wanna*, which can be seen as a frequency effect similar to the preference for *you gotta* reported in 3.3.2. The difference is that in the case of *wanna* the effect is emerging, whereas in the case of *gotta* it is diminishing.

These subtle shifts according to the linguistic environment occur at a low level, largely below the statistical radar. They are nonetheless quite striking, as depicted in Figure 3-27. The graphs show how the preferences with respect to 'preceding item' are turned upside down from the older to the younger generation, while the dispreference of the contraction before a pause or vowel remains stable.



Figure 3-27: Changing distributions of want to and wanna

Finally, the effect of 'modality type' in the overall model (Figure 3-23) does not reappear in the generational models. Deontic modality already has a strong predilection for the contracted variant with older speakers (80%), which still increases in the younger generation (87%). The fact that the share of deontic uses increases considerably overall (from 10% to 18%) suggests that this is an emerging function of *want to/wanna* which is associated with the contracted form *wanna*.

For the full and reduced realizations of *want to*, the overall token number (n=88) may not be enough to warrant the approach of splitting the data in two. On the other hand, since 'age' is a significant factor in this variation (Figure 3-25), it is reasonable to expect generational differences. Thus, although the statistical modeling presented in Figure 3-28 should be viewed with caution, it confirms expectation. The determinants of reduction among older speakers, 'education' and 'string frequency', are the same as in the overall model (excepting, of course, 'age'). In the younger generation (for which more data is available) the share of reduction has increased, but the determinants of reduction have disappeared. Perhaps this can be taken to lead up to the relatively free variation between *want to* and *wanna* observed in Figure 3-23 above.

older speakers (≥40years)				<u>Logisti</u>	c Regression Model 14	
Variants "want to" 13 "wande" 12	(6 ignor	red due to	o missing	values)		
C=0.933 D <sub>xy</sub> =0.865 R <sup>2</sup> =0.709	)					
<u>Factors:</u> speaker_education, string_frequ	ency					
	Coef	<u>S.E.</u>	<u>Wald Z</u>	$\underline{Pr(> Z )}$		
Intercept	-9.695	4.104	-2.36	0.0182	*	
speaker_education	0.409	0.192	2.13	0.0331	*	
string_frequency	0.111	0.043	2.56	0.0106	*	
younger speakers (<40years)						
"want to" 18 "wande" 35						
< no significant effects > (all factors have p>0.1)						

Figure 3-28: Factor models of the realization of *want to* for older and younger speakers

To conclude, of the three conventionalized contractions (*gonna, gotta, wanna*) *wanna* is the least progressive both in terms of synchronic variation and apparent time development. Its increase in relative frequency is slower, and the development of the variation is towards a multifactorial variation that points to phonetic and context-related restrictions on the use of *wanna*. Specifically, *wanna* is the only contraction that remains tied to faster speech with younger speakers. Moreover, the reduced pronunciation of *want to*, "wande", shows some parallels with, and perhaps a development leading up to, the contracted form *wanna*. One point that strengthens *wanna*'s independence from *want to*, on the other hand, is its augmented preference in the more grammaticalized deontic use.

Thus, while it is true that *want to* and *wanna* "are more than just phonological variants" (Krug 2000: 159), their variation is still more phonological than those of the other pairs examined in this study.

## 3.3.4. A Comparative Note on trying to/tryna and need to/needa

We now turn to two contractions that are in the same paradigm of *to*-contraction as *gonna*, *gotta* and *wanna*, but are arguably not as conventionalized: the contracted forms *tryna* of *trying to*, and *needa* from *need to*. As shown above, these contractions are less frequent and their increase in apparent time is less prominent. They are thus expected to be less emancipated and to behave more like pronunciation variants and less like independent lexical items.

For the purpose of statistical modeling the two variations are conflated and the variants are the full forms as compared to the contractions. The differences between *trying to/tryna* and *need to/needa* are pointed out where appropriate. In the combined data set, there are 158 full realizations and 43 contractions (21.4%) of *trying to* and *need to*. As previous, a minimal adequate model is derived from the ten initial predictors to capture the variation through only the relevant variables. The resulting model (Model 15) is shown in Figure 3-29.

		Lo	ogistic Reg	gression M	<u>Iodel 15</u>	
<u>Variants</u> full [ <i>trying to / need to</i> ] 110 contracted [ <i>tryna</i>	/needa] (	30 (61 igr	nored due	to missing	values)	
C=0.792 $D_{xy}$ =0.584 R <sup>2</sup> =0.290						
Factors: speech_rate, following_sound, modality_type						
	Coef	<u>S.E.</u>	<u>Wald Z</u>	<u>Pr(&gt; Z )</u>		
Intercept	-2.426	2.054	-1.18	0.2376		
speaker_education	-0.168	0.100	-1.68	0.0927		
speech_rate	0.543	0.177	3.07	0.0021	**	
following_sound=pause	-6.498	19.860	-0.33	0.7435		
following_sound=voiceless consonant	0.939	0.474	1.98	0.0478	*	

Figure 3-29: Factor model of contraction of trying to and need to<sup>65</sup>

According to this model, the use of contracted *tryna* and *needa* is largely determined by only three factors, two of them speech-related and one speaker-related. To begin with the strongest factor, 'speech rate' is a typical reduction feature: the contracted forms are favored in rapid speech and strongly

<sup>&</sup>lt;sup>65</sup> The default level for 'following sound' is 'voiced', comprising vowels and voiced consonants. The data also show a favoring effect for vowels, yet this is not reliable as there are only five instances of a following vowel in the data (two of which come with the contraction *needa*).

disfavored in slow and careful elocution. Moreover, the effect pertains to both variations, as the mean speech rates for the use of each variant show:

mean speech rate in syllables/second

trying to	6.10	need to	5.75
tryna	7.10	needa	6.69

The mean speech rates of the contracted forms here correspond roughly to those of the reduced realizations of *going to* ("goinde", 6.61 syll/sec) and *gonna* ("ena", "na/ga", 7.19 syll/sec) in 3.3.1. In fact, all the contractions considered in this chapter show a higher speech rate on average than the corresponding full forms. When the differences are compared, however, a clear pattern emerges (see Table 3-27). *Gonna, wanna* and *gotta* show roughly the same distance from their full forms (0.5-0.6 syll/sec); *tryna* and *needa* pattern together at a much larger distance (0.9-1 syll/sec). Thus, rapid speech has a markedly greater influence on these two forms than on the former three.

mean speech rates (syll/sec)					
	full form	contraction	difference		
going to/gonna	6.02	6.51	0.49		
got to/gotta	5.67	6.27	0.60		
want to/wanna	6.21	6.74	0.53		
trying to/tryna	6.10	7.10	1.00		
need to/needa	5.75	6.69	0.93		

Table 3-27: Mean speech rates with full and contracted forms

The next strongest effect in Model 15, that of 'following sound', is already considerably weaker but still statistically significant. Here, a following voiceless consonant favors the contracted forms. This, again, is a tendency observed with both *tryna* and *needa*, as Table 3-28 shows.

following sound	voiceless cons	other
needa	<b>40%</b> (6/15)	<b>16%</b> (13/81)
tryna	<b>33.3%</b> (16/48)	<b>14%</b> (8/57)

Table 3-28: Shares of contractions of need to and trying to by following sound

The increased contraction rate before a voiceless consonant has already been identified as a phonological effect in the discussion of *gotta* (see 3.3.2). Here again the voiceless stop /t/ in *to* is avoided in the presence of another voiceless sound (as in examples (78)-(79)) for ease of pronunciation. This appears to have a somewhat stronger impact on the use of *needa* and *tryna* than on *gotta*.

(78)I needa talk to Windham. (SBC 021 - 1530.518)
(79)Seems to me that she's tryna straighten herself out (SBC 007 - 1348.72)

Finally, a minor effect is observed for the speaker-related factor 'education'. The trend it exhibits is for speakers with higher education to use the contracted forms less. Table 3-29 gives the mean education levels for each variant, which show that the difference is more pronounced in the case of *trying to/tryna*.

mean education of speaker (in years)				
need to	15.9	trying to	16.1	
needa	14.8	tryna	14.1	

Table 3-29: Speaker's education for variants of need to and trying to

Next to the speech-internal constraints, a social limitation is thus also relevant to the production of *needa* and *tryna* to some extent.

Conspicuously absent as a factor in the model is 'age'. We have already seen that an apparent time increase occurs in the use of *tryna* but not *needa*, and that both remain far behind the rates of *gonna*, *gotta* and *wanna* (see Figure 3-4). In light of this, comparing older speakers with younger speakers (as with the variations above) does not seem a very promising approach. In considering the two most relevant factors, 'speech rate' and 'following sound' across age groups, the data show that their effects are stable (see Table 3-30).

following	l sound	voiceless cons	other	
share of contracted	older speakers	<b>31.8%</b> (7/22)	<b>15.4%</b> (6/39)	
needa / tryna	younger speakers	<b>32.1%</b> (9/28)	<b>16%</b> (13/81)	
form of <i>need</i>	to / trying to	full	contracted	
maan anaaah rata	older speakers	5.90 syll/s	6.84 syll/s	

Table 3-30: Development of *needa/tryna* by following sound and speech rate

As Table 3-30 shows, the differences between the full and contracted forms are present in both the older and the younger cohort; in fact, the values hardly change at all. Thus, we can conclude that 'speech rate' remains the main determinant of the use of *needa* and *tryna*. This, along with their prosodic preference of following voiceless consonants, marks these contractions as

instances of phonological reduction, and there is no sign of their evolution from this state.

## 3.4. Summary and Conclusion of Emancipation in Apparent Time

In this chapter, the patterns of variation between full and contracted forms have been analyzed with respect to social and intralinguistic factors, as well as their development in apparent time. The three variant pairs *going to/gonna*, (HAVE) *got to/gotta*, and *want to/wanna* each exhibit their own pattern, but arguably follow similar trajectories. We can now take a step back from the data and attempt to draw a broad picture that accommodates the empirical results presented in this chapter.

Tying these various results together, I propose four parameters of emancipation that can be used as measures of progress, thus allowing us to see how the contractions are at different points on the road to independence. The four parameters are:

- i) The contraction's relative frequency increases (i.e. relative to the source form), as indicated by the factor 'age' (apparent time)
- **ii)** Intralinguistic reduction features recede, as indicated by the diminishing influence of speech rate and immediate context (i.e. 'preceding element' and 'following sound')
- iii)Social restrictions to the use of the contraction are softened, as indicated by the social factors 'education', 'sex', 'dialect region'
- iv)The contraction diverges in meaning from the source form, as indicated by the factor 'modality type'

The first measure, a rise in relative frequency in apparent time, has clearly been shown for all three contractions. *Gonna* scores highest on this gauge, showing a strong effect for 'age' and also exhibiting the largest share among young speakers (up to 98%). In contrast, 'age' is not the most influential factor for *gotta*, and *wanna*'s rise is somewhat stunted with the younger age cohorts.

The second measure, the fading of intralinguistic reduction features, is then perhaps the most crucial touchstone for emancipation, as it is closest to the definition of (increasing) independence. Here, again, *gonna* is shown to have largely (though not entirely) shed its reduction features. This is less clear for *gotta*; *wanna* is found to trail behind on this measure, as it remains tied to phonological/prosodic constraints. The third point, softening of social constraints, may be as much a consequence as a symptom of emancipation, and clearly depends on the social stance of the source form. One should add that a social differentiation will only arise when the contracted form is perceived as a variant in the first place – which may be responsible for the marginal influence of social factors on *tryna* and *needa*. It is clear, however, that the decline of social determinants is a central aspect of the progress of *gonna*. Neither of the other cases exhibit this trend. For (HAVE) *got to/gotta*, this could be related to the sub-standard nature of the source form; with *want to/wanna*, both 'age' and 'education' appear as determinants of the phonetic reduction of *want to* (i.e. "wande"). As such, this aspect appears to be a possible but not necessary accompanying feature of emancipation.

The last of the proposed parameters, semantic or functional divergence, has the potential to be an absolute indicator of emancipation: if the forms are used for different meanings, they must be distinct entities. However, none of the full form/contraction pairs show a strong differentiation by types of modality. The effects for *gonna* and *wanna* are minor, and for *got to/gotta* the factor only plays a role when the use of auxiliary HAVE is also taken into account. These functional preference patterns are subtle, however, and may even be transient – *gonna*, in particular, is coming close to taking over all functions from *going to*.

It is almost needless to point out that *needa* and *tryna* score low on all four measures. They are part of the same contraction scheme as *gonna*, *gotta*, and *wanna*, but do not break loose from it.

The parameters of emancipation proposed here are inherently diachronic, although the data they are deduced from are synchronic. In the next chapter we follow in the tracks of this one, but examine the emancipation process in real time.

## **CHAPTER 4 A Diachronic Study of Emancipation**

The development of *gonna*, *gotta*, and *wanna* in twentieth century American English

It's been a long, a long time coming But I know a change gonna come, oh yes it will. (Sam Cooke, A Change Is Gonna Come, 1963)

Thus far we have investigated the synchronic variation of the full and contracted semi-modals. From these results we can, however, only infer the contractions' development over time. We now turn to a truly diachronic study, covering the histories of *gonna*, *gotta*, and *wanna* over a 95 year time span. The data comes from a subset of the Corpus of Historical American English (COHA; Davies 2010), as described below. The COHA corpus is a data collection of "more than 400 million words of text of American English from 1810 to 2009" (Davies 2010). The 'Fiction' section, which is relevant here, comprises just over 200 million words. Thus, in contrast to the comparatively small data sets used in the previous chapter, this is a study of 'big data', focussing on the larger, quantifiable trends.

The aim of this chapter is firstly to show and explain the rise of the contractions over the course of the twentieth century and secondly to describe changes in the determinants of variation between the full and contracted semimodals. This will be seen to provide evidence for the contractions' increasing independence from the full forms, and shed light on how this emancipation proceeds.

## 4.1. The Data

The COHA corpus, despite the fact that it contains only written data, provides some insight into how the contractions developed in comparison to their source forms in the 20th century.

The earliest instances of the spellings *gotta* and *wanna* in COHA are found scattered across the 19th century (see examples 70-71), with *gonna* appearing somewhat later (72). This, however, should not be taken to imply that *gonna* is the youngest of these forms. In fact, other reduced forms of *going to* 

such as *goin to* (73), *gwine to* (74) and *gon to* (75) occur much earlier. These first occurrences serve to show that *gonna* emerged through progressive reduction (and they look much like successive steps on a reduction cline, see Fig. 2-1).

- (70)*Why, misse, massa buckra <u>wanna</u> go for doo, dan he winna go fo' wee.* (1827: Charles B. Brown, *The Novels*)
- (71)*Ef we git into trouble, all we've <u>gotta</u> do is to back out,' remarked Baldy* (1870: Edward S. Ellis, *The Huge Hunter, Or the Steam Man of the Prairies*)
- (72)*I'm gonna kneel down by my baby's bed an' ask Gawd.* (1917: Augustus Thomas, *The Copperhead*)
- (73)*Well, I was <u>goin to</u> tell you about thim same books, too;* (1827: Anne Newport Royall, *The Tennessean*)
- (74)[...] *it's onpossible to say where he's <u>gwine to</u> have you, and what you're a <u>gwine to</u> lose, and how you'll get off at last, (1834: William Gilmore Simms, <i>Guy Rivers: A Tale of Georgia*)
- (75)I tell ye that girl ain't a <u>gon to</u> put up with any o' them slab-sided fellahs that you see hangin' raound to look at her every Sunday when she comes aout o' meetin'. (1886: Oliver Wendell Holmes, A Mortal Antipathy)

Clearly, these examples are all non-conventional representations of substandard spoken language. The written forms are, of course, contrived by writers, but the utterances are all attributed to rural, unsophisticated characters that represent the typical speaker of substandard language. In (70) the speaker is a black slave, in (71) it is a hunter and trapper, and a fisherman in (75); the characters speaking in (72-74) are all Southern working-class people. It is not until the 20th century that the spellings *gonna*, *gotta* and *wanna* come to be more widely used in writing to represent reduced pronunciation of *going to*, *got to*<sup>66</sup> and *want to* in informal speech.

It is also noteworthy that in the time around 1900, there was, at least among writers, a growing awareness of an "American Language" (Mencken 1919) rooted in the local vernacular: "Many American writers and thinkers in the nineteenth century became convinced that the local form of English was the only possible medium for an American writer who sought to create literature rooted in his own perception of the world" (Chothia 1979: 53). The emergence

<sup>&</sup>lt;sup>66</sup> Interestingly, when *gotta* begins to take off in the 1910s, almost one third of the instances are an eyedialect spelling of *got a* rather than *got to* - a use of *gotta* that evidently has not caught on and occurs very rarely in later data (but is still mentioned in most dictionaries).

of the vernacular Americanisms *gonna*, *gotta* and *wanna* in early twentieth century American stage writing, then, was certainly no coincidence.

In the following section I examine how the usage frequencies of the contracted forms developed over the course of the 20th century, as compared to their source forms as well as their 'full modal' synonyms (*will, must*). It is expected, of course, to find that the contractions rose in frequency. It would then seem logical that what these new forms gain, some other form bearing the same meaning has to lose – that something's gotta give, so to speak. It will be seen, however, that this trade-off is not as clear as one might expect.

The data used in this study is from the Fiction section of COHA, and only from those sources marked as "Drama" or "Movie" (henceforth the Drama&Movie subcorpus). The data thus falls into the category of scripted dialogue, or written-to-be-spoken (though to be spoken by fictitious characters). In the terminology of Culpeper & Kytö (2010), this type of data is *speech-purposed*, i.e. "designed to produce real-time spoken interaction", and "strive[s], at least in part, to be mimetic of spoken interaction" (17). Thus, using this selection gives us data that is as close as possible to actual spoken language, as this is what dialogues in stage plays and movies are modeled on.

The time-span of investigation is from 1910 to 2005. The start date is set according to the earliest occurrences of *gonna/gotta/wanna* in the Drama&Movie subcorpus, and the end is determined by the scope of the corpus at the time the data was collected<sup>67</sup>. The resulting subcorpus (Drama&Movie 1910-2005) contains over 17 million words - 11 million in the Drama section and 6.2 million from movie scripts - with more than one million words from each decade. Size clearly is a strong point of this data base. The downside is that speaker-related information such as age, education and home region is not available (it also includes speech from characters with non-native English, though these cases are rare). There is also no direct operationalization of speech situations (e.g. formal vs informal, public vs private), and thus the analysis focuses on intralinguistic factors.

The analysis again centers on the three variables *going to/gonna, got to/gotta* and *want to/wanna*. The data set has been trimmed to include only modal uses of these forms, that is, all the exclusions discussed in chapter 2 (see 2.2. and 2.3.) apply. Thus, target forms followed by a noun phrase (*He's going to Chicago; It was dark by the time we got to the camp*) do not enter the set; cases like *We got to know her last summer* were removed manually. As expected, the 'populations' of the three variables show considerable differences in size and distribution, which are shown in the raw token numbers and overall contraction rates in Fig. 4-1. It will be noticed that the overall share of the contractions is

<sup>&</sup>lt;sup>67</sup> February - April 2011; by now (November 2013), COHA extends to 2009.

much smaller here than in the data of current spoken American English examined in the previous chapter. Clearly, this is a function of register (spoken versus written) as well as time (the 1990s/early 2000s versus spanning the twentieth century). Still, the basic setup of the present data broadly reflects what was found in the previous chapter. The most frequent variable is *going to/ gonna*, followed by *want to/wanna*, with *got to/gotta* coming far behind; as for contraction, however, it is *want to/wanna* that shows the lowest rate. The proportions, however, differ between the data sets. While in the spoken data, there is a clear ranking in the contractions' respective shares (*gonna* 91%, *gotta* 80%, *wanna* 76%), *gonna* and *gotta* are on the same level in the COHA Drama&Movie data, with *wanna* trailing behind considerably.



Figure 4-1: Token numbers in COHA Drama&Movie (1910-2005)

## 4.2. The Rise of the Contractions: A Linguistic "Woodstock Moment"

The raw frequencies of the semi-modals and their contracted variants throughout the 20th century is shown in Table 4-1; Figure 4-2 illustrates how the share of contractions increases.

decade	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
going to	1078	1217	1540	1328	1059	1292	1300	1117	1151	795
gonna	7	91	263	200	291	308	998	1073	1116	593
% gonna	0.65	6.96	14.59	13.09	21.56	19.25	43.43	49.00	49.23	42.72

wanna (p < .0001)

decade	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
got to	329	593	635	574	415	381	336	315	345	196
gotta	5	26	89	98	92	128	405	428	292	294
% gotta	1.50	4.20	12.29	14.58	18.15	25.15	54.66	57.60	45.84	60.00
want to	773	951	1154	1221	969	1333	1386	1413	1399	895
wanna	0	4	37	46	28	39	192	255	253	231
% wanna	0.00	0.42	3.11	3.63	2.81	2.84	12.17	15.29	15.31	20.52

gonna (p < .0001)

0

Table 4-1: Contractions and their source forms in COHA Drama&Movie

gotta (p < .0001)
 </p>



Figure 4-2: The share of contractions in COHA Drama&Movie

As expected, the share of contractions increases on a statistically significant level in all three cases. *Gonna* and *gotta* have higher percentages than *wanna* throughout, which is not in proportion with the source forms' frequencies: *want to* is much more frequent than *got to* and overtakes *going to* over the course of the century (see Figure 4-5 below).

What is most striking here is the contractions' simultaneous upward jump from the 1960s to the 1970s, reflected both in absolute frequencies and percentages – *gonna* and *gotta* more than double their percentage, and *wanna* even quadruples it (albeit from a very low starting point). This period sees as much change as the rest of the century combined. How drastic this frequency change was can be highlighted through variability-based neighbor clustering (VNC; Gries & Hilpert 2008). This diagnostic tool divides the time-line into clusters on the basis of how each time period's frequency value varies from those of its neighbors. Figure 4-3 presents a VNC applied to the per-million-words frequencies of *gonna*, *gotta* and *wanna* (see below for the corresponding figures).



Figure 4-3: Variability-based neighbor clustering of the contractions' frequency development

In all three dendrograms, the first and clearest cluster split is between the 1960s and the 1970s, dividing the century into 'before' and 'after'. It appears that with the 1970s came a new era in the history of contracted semi-modals. Below this, there is a second cluster split that is consistent across the three variables: in the pre-1970 'era' the first two decades (1900-1919) combine to form a cluster separate from the other four. These data indicate that it is only from the 1920s onwards that the contractions have been an established alternative to other modal expressions in dialogue writing.

One cannot help but notice that the most drastic change in variant frequencies comes at a time renowned for deep social changes – the Civil Rights Movement, anti-war protests and counterculture all belong in this age and are associated with a break from old prescriptions and conventions. It is reasonable to assume that this re-evaluation of norms extended to the use of linguistic forms, especially forms that had previously been considered incorrect or inappropriate in writing. As Fairclough (1992) states, "contemporary cultural values place a high valuation on informality, and the predominant shift is towards speech-like forms in writing" (204).

An ad-hoc reference to social developments does not suffice to explain the change observed here. Yet, linguistic changes have often been plausibly related to changes in the society at large. Petersen et al. (2012) assert that "a language's lexicon [...] evolves according to selection laws that are related to social, technological, and political trends" (1). Myhill (1996) links shifts in the usage of (semi-)modals to a specific historical event, the American Civil War; similarly, Chambers (2002), discussing the decline of British features in Canadian English, concludes that "the linguistic changes [...] have merely kept pace with the pervasive sociocultural changes for which they have supplied the constant, and absolutely essential, accompaniment" (370). It is in this vein that I label the sudden and dramatic rise of the contractions a 'linguistic Woodstock moment'.

By zooming in on the time-line, we can further narrow down the time frame of the change: applying 5-year periods to the data, it becomes evident that the boost in the contractions' frequency was most forceful in the latter half of the 1960s. Figure 4-4 shows the share of contracted forms by half decades: up until 1961 and after 1975, the curves rise only very slightly (if at all), but they bolt upwards around the period from 1966-1970<sup>68</sup>.

<sup>&</sup>lt;sup>68</sup> These percentages are a comparison of the contractions to their source forms. The absolute tokens-permillion frequencies do not differ in the timing of the sudden rise of *gonna*, *gotta* and *wanna*.



Might this be the point of reanalysis at which *gonna*, *gotta* and wanna are reconstrued as independent items? Or is it merely a 'fashion trend', a sudden shift in conventions for creative writing, orienting spellings in drama and movie scripts more towards the (assumed) actual pronunciation rather than the rules of orthography? Perhaps a simple change in editorial policies? This question can be answered, to an extent, through the examination of the token frequencies of

the full and reduced forms in addition to percentages.

Assuming a change in scriptwriters' and playwrights' spelling conventions would imply that when a character is imagined to say, for instance, "I'm gonna write a book", this would formerly have been scripted as *I'm going to write a book*, as orthographic correctness prescribed, but after the shift in conventions is spelled out to reflect 'real' pronunciation, thus *I'm gonna write a book*. In this scenario, *going to*'s are turned into *gonna*'s (and *got to*'s into *gotta*'s, *want to*'s into *wanna*'s) as writing adapts to speech; thus, the rise of the contractions must come at the expense of the full forms. It turns out, however, that this is not the case. Table 4-2 and Figure 4-5 show the frequency developments of the contractions and their source forms measured in tokens per 1 million words. In the critical period, the 1960s and 1970s, usage of the contracted forms increases sharply and simultaneously, while the full forms' frequencies remain stable. An interpretation in terms of a sudden change in the spelling conventions of writers is therefore not supported by the data. They rather show the symptoms of a more complex change in language use.

decade	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
going to	835.6	661.9	850.9	720.4	585.7	695.4	741.7	620.5	622.1	568.1
gonna	5.4	54.2	156.3	117.6	174.8	176.1	610.2	645.2	654.4	484.5
total	841.0	716.1	1007.1	838.1	760.5	871.6	1351.9	1265.7	1276.5	1052.7
got to	254.8	353.3	377.3	337.6	249.3	217.9	205.5	189.4	202.3	157.5
gotta	3.9	15.5	52.9	57.6	55.3	73.2	247.6	257.4	171.2	236.3
total	258.7	368.8	430.2	395.2	304.6	291.1	453.1	446.8	373.5	393.8
want to	590.1	559.4	683.3	715.7	575.5	757.8	842.0	843.6	815.0	716.8
wanna	0.0	2.4	22.0	27.1	16.8	22.3	116.2	152.1	148.4	184.8
total	590.1	561.8	705.3	742.8	592.3	780.1	958.2	995.7	963.4	901.6

 Table 4-2: Full and contracted semi-modals per million words in COHA

 Drama&Movie



Figure 4-5: Frequency of full and contracted semi-modals in COHA Drama&Movie

Taking these results, one might suggest that what we are seeing is really a general rise in the usage of semi-modals (the totals in Table 4-2), whose reduced pronunciation variants are *pari passu* becoming more popular, perhaps due to the reducing effect of frequency (Bybee 2006). Such a scenario would

appear to be in line with Leech's (2003) findings which report a significant increase of BE going to/gonna, (HAVE) got to/gotta and WANT to/wanna in written American English between 1961 and 1991<sup>69</sup>. According to this scenario, the increase occurred across both written and spoken registers, materializing in written-to-be-spoken data in the form of contractions rather than full forms. This possibility cannot be ruled out categorically, but there is no support for it in the data. Firstly, the developments found here and in Leech's study do not fully match: while Leech reports the sharpest increase for WANT to/wanna (70.9%), this effect is comparatively weak in the COHA Drama&Movie data, and vice versa for (HAVE) got to/gotta. Although this first consideration might be put down to differences between spoken and written language, the second is more serious: If reduction is a consequence of frequency, then an increase in reduction of a given form will follow (rather than accompany) a frequency rise of the item. In other words, we must expect an increased use of /gpnə/ as a pronunciation variant of going to to be preceded by an increase of the use of going to. Since we can pin down the timing of the 'contraction boost' so precisely (to the second half of the 1960s), the preceding rise of the full forms should be visible in the data. But this is not so. We can conclude from this that the reducing effect is either extremely delayed (the semi-modals' frequencies rose in previous centuries, cf. Krug 2000:169ff, Mair 2004), or that the 'contraction boost' is not (or not only) an instantiation of reduction.

This poses an additional puzzle: If the contracted semi-modals' frequency development is independent from that of their source forms, does it follow that they are, at that point, autonomous words? Moreover, how is it that they all undergo the same transformation at the same time? The first question, of course, refers to the process of emancipation, for which detailed evidence is presented later in this chapter. Regarding the second question, the social changes of the time provide a plausible explanation.

#### 4.2.1. Variation With Other Modal Expressions

In order to understand the spread of the contracted semi-modals we need to take in the wider picture of modal variations – *got to/gotta* competes with HAVE *to* and *must* for the modality of obligation/necessity; *going to/gonna* is in variation

<sup>69</sup> Leech compares the parallel 1-million-word corpora Brown (1961) and Frown (1991). His results in numbers are:

	Brown	Frown	Diff. (%)
BE going to/gonna	219	332	+51.6
(HAVE) got to/gotta	45	52	+15.6
WANT <b>to / wanna</b>	323	552	+70.9

with WILL as expression of 'future'; *want to/wanna* can be compared to *wish to* and WOULD *like to*. The frequency developments of these forms present no palpable trigger for the contraction boost in the late 1960s. They do show, however, that the shifts in the use of *gonna* and *gotta* are tied not only to these forms' relation to their source forms but are also embedded in the developments of a larger set of variants.

As the focus of this study is on the contracted semi-modals and their ties to the respective full forms, this examination of the wider variations is confined to rather superficial frequency counts. Deeper analyses of these variations can be found in other studies (e.g. Collins 2009, Torres Cacoullos & Walker 2009, Tagliamonte & D'Arcy 2007, Jankowski 2004 and Krug 2000).

#### going to/gonna vs WILL

While much has been theorized about the potential functional differences between the semi-modal BE *going to* and the central modal WILL (e.g. Quirk et al. 1985: 214, Klinge 1993, Nicolle 1997), it nevertheless seems that they are very much alike in their core semantics (cf. Haegemann 1989) and thus by and large interchangeable in general usage: "in most cases, there is no demonstrable difference between *will* and *be going to*" (Palmer 1974: 163; see also the discussion of BE *going to* and WILL in Torres Cacoullos & Walker 2009: 5ff). For the present purpose, and without going into the details of the variation (these may be found in, e.g., Torres Cacoullos & Walker 2009, and Szmrecsanyi 2006: ch.6), we may therefore assume that BE *going to* and WILL generally compete in the domain of future reference. Example (76) serves to illustrate how these variants may alternate.

### (76) *KITTY*: [...] *When are you going to read it all to me? GRAINGER: When will you let me?* (COHA Play:LetUsBeGay, 1929)

The frequencies of the variants *will* and *'ll* were obtained by random sampling: in three random samples of 1,000 tokens from a search for the respective form in the 'Fiction' section of COHA, the share of occurrences in Drama and Movie sources was determined, and the mean of the shares was applied to the total number of hits of the corpus search. This process was carried out separately for each decade.

As Figure 4-6 shows, the contracted form of WILL, '*ll*, is the most frequent variant in the Drama&Movie data, but suffers a rapid decline over the course of the twentieth century. The corresponding full form *will* fluctuates, but does not, on the whole, profit from the erosion of '*ll*. Overall, this confirms Leech's (2003) observation that WILL is in decline in American English, yet still extremely frequent. In the present data, however, this decline is restricted to its cliticized form.



Figure 4-6: The variation of expressions of 'future' in COHA Drama&Movie

The "mean" in Figure 4-6 represents the average of the frequencies of the four variants. As this shows only a slight and unsteady decline, the expressions of futurity considered here seem to generally uphold their share in this function, while undergoing shifts with respect to one another. The developments shown in Figure 4-6 allow for some speculations regarding these shifts. Firstly, the decline of *'ll* between 1930 and 1950 comes with a rise in *will*, so this may be simply a matter of WILL being used in the full form or as a clitic. Later, however, from 1960 to the 1980s, both *will* and *'ll* decrease in frequency – at around that time that *gonna* gains currency in dialogue writing. Thus, it appears that the rise of *gonna* comes at the expense of the central modal WILL. This fits well with the results from Leech (2003) mentioned above, except that the winning variant in the written dialogue register is *gonna* rather than *going to*.

#### got to/gotta vs HAVE to and must

As is the case for BE *going to/gonna* and WILL, the variants *must*, HAVE *to* and (HAVE) *got to/gotta* are not perfect synonyms<sup>70</sup>, however are generally

 $<sup>^{70}</sup>$  Their subtle functional differences are discussed in, among others, Coates (1983) and Palmer (1990) – see also their discussion in Smith (2003: 243f).

considered competitors in the expression of 'obligation'/'necessity' (see, e.g., Smith 2003, Jankowski 2004, Tagliamonte & Smith 2006, Tagliamonte & D'Arcy 2007). It is also clear that this domain comprises other forms, such as NEED *to*, *ought to*, *should*, *had better*, etc.; these, however, are considered to express a weaker sense of necessity (cf. Smith 2003: 242). As such, included here are the four forms which qualify as the major representatives of strong 'obligation'/'necessity', i.e. *must*, HAVE *to*, (HAVE) *got to* and (HAVE) *gotta*. Nevertheless, one should be aware that what is drawn here might be in some respects an incomplete picture.

Figure 4-7 shows the per-million frequency developments of these four forms in the COHA Drama&Movie corpus. The frequencies of *must* have been estimated from random samples following the same method as *will/'ll* above.



Figure 4-7: The variation of expressions of 'obligation/necessity' in COHA Drama&Movie

The spectacular demise of *must* is well known and has been linked to the rise of semi-modals such as HAVE *to* and (HAVE) *got to* (cf. Myhill 1995, Biber et al. 1998: 205ff). Smith (2003) also notes that HAVE *to* "has at best only partially filled the void left by [*must*]" (263). This is not quite confirmed in the present data, as the mean frequency of the variants remains largely stable – what *must* loses, HAVE *to* and *gotta* gain.

As HAVE got to and its offshoots are formally related to HAVE to, the comparison of these variants is particularly relevant. Jankowski (2004), using data from American stage plays, reports a steady rise of HAVE to, but also that HAVE got to (including HAVE gotta) peaks in the second quarter of the twentieth century, and got to (including gotta) in the third quarter. With the COHA Drama&Movie data this is not only confirmed but evidenced even more precisely when considering each of the possible forms (HAVE got to,  $\emptyset$  got to, HAVE gotta,  $\emptyset$  gotta) as an individual variant (see Figure 4-8).



Figure 4-8: (HAVE) got to/gotta and HAVE to in COHA Drama&Movie

This figure shows that HAVE *got to* (but not HAVE *gotta*) is relatively frequent throughout the first half of the twentieth century, with a peak in the 1930s. Forty years later  $\emptyset$  *gotta* reaches its height (in the 1970s and 1980s), however  $\emptyset$  *got to* does not take part in the rise. Finally, towards the end of the century, the burgeoning variant HAVE *to* has a higher frequency than the other four variants taken together. This resonates with the decline of both (HAVE) *got to* and (HAVE) *gotta* among the younger age groups observed in chapter 3.1. Yet the trends in Figure 4-8 suggest that while (HAVE) *got to* might indeed be on its way out, *gotta* still has a solid presence in the domain of 'obligation'/'necessity'.

want to/wanna vs WOULD like to and wish to

The situation concerning *want to/wanna* is somewhat different. There is no direct competition with a central modal for the semantic domain of 'volition'<sup>71</sup>, and *want to/wanna* is not always granted the status of a semi-modal (Biber et al. 1999: 484, Quirk et al. 1985: 148, but see Verplaetse 2003, arguing for *want to/wanna* as an "incipient modal auxiliary" (155)). While it does partake in the general rise in frequency of semi-modals (Leech 2003), it is not quite clear what other form(s) would have expressed 'volition' synonymously. Those considered here are WOULD *like to* and *wish to*, as in (77-78); however, WOULD *like to*, as a conditional by form, often displays a sense of *irrealis*, a purely hypothetical wishing, that cannot be read into *want to/wanna* (79).

(77)That damned doctor assured me that if I stopped for three months I'd never wish to sss smoke again. He was wrong. I wanted it mmm more and more. (COHA Play:RememberingMr, 1966)
(78)If you don't mind, even if you do mind, I'<u>d like to</u> indulge for a while (Drinks from can of water). (COHA Play:Hobbies, 1989)

(79)*And how I <u>would like to</u> know a woman who would teach me a thousand ways to make love!* (COHA Play:HeWantsShih!, 1968)

In Figure 4-9, which shows the frequency developments of *want to*, *wanna*, WOULD *like to* and *wish to*, the most frequent variant is clearly *want to* (this is as expected, cf. Akimoto 2008). This form increases its frequency over the course of the century, whereas *wanna* only begins to rise from the 1960s (as seen previously). *Wish to*, on the other hand, is rare throughout, but shows a decline from the first to the second half of the century. WOULD *like to*, however, only declines towards the end of the century, when it is overtaken by *wanna*.

As the mean frequency of the variants in Figure 4-9 reveals a slight upward trend, it can be assumed that *want to* and *wanna* rise not only at the expense of *wish to* at first and WOULD *like to* later on, but also of other ways of expressing 'volition' (see Akimoto 2008).

<sup>&</sup>lt;sup>71</sup> although "some volitive traces can be found in *will* and *would*" (Krug 2000: 117), due to their history as a verb denoting volition and desire.



Figure 4-9: The variation of expressions of 'volition' in COHA Drama&Movie

#### 4.2.2. Summary of the Frequency Developments

What we have seen in the frequency developments of *gonna*, *gotta* and *wanna* in the twentieth century is a "linguistic Woodstock moment"; a sharp rise in the late 1960s that cannot be put down to a simple orthographic shift from full forms to contractions. It is also clear that the semi-modals and their contracted variants are part of a dynamic interplay of variants of modal functions. Thus, *gonna* profits from the decline of WILL (and *'ll* in particular) and *gotta* from the decline of *must*. However, *gotta* is outdone by the surging HAVE *to*; *wanna* rises along with *want to*.

These diachronic developments support the view that changes in language use are linked to social changes; while there is no pronounced change in the frequencies of modal *functions*, there is a marked shift in the frequencies of *forms* towards the most colloquial ones, namely the semi-modal contractions.
This colloquialization affects the expressions of volition (*wanna*), futurity (*gonna*) and obligation/necessity (*gotta*) in parallel. Moreover, we can see that these contractions do not simply "inherit" their frequencies from the respective source forms, which suggests that they are indeed chosen from the entire set of variants.

These larger developments serve as the backdrop for the more detailed analyses in the remainder of this chapter. In what follows, we focus on the variations between full forms and contractions, investigating how their determinants change as the overall frequencies shift.

# 4.3. Patterns of Variation

The conversational data from the Santa Barbara Corpus analyzed in chapter 3 suggest a distinction between the contracted forms and phonetic reduction, and a lessened influence of social variables with increasing emancipation. The time-depth of the data retrieved from COHA allows us to investigate these changes on a diachronic level. It has been shown that the contracted forms simultaneously experience a boost in frequency, a 'linguistic Woodstock moment', at the end of the 1960s. While this clearly shows that the emerging modals are linked to one another, they also each have their own story when it comes to the conditioning factors of the variation between full and contracted forms. In particular, the 'contraction boost' in the late 1960s is expected to be coupled with changes in what factors determine the variation and how.

This approach, however, also has its limitations. Firstly, as the COHA data are written-to-be-spoken, they cannot reflect actual on-line reduction – where the contracted forms appear in this corpus, they represent a deliberate pronunciation variant (or, at the endpoint of emancipation, a lexical variant). Also, speech rates can obviously not be measured here. Secondly, social variables are not directly available in COHA, and in fact it would be next to impossible to disentangle the influence of the author's social properties from those of a given character in a play or movie. Despite these limitations, the size, time-depth and dialogical nature of the COHA Drama&Movie corpus allow for a detailed study of variation and change by intralinguistic factors.

As for modeling the variations, the approach here is similar to that taken in 3.3. For each variation a multivariate analysis gives an overview of what factors determine the use of the full or contracted forms. Given that the data cover an entire century, straddling the drastic development described in the previous section (4.2), this can only be a broad overview, but it does identify which

factors bear on the variations overall. The key task then becomes to investigate how the effects of these factors change over time.

### 4.3.1. Factors of Variation in Written Dialogue

The factors considered in this study are described in the following sections, along with the respective distributions of the variants. I discuss these only briefly, explaining for each factor the motivation for including it and how it is operationalized. The quantitative trends are shown and, where appropriate, some qualitative observations are made. The p-values provided along with the distributions show whether the respective variable (as a whole) is a significant determinant of the choice of variant.

An additional measure, time of occurrence (which takes recourse to the findings of the previous section (4.2.)), is then used to assess how each pattern of variation transforms as the contractions become more frequent.

#### **Preceding Item**

This factor has been coded in the same way as in the study of spoken American English above (chapter 3), which means that it is directly comparable. As in chapter 3, this factor indicates collocational preferences – in particular, the effects of frequent collocates (favoring contraction) are expected to decrease with advancing emancipation.

#### <u>going to / gonna</u>

The items to precede *going to/gonna* have been grouped as *I'm* (n=3389), *you/ we/they 're* (n=2650), *he/she/it 's* (n=2286), present tense full form of BE (*are/ is*: n=1568), past tense marker (*was/were*: n=1189), negation marker (*not/n't*: n=2081), adverb (n=721), noun phrase (including pronouns) (n=2783), and 'zero' (beginning of a phrase: n=150). The distribution of the variants is shown in Table 4-3.

preceding item	'm	're	's	full BE pres.	was/ were	not/n't	NP	ADV	beg. of phrase
going to - gonna	2422 - 967	1834 - 816	1553 - 733	1340 - 228	964 - 225	1485 - 596	1787 - 996	443 - 278	49 - 101
% gonna	28.5%	30.8%	32.1%	14.5%	18.9%	28.6%	35.8%	38.6%	67.3%

p < 0.001

Table 4-3: gonna vs going to by preceding item in COHA Drama&Movie

With three types of preceding item the rate of contraction diverges substantially from the overall mean of 30.9%. Examples (80)-(82) illustrate the use of the preferred variant in these contexts.

- (80)*EDITH PRENTISS (slowly, her strange look of ecstacy growing) You* <u>are going to</u> have it! (COHA Play:StringPearls, 1950)
- (81)*I thought I <u>was going to</u> be dead by now. I hadn't planned beyond that.* (COHA Play:MoonChildren, 1970)

(82)*All right. You got a gun, now. <u>Gonna</u> use it or not?* (COHA Mov:KeyLargo, 1948)

Firstly, we see here that the percentage of *gonna* is diminished after a full form of BE. This effect was noted in the SBC data in chapter 3.2, and has been linked to explicitness, which is also conveyed by "slowly" in example (80). As such, when the copula BE is not contracted, the following *going to* is also less likely to undergo contraction. This points to *gonna* being used as a reduced variant rather than an independent form. Perhaps by the same token, the contraction is also dispreferred in the past tense (though not quite as strongly), as *was* and *were* are also non-contracted forms of BE.

At the beginning of a phrase, on the other hand, *gonna* is clearly favored; this is the only context in which the contraction supersedes the full form in frequency. We will see that this phenomenon extends to the other contractions as well.

### got to / gotta

With (HAVE) got to/gotta, the preceding item is usually the subject, although it may also be an adverb or 'zero' (at the beginning of a phrase). Negations (haven't / ain't / don't) also occur, albeit rarely. Table 4-4 lists the use of got to and gotta by 'preceding item' in the Drama&Movie corpus.

preceding item	Ι	you	we	they	3rd P. Sing.	NEG	NP	ADV	beg. of phrase
got to - gotta	1384 - 646	1178 - 562	673 - 246	75 - 28	348 - 103	13 - 8	295 - 80	125 - 61	27 - 123
% gotta	31.8%	32.3%	26.8%	27.2%	22.8%	38.1%	21.3%	32.8%	82.0%

p < 0.001

Table 4-4: gotta vs got to by preceding item in COHA Drama&Movie

As with *gonna*, there is a strong preponderance of the contracted variant at the beginning of a phrase (example (83)) – in fact, this is even stronger with *gotta* than with *gonna*, and it is the only context in which *gotta* is more frequent than *got to*.

(83) Just relax, and keep the arm up on top. <u>Gotta</u> throw strikes. (COHA Mov:MajorLeague, 1989)

The few instances of negation here also show an increased use of the contraction, which is no surprise considering that negation of the construction HAVE *got to* is generally seen as sub-standard and often avoided. The choice of auxiliary in negation is also quite telling: *haven't got to* occurs only twice, and only early in the century (1919 and 1927), both times with *got to* (84). *Ain't got to/gotta* (85) has eight occurrences, four in the first and four in the second half of the century – however, the variant *gotta* is used in only one of these. In contrast, the negation *don't* comes with *gotta* in seven out of eleven cases (86); it's earliest occurrence is in 1978. In other words, *gotta* becomes compatible with negation rather late, and when it is negated DO is the preferred auxiliary. In these instances, *gotta* therefore has the syntactic status of an infinitive rather than a tensed verb form.

- (84) *You <u>haven't got to</u> tell me. I know all about it.* (COHA Play:BabyCyclone, 1927)
- (85) *I know you <u>ain't got to</u> die but once, and it seemed as good a reason to die as any.* (COHA Play:HavingOurSay, 1994)
- (86) We <u>don't gotta</u> pay the man for goin' around blowin' off body parts! (COHA Mov:LadykillersThe, 2004)

A below-average share of the contracted form is seen with preceding 3rd person singular pronouns (87) and noun phrases (88). This tendency was also observed in the spoken data from the SBC (chapter 3.2). Where the auxiliary is present, HAVE *got to* is preferred over HAVE *gotta*, and in the context of a 3rd person singular subject the auxiliary is close to obligatory<sup>72</sup>. Exceptions to this are mostly representations of slang (89).

- (87) <u>There's got to</u> be some way out of there and you've got to find it. (COHA Mov:JacketThe, 2005)
- (88) <u>A man has got to</u> know who he is before he can confront his demons. (COHA Mov:BatmanYearOne, 2004)
- (89) Then I lose my head an' tell him <u>he got to</u> buy her back fo' me' less I gon kill him. (COHA Play:Messiah, 1948)

The other trend evident in the SBC data - that the most frequent preceding items *I* and *you* favor the contraction - does not show as starkly in the Drama&Movie

<sup>&</sup>lt;sup>72</sup> Auxiliary HAVE is present with 91% of 3rd person singular pronouns, and 80% of noun phrase subjects. Each context also has one occurrence of auxiliary BE.

corpus. It is noteworthy, though, that *I* and *you* do have higher shares of *gotta* than the other pronouns (*we, they*).

#### want to / wanna

The possible preceding items of *want to/wanna* are largely the same as for *got to/gotta*, with the additional category of 'modals' (e.g. *might wanna, will want to*), here including infinitive constructions with *to want to*.

preceding item	1	you	we/ they	3rd P. Sing.	NP	NEG	ADV	MOD/ INF	beg. of phrase
want to - wanna	3877 - 266	2657 - 406	447 - 21	52 - 3	156 - 21	3062 - 220	695 - 56	402 - 19	146 - 73
% wanna	6.4%	13.3%	4.5%	5.5%	11.9%	6.7%	7.5%	4.5%	33.3%

p < 0.001

Table 4-5: wanna	vs <i>want to</i> by p	receding item in	COHA Dr	ama&Movie
	15 mann 10 0 j p			

The most striking deviation from the average (8.6% *wanna*) is, again, at the beginning of a phrase, where the use of the contraction is greatly increased (example (90)). This effect is thus present with all three contracted semi-modals under investigation.

Another favoring context for *wanna* is preceding *you* (91), as has also been observed in the Santa Barbara Corpus (see section 3.3.3.). Note, however, that in COHA Drama&Movie, this trend does not extend to the first person singular, even though *I* is the most frequent collocate of *want to/wanna*. It rather seems that many instances of *you wanna* come in the form of questions with the auxiliary DO omitted, as in (92). This type may be seen as similar to (90), in that the deletion of grammatically required elements promotes the use of the contracted form, as both render the sentence shorter and more colloquial. A 'second person effect' may also play into the rather high share of the contraction following noun phrases, where the vocative nominals *you guys/ girls/boys/kids/fellows* particularly favor *wanna* (in 6 out of 21 tokens, e.g. (93)).

- (90) [...] we're just on our way down to City Hall to beat the shit out of some cops. <u>Wanna come</u>? (COHA Play:Moonchildren, 1970)
- (91) All right, if <u>you wanna</u> play it rough, I know how to do that, too. (COHA Play:BornYesterday, 1945)
- (92) Well, we're goin' to a club tonight. <u>You wanna</u> come along? (COHA Mov:MajorLeague, 1989)
- (93) *But hey if <u>you guys wanna</u> see, we can probably show you.* (COHA Play: ThisIsHowItGoes, 2000)

A diminished share of *wanna* is observed with the plural pronouns *we* (94) and *they* (95), which is also present, on a smaller scale, in the SBC data<sup>73</sup>, as well as the slight disfavoring effect for negation markers (which occurs only in the younger generation in 3.3.3). The contraction is most strongly disfavored after modal expressions (96) - which parallels Krug's (2000) finding for British English - and in the *to*-infinitive (97). In the latter, only one instance of *wanna* has been found (98). Krug (2001) suggests that the disfavored use of *wanna* after modals should be taken as an indication that the contraction is more modal-like than its source form. The only preceding (semi-)modal to counter this trend is, in fact, *gonna*, after which 4 out of 7 tokens come in the contracted form (as in (99)).

- (94) But whatever the clothing, <u>we want to</u> make a country here, one country. (COHA Play:TwoSeptember, 2000)
- (95) *I hate people. All <u>they want to</u> do is wonderful things.* (COHA Play:PoeticSituation, 1940)
- (96) Yeh, maybe you'<u>ll want to</u> go a-roaming in the world now, start hitchhiking to Canada or Hollywood, sail on a freighter to the land of Eldorado [...] (COHA Play:EnchantedMaze, 1935)
- (97) *Kale, you're a sweetheart <u>to want to</u> help.* (COHA Play:Necessities, 1991)
- (98) [...] *it sounds like a real good motive <u>to wanna</u> murder somebody.* (COHA Play:JesusHoppedA, 2000)
- (99) *I figure you're <u>gonna wanna</u> come back here a lot sooner than you think*. (COHA Mov:SomeoneToWatch, 1989)

#### **Following Sound**

The sound that follows the semi-modals is another factor directly analogous to the corresponding variable in chapter 3.2. Its levels are thus 'voiced consonant', 'voiceless consonant', 'vowel' and 'end of phrase'. As this is a phonological factor and its influence has been tied to ease of articulation in 3.2., it may seem illogical to employ it in a study of written data. However, as the drama and movie scripts are purposely designed to represent spoken language, there is at least a possibility of articulatory aspects being influential. Moreover, the major effect of the factor 'following sound' is rather of syntactic nature: The contracted forms *gonna* and *gotta* are favored at the end of a phrase<sup>74</sup>. Table 4-6

<sup>&</sup>lt;sup>73</sup> In Table 3-13 above, preceding *we* and '3rd Person Plural' taken together have 66.7% *wanna*, compared to 75.8% overall.

<sup>&</sup>lt;sup>74</sup> Note that 'end of phrase' is not exactly the same as 'zero' in 3.2. above, as speech pauses and hesitations do not occur in the Drama&Movie corpus. Therefore, no comparison is made between the two corpora with respect to this effect. By the same token, the association of disfluency with phonetic reduction mentioned in 3.2.1.1. is not relevant here.

following sound	vowel	voiced cons.	voiceless c.	end of phrase	
going to - gonna	525 - 168	7516 - 3145	3820 - 1593	16 - 34	p < 0.0001
% gonna	24.2%	29.5%	29.4%	68.0%	
got to - gotta	144 - 69	2554 - 1183	1416 - 575	5 - 30	p < 0.0001
% gotta	32.4%	31.7%	28.9%	85.7%	
want to - wanna	487 - 29	5604 - 542	4776 - 452	627 - 62	p = 0.1016
% wanna	5.6%	8.8%	8.6%	9.0%	

presents the raw data for all three variations with respect to the following sound.

> Table 4-6: Full vs contracted forms by following sound in COHA Drama&Movie

It is only the variations of going to/gonna and got to/gotta that show a significant distribution in Table 4-6, and the effect on these is quite straightforward. While a difference in sound quality (vowel, voiced or voiceless consonant) does not appear to affect the choice of the full or contracted form, occurrence at the end of a phrase boosts the use of contractions (see examples (100)-(101)). This may be explained by the history of the particle to as an infinitive marker (Mittwoch 1990). It is present as an artifact in going to and got to, but not in gonna and gotta – thus, when there is no verb following, and no infinitive to be marked, the forms with to appear less appropriate and are hence dispreferred. If this is correct, it points to the direct impact of a structural (rather than phonological) difference between the full forms and the contractions on their usage in this context. This provides evidence for the advanced emancipation of gonna and gotta, and also shows how wanna, to which the effect does not apply, lags behind. Although an alternative strategy is available to avoid using *want to* at the end of a phrase by simply using *want*, this does not seem to be what impedes the use of wanna, as it would replace both wanna and want to, not merely the former (note the similarity of (102) and (103)). In fact, in comparison to the other semi-modals both want to and wanna occur relatively frequently in this position.

- (100) Didn't you say you were leaving? EDDIE (as he ropes) Well, yeah, I was gonna. (COHA Play:FoolForLove, 1983)
- (101) STRANGER You ain't goin' nowheres on that leg. COLEMAN I gotta! (COHA Mov:StingThe, 1973)
- (102) It's a free country. I can eat pizza, if I want to. (COHA Play: YellowEyes, 2000)

(103) *Free country. I'll come if I <u>want.</u>* (COHA Mov:TwelveAndHolding, 2005)

## **String Frequency**

Similar to the factor 'string frequency' in 3.2., the frequency at which the semimodal construction occurs with a given verb (e.g. got to/gotta + see) is measured. Here, this frequency is drawn from the data under investigation itself, i.e. the Drama&Movie subcorpus of COHA. To account for the fact that these string frequencies may shift considerably in the course of a century, two time periods are delineated: from 1910 to 1969, and tokens from 1970 onwards. Thus, the cutting point is roughly where the "contraction boost" occurs (see 4.2.).<sup>75</sup>

The string frequencies are reported as the percentage of the total token number in the respective time period. To give an example, there are 3365 tokens of *got to/gotta* from before 1970. Of these, 66 take the verb *see*, constituting 1.96% of the set. In the time period after 1970, *see* occurs with 41 out of the 2611 tokens, making up 1.57%. Thus, the 'string frequency' value of a token of *got to/gotta* with *see* is 1.96 if it occurs before 1970, and 1.57 if it occurs after.

Table 4-7 provides an overview of the distributions of the variants with respect to this factor. The grouping of string frequency values in the table is not empirically motivated (only by token numbers), but the trends that emerge from it are quite clear.

string frequency	< 0.2	0.2 - 0.5	0.5 - 1	1 - 5	> 5	
going to - gonna	2353 - 1055	1550 - 735	1379 - 546	2586 - 936	4009 - 1668	p = 0.0004
% gonna	31.0%	32.2%	28.4%	26.6%	29.4%	
got to - gotta	706 - 343	389 - 194	543 - 219	877 - 373	1604 - 728	p = 0.0045
% gotta	32.7%	33.3%	28.7%	29.8%	31.2%	
want to - wanna	2173 - 184	1041 - 119	933 - 57	3231 - 284	4116 - 441	p = 0.5005
% wanna	7.8%	10.3%	5.8%	8.1%	9.7%	

 Table 4-7: Full vs contracted forms by string frequency in COHA

 Drama&Movie

While the distributions seem less than compelling, string frequency is a statistically significant determinant for *gonna* and *gotta* (but not for *wanna*). The general trends are similar across all three variations: the lowest shares of contractions are found with string frequencies between 0.5% and 1%, the highest are in the adjacent group of 0.2% to 0.5%; *gonna* and *gotta* are also

<sup>&</sup>lt;sup>75</sup> The same partitioning of time periods is used in the analysis of change in the variation below (4.2.2.)

slightly more frequent with very low string frequencies (<0.2). Thus, *gonna* and *gotta* tend to be favored with the rather rare verbs, perhaps in particular those associated with certain social groups or situations. Consider examples (104) and (105) with the verb *blow* and (106) and (107) with different uses of *beat*.

- (104) We're <u>gonna blow</u> these bastards straight to hell and burn their stinking lab to ashes! (COHA Play:BurningDesires, 1995 -- string frequency = 0.33)
- (105) If he's with the Pin everything's kablooie and I gotta blow the burgh.(COHA Mov:Brick, 2005 -- string frequency = 0.15)
- (106) Well I gotta beat it.. Goodbye old timer. (COHA Mov:ManhattanMelodrama, 1935 -- string frequency = 0.24)
  (107) I don't rattle, kid. But just for that I'm gonna beat you flat. (COHA Mov:HustlerThe, 1961 -- string frequency = 0.25)

The most frequent strings (> 5%) roughly correspond to the overall average shares of *gonna* and *gotta*, while the usage rate of *wanna* is somewhat increased here (9.7% compared to overall 8.6%). There is one high-frequency collocate in particular, namely *do*, that exhibits a conspicuously high share of *wanna* (25% or 76 out of 304 tokens<sup>76</sup> - see example (108)).

(108) And all that knowledge of yours it doesn't make you <u>wanna do</u> something? (COHA Mov:MercySeat, 2002 -- string frequency = 5.05)

# Latin-based Affix

As the contracted semi-modals are often labelled 'colloquial' and 'informal' (cf. the dictionary entries quoted in 2.4.), it seems logical that their usage will in part depend on the formality of the situation or speech act. An effect of formality has indeed been found in British English for both *gonna* (Berglund 2001) and *gotta* (Nokkonen 2010). While the degree of formality cannot be operationalized directly in the COHA Drama&Movie data, I attempt to approximate this aspect by considering Latin-based affixes on the collocated verb. The assumption is that in drama and movie scripts certain lexical choices are used to convey the degree of formality of the speech act (and thus help establish the speaker's role in the situation presented), and that words of Latin as opposed to Germanic origin are generally associated with higher degrees of formality. As such, the presence of Latin-based collocates is expected to correlate with an increase in the use of full form semi-modals. This effect

<sup>&</sup>lt;sup>76</sup> Note, however, that *do* has a string frequency of >5 only in the second time period (after 1970) - it's overall share of *wanna* is still remarkable at 14%.

should decrease as emancipation proceeds and the contracted variant becomes more acceptable in formal speech acts.

To allow for a unified approach, and to avoid the pitfalls of having to define which words count as 'Latin', a set of Latin-based morphemes is selected, and the data is annotated for their presence or absence on the verbs collocated with semi-modals. These Latin-based morphemes are the prefixes *con-, de-, dis-, ex-, in-, per-, pro-* and *re-,* and the suffixes *-ate, -ize, -tion* and *-ure*<sup>77</sup>. This allows for semi-automatic coding, however clearly does not yield an exhaustive list of verbs of Latin origin, let alone of verbs that may indicate higher degrees of formality. Nevertheless, it does serve as a reasonable approximation of formality. Table 4-8 shows how the presence of these Latin-based affixes influences the variant distribution.

collocate	with Latin affix	other	
going to - gonna	316 - 88	11561 - 4852	p = 0.0008
% gonna	21.8%	29.6%	
got to - gotta	112 - 32	4007 - 1825	p = 0.0212
% gotta	22.2%	31.3%	
want to - wanna	371 - 15	11123 - 1070	p = 0.0011
% wanna	3.9%	8.8%	

 Table 4-8: Full vs contracted forms with latin-based collocates in COHA

 Drama&Movie

The collocates with Latin-based affixes form a very small group, comprising only around 3%. Due to the size of the corpus, however, this provides enough tokens to draw conclusions regarding this category. As Table 4-8 shows, its effect on the use of *gonna*, *gotta* and *wanna* is very clear and consistent. As expected, the contracted forms occur significantly less frequently with Latin-based collocates. Some examples with the verb *discuss* are presented in (109)-(111); these suggest that an element of formality or authority is at play here.

(109) Dr. Samuelson. Excuse me, but are we going to discuss my paper? And the department? (COHA Play:GirlWonder, 1989)
(110) It'll have to wait then. I've got to discuss this business with Adam.

(COHA Play:AdamEva, 1919)

<sup>&</sup>lt;sup>77</sup> Evidently, some of the words captured by this procedure entered the English language through French rather than Latin – this should not affect the information they provide about the formality of the item. In any case, Latin has long been more prominent as a source for new words; as Durkin (2008) notes: "[B]orrowing from Latin appears to come to predominate over borrowing from French from the 1530s onwards" (200).

(111) DETECTIVE SEAMUS MCLEOD harshly: Young lady, I don't <u>want</u> <u>to discuss</u> this with you. Now don't interrupt me! (COHA Play:DetectiveStory, 1949)

Also note that the effect appears to be somewhat less pronounced with *got to/ gotta*. This is not surprising as the full form HAVE *got to* is itself rather informal, and therefore the difference in formality between the full and reduced forms may not be as large here as in the other variations.

#### Sentence Length

The factor 'sentence length' has been implemented as an approximation to complexity. According to Rohdenburg's (1996) complexity principle, "more explicit grammatical alternatives tend to be preferred in cognitively more complex environments" (149). If this applies to the variations investigated here, the full forms must be considered the initially more explicit alternatives (since reduction comes with a loss in explicitness) and hence have an advantage over their contracted counterparts in complex environments. Without attempting to provide a formal definition of cognitive or structural complexity, I assume that longer sentences are generally more complex than shorter ones (see Szmrecsanyi 2004 for a vindication of sentence length as a measure of complexity). Hence we may expect longer sentences to favor the full forms, and also for this effect to ebb away with increasing emancipation of the contracted form: once an independent marker of modality, the new variant no longer lacks explicitness and is thus equally compatible with complex structures.

This factor may also tie in with the influence of formality discussed above, as formal situations promote the production of more complex, and longer, utterances. Table 4-9 shows the data distributions with respect to sentence length. Again, the levels are defined in such as way as to yield an equal distribution of token numbers.

sentence length	2-5 words	6-7 words	8-10 words	11-15 words	> 16 words	
going to - gonna	1179 - 756	2480 - 1032	3031 - 1207	2922 - 1182	2265 - 763	p < 0.0001
% gonna	39.1%	29.4%	28.5%	28.8%	25.2%	
got to - gotta	789 - 517	985 - 443	1012 - 366	825 - 334	508 - 197	p < 0.0001
% gotta	39.6%	31.0%	26.6%	28.8%	27.9%	
want to - wanna	1960 - 259	2749 - 259	2897 - 270	2402 - 171	1486 - 126	p = 0.0001
% wanna	11.7%	8.6%	8.5%	6.6%	7.8%	

 Table 4-9: Full vs contracted forms by sentence length in COHA

 Drama&Movie

The effect of sentence length is highly significant in all three variations. Although the shares of the variants are not consistently correlated with sentence length at every level, the expectation that longer sentences favor the full forms is borne out in the data. This is clearly evident in the mean sentence length of each variant:

mean ser	ntence length		<u>difference</u>
going to	10.90 words	gonna 10.23 words	-0.67
got to	9.47 words	gotta 8.79 words	-0.68
want to	9.66 words	wanna 9.07 words	-0.59

The differences of about 0.6 to 0.7 words may not seem very spectacular, but given the large amount of data, this is a very robust result. Examples of long and structurally complex sentences with the full forms are presented in (112)-(114).

- (112) But I've got a yen for him. I've had it ever since that first time I saw him fall off a horse, which is something I'm going to put a stop to, believe me. (COHA Mov:LatinLovers, 1953 -- sentence length = 26 words)
- (113) And there's no law that says we've got to open the door when you ring and let you in, either. (COHA Mov:Delivrance, 1972 -- sentence length = 19 words)
- (114) And before we go any further, I want to say very definitely that unless Dan's program is carried out, I resign tonight. (COHA Play:RoomThisGinThese, 1937 -- sentence length = 21 words)

At the other end of the scale, the group of very short sentences (2-5 words) in Table 4-9 is consistently the one that is most favorable to the contracted form. This is not only a corollary of these sentences' lower complexity, but also the result of a speakers desire to keep an utterance short. The utterances in (115)-(117) exemplify this point, as they each convey a sense of urgency.

- (115) Oh, my God! She's gonna burn! She's gonna die! (COHA Mov:Rabid, 1977 -- sentence length = 3 words)
- (116) URSULA POE -- gotta go. JOHN TOBEY Do y'have to this minute? URSULA POE Yes, I do. (COHA Play:LiveWire, 1950 -- sentence length = 2 words)
- (117) *Tug-of-War is about to start. <u>Wanna</u> come?* (COHA Mov:BlueSky, 1994 -- sentence length = 2 words)

# **'Horror Aequi'**

The phenomenon of 'horror aequi' is "the widespread (and possibly universal) tendency to avoid the unmotivated recurrence of identical and adjacent grammatical elements or structures" (Rohdenburg 2007: 220). Applied to the particle *to*, this provides us with a potential structural determinant of the use of *gonna*, *gotta* and *wanna*. A sentence like *We're going to need to work hard* should be dispreferred because of the recurrent *to*-infinitive.<sup>78</sup> The variant *gonna* may then have an advantage, if it is seen as a separate item and the second syllable is no longer recognized as reduced *to*. The presence of this effect would thus indicate advanced emancipation.

However, some caution is in order when considering this idea. Firstly, it has been asserted that in the process of its grammaticalization the construction *going to* V has been reanalyzed from *going + to*-infinitive to *going to* + bare infinitive (Fischer 2007: 145), which would presumably also apply to *got to* and *want to*. It is therefore problematic to speak of a recurring *to*-infinitive. Secondly, on the technical side, the search mechanism applied to the data does not distinguish different types of *to* and thus also captures cases such as *We're going to go to Chicago next week*. As such, the 'horror aequi' investigated here is based solely on the superficial recurrence of the element *to*, irrespective of its function – this makes for a rather mild form of 'horror aequi', and it indeed only mildly affects the variation of full and contracted semi-modals (see Table 4-10).

collocate	<i>t</i> o-construction (horror aequi)	other	
going to - gonna	470 - 244	11407 - 4696	p = 0.004 <sup>-</sup>
% gonna	34.2%	29.2%	
got to - gotta	180 - 70	3939 - 1787	p = 0.283
% gotta	28.0%	31.2%	
want to - wanna	638 - 55	10856 - 1030	p = 0.5064
% wanna	7.9%	8.7%	

|--|

Naturally, the cases in which 'horror aequi' applies make up only a very small portion of the data, however these are more than, for example, those of the Latin-based collocates, and certainly enough to yield a reliable result. What emerges from the data (Table 4-10) is that only *gonna* profits from a following construction with *to*. The shares of *gotta* and *wanna* are even slightly reduced in this condition. If the proposal that the 'horror aequi' effect indicates a

<sup>&</sup>lt;sup>78</sup> Such an effect was found for the variation of *help to* V<sub>inf</sub> and *help* V<sub>inf</sub> by Lohmann (2011).

contraction's advanced emancipation, it follows, once again, that *gonna* is the most progressive of the contracted semi-modals.

The most frequent *to*-collocate of *going to/gonna* is *have to* with 278 tokens; here, *gonna* has a share of 40% (110 tokens, see example (118)). With *try to*, on the other hand, *gonna* occurs in only 13% of the cases (6 out of 47, see example (119)). Thus, it appears that the effect of 'horror aequi' on *going to* and *gonna* does not apply consistently, but depends also on preferences with respect to individual sequences.

- (118) I'm <u>gonna have to</u> drop Vanessa from the class if she keeps forgetting her violin. (COHA Mov:MusicHeart, 1999)
- (119) We don't know anything except that you've got some money and that you're going to try to get out of the country. (COHA Mov:SplitSecond, 1953)

Mair (1997) notes that structures like *going to/gonna have to* are more common in American than British English and asks: "[I]s this to do with the fact that the contraction (*X is gonna have to do something*) is more widespread in American English?" (1540) Given that the present data confirm the structure in question to be a favorable environment for the contraction, it appears that this conjecture is correct, though perhaps not generalizable.

### Source Type

As described above, the data in the Drama&Movie subcorpus of COHA are from two similar yet distinct kinds of text: stage plays and movie scripts. This distinction has been included in this study mainly as a control variable. It turns out, however, that the two source types differ quite drastically in terms of the frequencies at which full forms and contractions of the semi-modals are used. As Table 4-11 shows, the relative frequencies of the contracted forms are consistently higher in movies than in drama. Examples (120)-(125) illustrate the different variant choices in otherwise very similar utterances.

source type	Drama	Movie	
going to - gonna	7666 - 2547	4211 - 2393	p < 0.0
% gonna	24.9%	36.2%	
got to - gotta	2761 - 850	1358 - 1007	p < 0.0
% gotta	23.5%	42.6%	
want to - wanna	7866 - 635	3628 - 450	p < 0.0
% wanna	7.5%	11.0%	

Table 4-11: Full vs contracted forms by source type in COHA Drama&Movie

- (120) *Leonie can't work. She's <u>going to</u> have a baby.* (COHA Play:LovesOldSweet, 1940)
- (121) *Hey Bill, did you hear about Susie? She's gonna have a baby.* (COHA Mov:ThisDayForward, 1946)
- (122) *Oh -- oh -- help -- I need some help. Anyone. You've <u>got to</u> come quick. (COHA Play:OperationSidewinder, 1970)*
- (123) *Rold! Rold! You <u>gotta</u> come quick!* (COHA Mov:HaroldKumarGoWhite, 2004)
- (124) WILMA Where to? ANDREW WELLS Anywhere you want. WILMA But I don't want to go anywhere! (COHA Play:JudgementInMorning, 1952)
- (125) [...] let's go someplace, now. It's still early. ELLEN (not looking at him) I don't wanna go anywhere. (COHA Mov:SomeoneToWatch, 1987)

The (linguistic or situational) motivation for using a contracted variant should in principle be the same, regardless of whether one writes for the stage or the screen. The difference evidently lies in the writers' readiness or reluctance to follow these motivations. For one thing, stage and screen impose different priorities: While for actors on stage it is necessary to speak clearly, movie characters need to sound as natural as possible. Thus, the full forms have an advantage in Drama due to their (at least initially) greater explicitness. In movies, on the other hand, the colloquial nature of the contractions may make them preferable. Assuming this is indeed responsible for the data presented in Table 4-11, a contracted form's increased emancipation should decrease the difference in usage between the two registers, as the contraction no longer lacks explicitness when considered an independent lexical item.

An additional consideration may be that stage plays tend to pay greater adherence to the standards of writing, as they are rather written with the ambition of producing a piece of literature. Movie scripts, on the other hand are predominantly perceived as a part of the movie's production process (rather than a self-contained text), and are therefore less standardized.<sup>79</sup> On this account, it is natural to expect Drama to adopt the use of the contracted forms more slowly, just as the standards of writing tend to be reluctant to change.

For the present purpose, we may therefore suppose that Drama is the more conservative register, and Movie the more progressive. This delineation

<sup>&</sup>lt;sup>79</sup> One might say that the 'work of art' that remains once the work is completed, and that which its title generally refers to, is the written text of a drama, not a particular staging of it, and the screen version of a movie, not its script.

between register types is thentaken to reflect the social component of the variation, albeit to a limited extent.

# **Type of Modality**

The type of modality a form is used to express can be a crucial aspect of change. When a contracted form is found to increasingly take on a specialized meaning, this functional divergence from the source form is seen as an indicator of its increasing independence. The categories of modality types employed here are the same as in chapter 3. That is, for *going to/gonna*: 'intention' (126)-(127), 'prediction' (128)-(129), 'epistemic' (130)-(131) and 'deontic' (132)-(133); additionally, there are ambiguous cases, usually between 'intention' and 'prediction' (134)-(135).

- (126) OCEAN: What do you plan to do about it? ADELE: Plenty! I'm going to do plenty! (COHA Mov:OceansEleven, 1960)
- (127) You don't never point a gun at somebody unless you're gonna use it.(COHA Mov:ManhattanTransits, 1989)
- (128) *He 's going to die if you throw him out*. (COHA Mov:MemphisBelle, 1990)
- (129) [...] your father never got him, I never got him, and you're never <u>gonna</u> get him (COHA Mov:BigEasyThe, 1987)
- (130) Jack, out of ten thousand rounds of ammunition, one or more is <u>going to</u> be a dud... (COHA Mov:WarGames, 1983)
- (131) [...] a fellow sleeping in a cold bed every night fer fifteen year is gonna have some thoughts, ain't he? (COHA Play:FieldGod, 1927)
- (132) Listen to me, you fat-gutted soak you're going to do as you're told – understand? (COHA Mov:RideHighCountry, 1962)
- (133) Shut up! You ain't gonna be telling nobody nothin' pretty soon.(COHA Play:BornYesterday, 1945)
- (134) *MRS. HOAG: How long are you going to have this old drunk guarding the door? SINFOROSA: Who knows?* (COHA Play:LastBorder, 1944)
- (135) [...] Maybe I made a mistake hookin' you in with it but you're in! BILLIE DAWN: Well, I'm not gonna be. I decided. (COHA Play:BornYesterday, 1945)

For *got to/gotta*, the categories are 'deontic generic'<sup>80</sup> (136)-(137), 'deontic specific' (138)-(139) and 'epistemic' (140)-(141).

- (136) Everyone has a chance in this world; but we've all <u>got to</u> work hard, of course. (COHA Play:Fog, 1914)
- (137) *Sometimes you gotta bend with the wind or break.* (COHA Play:DetectiveStory, 1949)
- (138) *I <u>got to</u> have dough tonight, Al! Forty-five hundred*. (COHA Mov:WonderBar, 1934)
- (139) It's my mother-in-law's birthday and I gotta plant some stupid rose bush and then take her out to dinner [...] (COHA Mov:NewYorkMinute, 2004)
- (140) She 's <u>got to</u> be lying, otherwise this would be a very short test [...](COHA Mov:AssignmentThe, 1997)
- (141) *BOZO: You gotta know somethin', you're old. GRANDPA: I don't know a thing.* (COHA Mov:Feast, 2004)

Finally, the modality types of *want to/wanna* are 'volition' (142)-(143) and 'deontic' (144)-(145).

- (142) Anyway, I'm tired of sitting around. I <u>want to</u> work off a little fat. (COHA Mov:HuntManDown, 1950)
- (143) I been tellin' the ladies about your music and they <u>wanna</u> hear you play. (COHA Mov:LadykillersThe, 2004)
- (144) CALAIH: Paper? It makes no difference. LETTER WRITER: No difference. Certainly you do not want to send a message to the High Lord on coarse brown parchment. (COHA Play:SistersWinter, 2001)
- (145) Say, you <u>wanna</u> watch your step, baby, or you're li'ble to go right up in a puff o' smoke. (COHA Play:StreetScene, 1928)

Assigning the type of modality to a token often requires viewing it in its larger context. This is, of course, not feasible for the entirety of the present data (comprising 35,372 tokens). Therefore, random samples were extracted from

<sup>&</sup>lt;sup>80</sup> As in chapter 3, 'generic' here includes generic situations, not only generic subjects. Thus, the following example falls into the category 'deontic generic', for example:

You may be rich as hell, Diana, but you've got to give Roger the impression every day that you thank him [...] (COHA Play:CementHands, 1963)

the data. The random samples consist of 75 instances (where possible<sup>81</sup>) of each variant in each decade, resulting in a total of 1,437 tokens of *going to/gonna*, 1,381 of *got to/gotta*, and 1,213 of *want to/wanna*. This sampling technique ensures that a useful number of the less frequent variant are included in the analysis. Obviously, this does not match the overall variant distribution, as the sampling method coerces the data towards a 50-50 distribution. Tables 4-12 – 4-14 therefore display the distributions in terms of the share of each modality type in the tokens of each variant.

	going to	%	gonna	%
intention	355	47.3%	294	42.8%
prediction	201	26.8%	223	32.5%
epistemic	103	13.7%	104	15.1%
deontic	56	7.5%	42	6.1%
(ambiguous)	35	4.7%	24	3.5%
TOTAL	750	100%	687	100%

Table 4-12: Types of modality for going to/gonna

The differences between *going to* and *gonna* are far from being a functional split, however there are clear quantitative tendencies. *Gonna* is used less frequently as an expression of 'intention' than *going to*, but more often as 'prediction' and 'epistemic', which represent a more advanced stage of grammaticalization. This distribution moreover confirms the findings in chapter 3, in which the contraction is also favored for expressing 'prediction' and disfavored for deontic uses.

With (HAVE) got to/gotta, the specific deontic sense is dominant, followed by generic deontic. Epistemic uses, on the other hand, have only a small share, but are present from the beginning of the time-span covered here (and thus appear much earlier than Burchfield's (1996) first attestation from "the late 1960s" (352)).

	got to	%	aux. dropped	gotta	%	aux. dropped
deont. spec.	453	60.4%	29%	390	61.8%	90%
deont. gen.	240	32.0%	34%	202	32.0%	83%
epistemic	57	7.6%	11%	39	6.2%	46%
TOTAL	750	100%	29%	631	100%	85%

p(variant)=0.5786, p(auxiliary)<0.0001

Table 4-13: Types of modality for (HAVE) got to/gotta

<sup>&</sup>lt;sup>81</sup> The contracted variants have a total number of less than 75 in the first decades.

No great differences are found between *got to* and *gotta* with respect to the modality types they express. The slightly higher rate of 'deontic specific' uses with *gotta* was also found in chapter 3.2., but is far from reaching statistical significance. Table 4-13 also includes the rates of auxiliary omission with each variant and modality type, which shows a strong effect on epistemic uses where auxiliary HAVE tends to be retained. Also, it seems that the variant  $\emptyset$  *gotta* is particularly given to immediate obligation or necessity (i.e. 'deontic specific', as in example (139)).

As for *want to/wanna*, uses that deviate from the default 'volition' reading are rare, regardless of the variant (see Table 4-14). Recall, however, that in the spoken language data the share of the deontic use was somewhat higher (16%) and tended more towards the contraction (3.2.1.2.). This affirms that deontic *wanna* is a colloquial way of expressing weak obligation, though it is not preferred in written dialogue.

	want to	%	wanna	%	
volition	724	96.5%	438	96.5%	
deontic	26	3.5%	16	3.5%	
TOTAL	750	100%	454	100%	p=0.95

Table 4-14: Types of modality for want to/wanna

# 4.4. Modeling Changes in Variation

The above results indicate that all of the factors considered have an effect on at least one of the variations between full and contracted semi-modals. The next step is therefore to incorporate these factors in a multivariate model, paralleling the approach taken in chapter 3.3, in order to see how the factors play out in combination. The factor 'type of modality' is not included in these models, as it is only incorporated in smaller samples of the data, and therefore needs to be considered separately. As before, logistic regression models are used, however in this instance all factors (except 'type of modality') are included without attempting to derive a minimal adequate model. The models are presented in Figures 4-10 - 4-12. For details on the Analysis of Variance and the Z scores, see the introduction of logistic regression in section 3.3.1. Note that here again, a positive Z indicates a higher chance of contraction.

These analyses are, of course broad generalizations over an entire century. I therefore discuss these models only briefly. Their purpose is to provide the

backdrop for the investigation of the more important question: How do the determinants of the variations change over time?

<u>Logistic Regressi</u>	on Model	<u>L</u>			going to / gonna
<u>dependent variabl</u> <u>Frequencies of re</u> <u>going to - 11877</u> <u>gonna - 4940</u> <u>Model fit:</u> C=0.62	<u>e:</u> varia sponses: 7	ant :	(going to	o   <u>c</u>	gonna)
Analysis of varia	nce Chi Ca	ما	f D		R. Caana
preceding item	375.29	8	<.0001	***	<u>2-Score</u> 9.39(beg.phr.) -9.36(full BE)
following sound	45.30	3	<.0001	***	5.8 (end phr.)
string frequency	22.10	1	<.0001	***	-4.7
latin collocate	11.42	1	0.0007	***	-3.38 (latin)
sentence length	9.13	1	0.0025	**	-3.02
horror aequi	7.31	1	0.0069	**	2.7( <i>to</i> -constr)
source type TOTAL	248.09 712.01	1 16	<.0001 <.0001	* * * * * *	15.75 (movie)

Figure 4-10: LRM of going to versus gonna in COHA Drama&Movie

					<u>got t</u>	<u>co / gotta</u>
<u>Logistic Regressi</u>	on Mode	L				
<u>dependent variabl</u>	<u>e:</u> varia	ant	(got to	got	ta)	
Frequencies of re	sponses	<u>:</u>				
<i>got to -</i> 4119						
<i>gotta -</i> 1857						
Model fit: C=0.66	51					
<u>Analysis of varia</u>	ince					
Factor	<u>Chi-Sq</u>	d.:	f.P		<u>Z-Scor</u>	<u>e</u>
preceding item	154.89	6	<.0001	***	10.27(	(beg.phr.)
following sound	20.60	3	0.0001	***	4.35(	(end phr.)
string frequency	2.71	1	0.0996	•	1.64	
latin collocate	4.23	1	0.0396	*	-2.06	(latin)
sentence length	8.26	1	0.0040	**	-2.81	
horror aequi	1.36	1	0.2431			
source type	218.89	1	<.0001	***	14.97	(movie)
TOTAL	410.85	14	<.0001	***		

Figure 4-11: LRM of got to versus gotta in COHA Drama&Movie<sup>82</sup>

<u>Logistic Regressi</u>	on Model	<u>L</u>			<u>want t</u>	co / wanna				
dependent variable: variant (want to   wanna)										
Frequencies of re	<u>esponses</u> :	<u>.</u>								
want to - 11494										
<i>wanna -</i> 1085										
Model fit: C=0.63	37									
<u>Analysis of varia</u>	ance									
Factor	Chi-Sq	d.f	E. P		<u>Z-Sco</u>	re				
preceding item	239.25	8	<.0001	***	3.38(	(beg.phr.)				
following sound	3.51	3	0.3201							
string frequency	0.02	1	0.8935							
latin collocate	5.99	1	0.0144	*	-2.45	(latin)				
sentence length	1.14	1	0.2851							
horror aequi	0.19	1	0.6592							
source type	32.66	1	<.0001	***	5.71	(movie)				
TOTAL	312.90	16	<.0001	***						

Figure 4-12: LRM of want to versus wanna in COHA Drama&Movie

<sup>&</sup>lt;sup>82</sup> For this analysis, the levels 'adverb' and 'negation', and '*we*' and '*they*' of the factor 'preceding item' have been conflated.

The significance levels of the various effects reported in the single factor analyses (Tables 4-3 - 4-14 in section 4.3.) are largely replicated in the analyses of variance in Figures 4-10 - 4-12. All factors show highly significant effects for *going to* versus *gonna*. For *got to/gotta* the factors 'preceding item', 'following sound' (for the effects at phrase boundaries), and 'source type' also score as highly significant. In this variation, significance is also found for 'sentence length' and 'latin-based collocate'; 'string frequency', on the other hand, is relegated to marginal significance, and 'horror aequi' has no significant effect at all (as in Table 4-10). For *want to/wanna*, only the factors 'preceding item', 'Latin-based collocate', and 'source type' showed significant effects in the multivariate model, matching their individual effects in 4.3.1 – with the exception of sentence length, whose apparent effect (see Table 4-9) seems to be overridden by those of the other factors, and thus does not reach significance level in the model in Figure 4-12.

Perhaps more important than the factors' significance levels, however, is the actual performance of the models: None of them provides a very good description of what determines the variation in question. With C indices between 0.63 and 0.68 they clearly fall behind the desired 0.8 (Gries 2009: 297, and see 3.3.1.). There are two important aspects that they do not encompass. One is the social dimension – it seems that the contractions are often used to establish a character's low social status or education level. As mentioned at the beginning of this chapter, it is impossible to operationalize this factor in the present data set, which results in a shortcoming in the analysis that cannot be helped. The other missing aspect is the time of occurrence, whose impact on the rate of contraction has been shown in 4.2. It would, of course, be possible to implement this determinant in the models, and this would certainly improve them significantly. However, the goal here is not to attain the best possible models, but rather to determine how time affects the factors under investigation. Therefore, I only show how different encodings of the factor 'time of occurrence' improve each model. This variable may be encoded by the exact year (the most precise measure), by decade (as the output on the COHA interface does), or by two time periods defined to match the findings of 4.2, i.e. before and after the 'contraction boost'. As such, the 'early' period spans 1910-1969 and the 'late' period 1970-2005.

time measure	-	year	decade	2 periods
going to / gonna	C=0.636	C=0.757	C=0.754	C=0.751
got to / gotta	C=0.661	C=0.8	C=0.799	C=0.802
want to / wanna	C=0.637	C=0.776	C=0.773	C=0.768

Table 4-15: Concordance indices of LRMs with different implementations of 'time of occurrence' As Table 4-15 shows, implementing the time of occurrence brings the models close to a C index of 0.8. Thus, it seems safe to assume that the data do generalize over the social factors that cannot be captured. More importantly, there is hardly any loss in model accuracy from the most precise encoding of time (i.e. 'year') to the broadest (i.e. '2 periods'). These two time periods can thus be taken as a sufficiently accurate implementation of time, which is advantageous in its simplicity. They are therefore applied in the further investigation into changes in the variations.

For a general overview, and to provide a basis for comparison for the data to follow, the token numbers and distributions for each of the variations in each of the two time periods are given in Table 4-16.

		going to	gonna	got to	gotta	want to	wanna
1910 -	tokens	7514	1160	2927	438	6401	154
1969	share	86.6%	13.4%	87.0%	13.0%	97.7%	2.3%
1970 -	tokens	4363	3780	1192	1419	5093	931
2005	share	53.6%	46.4%	45.7%	54.3%	84.5%	15.5%

Table 4-16: Full and contracted forms by time period in COHA Drama&Movie

## **Tracking Changes**

With the relative frequencies of the full and contracted variants of the semimodals undergoing such drastic change in the late 1960s, we must ask whether the determinants of the variations also change. If they do, how? And do these changes bear witness to an emancipation process?

In order to measure such changes in the effects of the determinants, the two time periods delineated above are used as a binary factor. For each variation, the variables described above (see 4.3.) are then tested for their interaction with this factor in a single model. In this model, a significant interaction indicates that the factor's effect changes significantly from the 'early' to the 'late' period, i.e. it changes concurrently with the contractions' sudden rise in frequency. As all these interactions are subsumed in one logistic regression model, their effects are weighed against one another. Statistical significance thus also means that a factor's changing effect is essential to explaining the variation overall. In comparing these models of change to the variation models in Fig. 4-10 - 4-12, there are, in principle, three possible outcomes for each factor:

- a) a stable effect on the variation (significance in the variation model, no significant interaction with 'time')
- b) a changing effect on the variation (significant interaction with 'time')c) no effect (no significance in either model)

The cases of b) are obviously the most interesting; here, we need to further ask whether the effect increases, diminishes, or shifts between factor levels.

## 4.4.1. Changes in the Determinants of going to / gonna

The Analysis of Variance in Figure 4-13 lists the significance values (p) of each factor's interaction with 'time period' as defined above. Obviously, higher significance (i.e. lower p-values) of an interaction indicate a more drastic change in the factor's effect on the variation. Note that Figure 4-13 does not show the entire Analysis of Variance of the model, but only the interactions (as only these are relevant here).

		goi	ing to /	gonna						
Logistic Regression Model	Logistic Regression Model									
Dependent variable: variant (ge	Dependent variable: variant (going to   gonna)									
Model accuracy: C=0.754										
Independent variables' interact	cions wi	th 'ti	lme perio	d <b>':</b>						
<u>Analysis of Variance</u>										
Factor	<u>Chi-Sq</u>	d.f.	P							
[]										
<pre>time_period * preceding_item</pre>										
(Factor+Higher Order Factors)	28.46	8	<.0004	***						
time_period * following_sound										
(Factor+Higher Order Factors)	8.20	3	0.0420	*						
<pre>time_period * string_frequency</pre>										
(Factor+Higher Order Factors)	17.01	1	<.0001	***						
<pre>time_period * latin_collocate</pre>										
(Factor+Higher Order Factors)	2.00	1	0.1576							
<pre>time_period * sentence_length</pre>										
(Factor+Higher Order Factors)	7.54	1	0.0060	**						
time_period * horror_aequi										
(Factor+Higher Order Factors)	2.77	1	0.0958	•						
time_period * source_type										
(Factor+Higher Order Factors)	2.93	1	0.0870							
TOTAL INTERACTION	63.18	16	<.0001	* * *						

Figure 4-13: Interactions with 'time period' in a LRM of going to versus gonna

Most of the interactions with 'time period' in the analysis of variance in Figure 4-13 are found to be significant to some degree. Thus, we can affirm that on the whole, the fabric of the variation changes with the rise of the contractions. The highest significance, and thus the strongest momentum of change, is found with

the factors 'preceding item' and 'string frequency'; the time interactions of 'sentence length' and 'following sound' are also clearly significant. Of marginal significance are the developments of 'horror aequi' and 'source type'. 'Latin collocate' appears to be the most stable of the determinants (although its effect was expected to diminish). To interpret these results, each factor's development needs to be considered individually. The type of modality, which is coded only for a limited sample of the data, is not included in the model in Figure 4-13, but is considered separately below.

# Preceding Item

The high significance level for the interaction of 'preceding item' with 'time period' in Figure 4-13 suggests that the influence of collocates on the variation between *going to* and *gonna* undergoes a substantial change. Detailed inspection of the data does not, however, immediately reveal a very clear picture. Table 4-17 presents the development for each preceding item from the early to the late period. Recall that the total share of *gonna* is 13.4% in the early period and 46.4% in the later.

1/10 1/0/	1910	- 1969
-----------	------	--------

preceding item	'm	're	's	full BE	was/ were	not/n't	NP	ADV	beg. of phrase
going to - gonna	1606 - 231	1132 - 159	955 - 176	819 - 53	601 - 41	901 - 161	1228 - 236	234 - 61	38 - 42
% gonna	12.6%	12.3%	15.6%	6.1%	6.4%	15.2%	16.1%	20.7%	52.5%

### <u>1970 - 2005</u>

preceding item	'm	're	's	full BE	was/ were	not/n't	NP	ADV	beg. of phrase
going to - gonna	816 - 736	702 - 657	598 - 557	521 - 175	363 - 184	584 - 435	559 - 760	209 - 217	11 - 59
% gonna	47.4%	48.3%	48.2%	25.1%	33.6%	42.7%	57.6%	50.9%	84.3%

Table 4-17: going to versus gonna by preceding item in the early andlate period of COHA Drama&Movie

How the effect of the factor 'preceding item' changes is not initially apparent from this table. The share of *gonna* increases in all contexts and their respective effects remain largely stable. This looks very much like a Constant Rate Effect (cf. Kroch 1989), with the frequency of the newer variant (*gonna*) rising constantly across all contexts. The significance of the factor's interaction with time appears to be based on some smaller shifts in preference, which are more clearly discernible in the graph in Figure 4-14. Here, the zero line depicts the overall contraction rate of the respective time period, and the columns represent the relative deviation from this rate (in percent). Thus, the dark column shows a preceding item's effect in the early period, and the light column shows its effect in the late period. A downward column indicates that the context disfavors *gonna*, while an upward column indicates a favoring context.



Figure 4-14: %gonna – deviation from mean by preceding item and time period

According to Figure 4-14, the preceding items that show the strongest effects over the entire century ('beginning of phrase', 'full BE', '*was/were'* – Table 4-3 above) do so in both time periods, but their effects are somewhat weakened in the later period. The same holds for the initially very strong effect of 'adverb', and on a smaller scale for preceding 's. This interpretation should, however, be viewed with caution, as the rate of contraction is lower overall in the early period, leading to the appearance of more extreme effects.<sup>83</sup> Inasmuch as this is a leveling of effects, it points to an emancipation development, as the choice of a variant is shown to become less tied to the immediate linguistic context.

Surprisingly, the first and second person pronouns (*I'm*, *you're/they're*) change the direction of their (albeit small) effects from less to more contraction. Since these are the most frequent, and perhaps most natural, preceding items, one would rather expect them to favor contraction from an early stage. Negation, on the other hand, initially favors then slightly disfavors *gonna*, again contradicting expectation if it is seen as a syntactically more complex context.

<sup>&</sup>lt;sup>83</sup> More precisely, the smaller reference value in the early period (13.4) makes extreme deviations more likely. At the beginning of a phrase *gonna* is perhaps no less favored in the late period but is simply coming close to the saturation level. This obviously cannot be said for the disfavoring contexts (full BE, *was/were*).

These developments can be explained by stress patterns<sup>84</sup>: A negation marker (or negated auxiliary) necessarily requires some emphasis, and hence the following *going to* is automatically less emphasized; it is therefore more easily reduced to "gonna". In contrast, the rather predictable pronoun subjects tend to be de-emphasized, resulting in a stronger accent on *going to* and thus inhibiting its reduction<sup>85</sup>. According to this explanation, the changes in Figure 4-14 mark the disappearance of a speech-related effect.

# Following Sound

The change in the effect of 'following sound' is not as influential as that of 'preceding element', but is still statistically significant (see Fig. 4-13). Recall that the effect of 'following sound' found in 4.3. is actually an effect of occurrence at the end of a phrase (rather than different phonemic features), where *gonna* is strongly favored. Table 4-18 presents the distribution of *going to* and *gonna* with respect to the following sound in the early and the late periods.

## <u> 1910 - 1969</u>

following sound	vowel	voiced cons.	voiceless cons.	end of phrase
going to - gonna	329 - 43	4801 - 765	2373 - 349	11 - 3
<b>% gonna</b> (tot.13.4%)	11.6%	13.7%	12.8%	21.4%

# <u>1970 - 2005</u>

following sound	vowel	voiced cons.	voiceless cons.	end of phrase
going to - gonna	196 -125	2715 - 2380	1447 - 1244	5 - 31
<b>% gonna</b> (tot.46.4%)	38.9%	46.7%	46.2%	86.1%

Table 4-18: *going to* versus *gonna* by following sound in the early and late period of COHA Drama&Movie

The change in this factor's effect is clearly the emerging preponderance of the contraction at the end of a phrase. In terms of relative deviation from the overall mean (as applied in the chart in Figure 4-14), 'end of phrase' contexts favor *gonna* by 59.7% in the early period, and by 85.6% in the late period. The other levels of the factor are uninformative. Both voiced and voiceless consonants

<sup>&</sup>lt;sup>84</sup> If we assume that such speech-related aspects may be reflected in written-to-be-spoken data.

<sup>&</sup>lt;sup>85</sup> This interpretation seemingly contradicts the high rate of phonetic reduction found with preceding *I'm* in 3.3.1.2. above – however, it appears that this propensity for reduction occurs at a later stage (the younger speakers in chapter 3) and also on a purely phonetic level.

remain very close to the average, while following vowels slightly but steadily disfavor *gonna*.

It is argued above that the preferred use of the contracted form at the end of a phrase should be seen as a structural difference between the contraction and its source form, and is thus an indication of its independence. When this effect increases, as it does in the case of *gonna*, it is therefore evidence for the contraction's emancipation from the source form.

## String Frequency

For the factor 'string frequency' the model in Fig. 4-13 presents a highly significant change. We have already seen (in 4.3.) that the influence of string frequency on the variation of *going to* and *gonna* is not straightforward. The same is true of the temporal development of this influence. Table 4-19 presents the data distribution across five string frequency levels in both time periods (paralleling the representation in Table 4-7).

#### <u> 1910 - 1969</u>

string frequency	< 0.2	0.2 - 0.5	0.5 - 1	1 - 5	> 5
going to - gonna	1348 - 254	1035 - 209	850 - 131	1671 - 187	2610 - 379
<b>% gonna</b> (tot. 13.4%)	15.9%	16.8%	13.4%	10.1%	12.7%

<u>1970 - 2005</u>

string frequency	< 0.2	0.2 - 0.5	0.5 - 1	1 - 5	> 5
going to - gonna	1005 - 801	515 - 526	529 - 415	915 - 749	1399 - 1289
<b>% gonna</b> (tot. 46.4%)	44.4%	50.5%	44.0%	45.0%	48.0%

Table 4-19: *going to* versus *gonna* by string frequency in the early and late period of COHA Drama&Movie

While neither time period shows a consistent trend with respect to string frequency, there is an overall effect in the early period that higher frequency collocations tend to favor *going to*. In the later period, the effect is reversed and high string frequencies favor *gonna*. This is evident in the group of verbs with a string frequency over 5 in Table 4-19 (*be, do, get, have*), whose share of *gonna* trails behind the average of 13.4% in 1910-1969, but exceeds the overall rate of 46.4% in 1970-2005. Figure 4-15 shows this reversal of the effect in a statistical modeling for the early and the late periods, in which 'string frequency' is tested as a determinant of the variation. The sign of the coefficient and Wald Z indicate the directionality of the effect: a negative value (as in the 1910-1969 model) signifies reduced use of *gonna* with high string frequencies, a positive

value (as in the 1970-2005 model) shows that the likelihood of using *gonna* is increased with high string frequencies.

1910-1969				
	Coef	S.E.	Wald Z	P
Intercept	-1.78260	0.039658	-44.95	0e+00
string_frequency	-0.02119	0.006257	-3.39	7e-04
1970-2005				
	Coef	S.E.	Wald Z	P
Intercept	-0.17607	4 0.028498	8 -6.18	0.0000
string_frequency	0.00890	6 0.00486	1 <b>1.83</b>	0.0669

Figure 4-15: The changing effect of 'string frequency' on gonna versus going to

It is not quite clear how this should be interpreted. One might reasonably have expected the contracted form to expand from high-frequency collocations to lower frequency ones, based on the assumption that frequent chunks encourage reduction (i.a. Diessel 2007). Instead, we may be seeing a symptom of *gonna*'s social expansion. It has already been suggested that the low-frequency (0.2-0.5) collocates that favor the contracted forms may in part be words associated with specific social groups (see 4.3.1.) – in this light, the development can be regarded a 'de-specialization' of *gonna*, its rise with the highly frequent collocations reflecting its social mainstreaming. However, as the present analysis cannot confirm this with certainty, the import of the change in the effect of 'string frequency' on the development of *gonna* remains inconclusive.

### Latin collocate

This variable's interaction with time is not rated as statistically significant, and the disfavoring effect of collocates with a Latin affix appears to be stable across the century. Table 4-20 shows that it is indeed very strong in both time periods.

	collocate:	Latin affix	other	
	going to - gonna	184 - 13	7730 - 1147	
1910 - 1969	<b>% gonna</b> (tot. 13.4%)	6.6%	13.5%	p = 0.0059
1970 - 2005	going to - gonna	132 - 75	4231 - 3705	
	<b>% gonna</b> (tot. 46.4%)	36.2%	46.7%	p = 0.0031

 Table 4-20: going to versus gonna by Latin collocate in the early and late period of COHA Drama&Movie

As Latin collocates are an indicator of increased formality (see 4.3.), this leads to the conclusion that the full form continues to be considered more appropriate in more formal speech acts. Moreover, it suggests that full forms may in fact explicitly serve to convey a sense of formality. In this respect, *gonna* thus remains a "second class" word.

#### Sentence Length

It was shown above (4.3.) that *gonna* tends to be used more frequently in short sentences, and less so in very long sentences. This effect, too, is subject to change, at a significance level of p=0.006. The development from the early to the late period can be shown by the mean lengths of sentences containing *gonna* compared to those containing *going to*. This is presented in Table 4-21.

mean sentence length	1910-1969	1970-2005	difference
going to	10.84 words	11.01 words	+ 0.17
gonna	9.70 words	10.39 words	+ 0.69
(total)	(10.69 words)	(10.72 words)	+ 0.03

Table 4-21: going to versus gonna by sentence length in the early and lateperiod of COHA Drama&Movie

While the overall mean sentence length remains stable at around 10.7 words, there is a very slight increase in the length of sentences with *going to* (+0.17 words). Sentences with *gonna*, however, show a considerable increase in length (+0.69 words). This indicates that the use of *gonna* extends to longer, and thus more complex sentences over time. This matches the expectation formulated in 4.3. that the Complexity Principle loses its influence on the variation of *going to* and *gonna* as the latter becomes increasingly independent from the former.

On closer examination, it turns out that this increase in sentence length with *gonna* occurs quite abruptly, but precedes the sudden rise of the contractions (the 'Woodstock moment') by some 10-20 years. Figure 4-16 shows the development of mean sentence lengths with each variant over the course of the twentieth century.



Figure 4-16: Mean sentence length with going to and gonna by decade

Note that although *gonna*'s sharp increase in mean sentence length predates the contractions' frequency boost, it does coincide with a rise in frequency: the share of *gonna* increases from 13.1% to 21.6% from the 1940s to the 1950s, with its absolute frequency jumping from 118 to 175 tokens per million words (see 4.2., Table 4-2). This also shows that it is not warranted to assume that the 'Woodstock moment' marks a point of reanalysis at which *gonna*'s status changes abruptly. Rather, Figure 4-16 suggests a conceptual change leading to the subsequent frequency boost.

# 'Horror Aequi'

The interaction of time and 'horror aequi' contexts (constructions with *to* following the semi-modal) is only marginally significant (see Fig. 4-13). In 4.3. it was shown that overall these contexts significantly favor the use of *gonna*. However, as Table 4-22 shows, this only holds in the early time period. After 1970 the effect no longer applies.

	construction:	horror aequi	other	
	going to - gonna	213 - 44	7301 - 1116	
1910 - 1969	<b>% gonna</b> (tot. 13.4%)	17.1%	13.3%	p = 0.0742
	going to - gonna	257 - 200	4106 - 3580	
1970 - 2005 	<b>% gonna</b> (tot. 46.4%)	43.8%	46.6%	p = 0.2414

Table 4-22: going to versus gonna by 'horror aequi' in the early and late periodof COHA Drama&Movie

The disappearance of the 'horror aequi' effect runs counter to the expectation. As an increasingly independent variant without *to*, *gonna* should gain an advantage in environments with other *to*-constructions, not lose it. On the other hand, Szmrecsanyi (2006) finds that the 'horror aequi' effect may be reversed in favor of a priming effect (Szmrecsanyi's " $\beta$ -persistence") – under this premise, *going to* might prime the following *to*-construction.<sup>86</sup>

Moreover, the development shown in Table 4-22 marks the loss of an effect on *going to* rather than *gonna*. In fact, the share of *gonna* tokens that occur in 'horror aequi' contexts rises from 3.8% (44/1160 tokens) to 5.3% (200/3780) – with *going to*, the increase is much more drastic, from 2.8% (213/7514) to 5.9% (257/4363). It therefore seems that *going to* is becoming insensitive to collocation with other *to*-constructions. This indicates that the mechanism that gave rise to *gonna* as a reduction of *going to* continues to be at work: *going to* is increasingly non-compositional, and thus processed (and used) as a single unit indifferent to its individual parts (cf. Bybee 2006: 720).

## Source Type

The type of text a token appears in (stage play or movie script) is another changing factor, though the change is of marginal significance (see Fig. 4-13). It is shown in 4.3. that *gonna* occurs at a considerably higher frequency in movie scripts than in stage plays. Here we can see that this imbalance persists in both time periods (see Table 4-23).

	source type:	Drama	Movie	
	going to - gonna	5093 - 652	2421 - 508	
1910 - 1969	<b>% gonna</b> (tot. 13.4%)	11.3%	17.3%	p < 0.0001
	going to - gonna	2573 - 1895	1790 - 1885	
1970 - 2005	<b>% gonna</b> (tot. 46.4%)	42.4%	51.3%	p < 0.0001



In Table 4-23 it appears that by and large the difference is stable across time periods (and also remains statistically highly significant). A slight change can be detected in the data by considering the deviations from the total share of the contraction in each time period, which are listed in Table 4-24.

<sup>&</sup>lt;sup>86</sup> Yet this explanation, too, is jeopardized by the fact that in no period *going to* is favored by a following *to*-construction.

	source type:	Drama	Movie
1910 - 1969	%gonna - deviation from total	-15.7%	+29.1%
1970 - 2005	%gonna - deviation from total	-8.6%	+10.6%

Table 4-24: going to versus gonna by source type in the early andlate period of COHA Drama&Movie

The relative deviations from the overall share of *gonna* are somewhat less pronounced in the late period. Thus, the effect that stage plays disfavor the contraction has decreased slightly over time. As suggested above (4.3.), what keeps the usage rates of *gonna* low in Drama could be either its perceived lack of explicitness (qua reduction) or a higher level of standardization in Drama as compared to movie scripts. With the effect persisting but showing subtle signs of abatement over the century, it appears that both are true. As *gonna* becomes more conventional in general, it also becomes more acceptable in Drama writing, but it nevertheless remains a non-standard orthographic form and so may also remain reserved for non-standard uses in this genre.

Taking the supposition that the conservatism in Drama writing reflects particular social norms, the softening of the difference must then be considered a reflection of *gonna*'s social mainstreaming.

### Type of Modality

The factor 'type of modality' has only been coded on a sample of the data and is therefore evaluated separately. Recall that overall, the types 'prediction' and 'epistemic' slightly favor *gonna*, whereas 'intention' and 'deontic' slightly disfavor it (see 4.3.). By comparing the early and late time periods, we can see that these trends undergo some shifts over the course of the twentieth century; consider the distributions in Table 4-25.

modality type	intention	prediction	epistemic	deontic	(ambig.)	TOTAL
going to	227	114	54	37	18	450
% of going to	50.4%	25.3%	12%	8.2%	4%	100%
gonna	170	111	56	33	16	386
% of <i>gonna</i>	44%	28.8%	14.5%	8.5%	4.1%	100%
p=0.445						

1910 - 1969

modality type	intention	prediction	epistemic	deontic	(ambig.)	TOTAL
going to	128	87	49	19	17	300
% of going to	42.7%	29%	16.3%	6.3%	5.7%	100%
gonna	123	112	48	9	8	300
% of <i>gonna</i>	41%	37.3%	16%	3%	2.7%	100%
n-0.046						

<u>1970 - 2005</u>

Table 4-25: *going to* versus *gonna* by type of modality in the early and late period of COHA Drama&Movie

Due to the balance of the sample, the percentages presented in Table 4-25 are directly comparable across time periods. For both variants we see a rise in the more grammaticalized 'predictive' and 'epistemic' uses, while 'intention' and 'deontic' decline. On this trajectory *gonna* can be said to be the more progressive variant in the early period, with the advancing modality types ('prediction', 'epistemic') taking larger shares than with *going to*.

More importantly, the type of modality is a statistically significant predictor for variant choice in the later period (p=0.046), but not in the earlier (p=0.445). The import of 'type of modality' in the later period is carried by 'prediction', which favors the contraction, and 'deontic', which disfavors it. This is reminiscent of the situation found for current American English in chapter 3. Table 4-25 clearly shows that these trends have emerged only recently, as they are not present in the earlier period. On the whole, it would seem exaggerated to speak of a functional divergence between *gonna* and *going to*, but we do see different quantitative patterns emerging for the two variants.

## Summary of Changes in the Determinants of going to versus gonna

We have seen in this section that changes in the relation between the full form (*going to*) and the contraction (*gonna*) occur beyond general frequency shifts. While most of the determinants considered here undergo some degree of change, the emancipation process shows most clearly in the effects of 'following sound' and 'sentence length'. The increasing preponderance of *gonna* at the end of a phrase points to its emerging structural divergence from the full form. Its increasing occurrence in longer sentences shows that *gonna* is becoming a viable variant in increasingly complex environments, and thus coming to be perceived as an (almost) equally explicit marker of modality. This development is comparable to that of speech rate in chapter 3 in that speech rate, too, is related to explicitness; on both measures, *gonna* is shown to be closing in on *going to*.

The statistically most significant changes, those in the effects of 'preceding item' and 'string frequency', are less straightforward in their interpretation. I tentatively conclude, however, that the results for both of these factors point to a diminished influence of speech-related aspects, as variant choice becomes less determined by collocates and emphasis within the sentence.

The decrease in the effect of 'source type' suggests that register constraints are also softening. No such point can be drawn from the stable effect of collocates with Latin-based affixes, however, which indicates that *gonna* is still less likely to be used in more formal speech acts (although this differentiation is on a slight decline). Likewise, the diminishing of the 'horror aequi' effect cannot be put down to the contracted form's emancipation, however it does show the continuously increasing non-compositionality of *going to*.

Taking the measure of modality types, on the other hand, we see a trend towards a functional divergence of *gonna* from *going to*, with *gonna* occupying the more neutral (more grammaticalized) meaning of 'prediction'.

Figure 4-17 provides a condensed - and somewhat simplified - overview of the factors investigated in this section and the direction of the changes in their effects. The latter is indicated by the arrows in the column "change in effect", an arrow pointing upwards means an increase in the strength of the effect, a downward arrow a decrease.



Figure 4-17: Overview of the changing variation of going to and gonna

Note that the factor 'following sound' has been replaced here by 'syntactic position' (as the effect is due to position, not sound), which then comprises both the beginning and end of a phrase. As for the factors pertaining to the syntactic environment, their effects should be expected to increase during the process of emancipation (as a structural divergence), which is indeed the case for the preference of *gonna* at phrase boundaries.

The clearest decline of effects is found with speech-related factors (i.e. collocation/prosody). This corresponds perfectly to the distinction between phonetic reduction and the variation of *gonna* and *going to* established in 3.3.1., where these factors featured strongly in reduction but not variation. On the diachronic scale, it therefore emerges that the form *gonna* develops from a reduced pronunciation variant into an independent item. In other words, it becomes emancipated. The decreasing effects on the measures of explicitness and register also point in that direction, as does the emergence of a semantic differentiation.

The data from the COHA Drama&Movie corpus provide strong evidence that *gonna* is on the path of emancipation, and that this path proceeds along the lines suggested in 3.4.: A rise in relative frequency followed by diminishing
influence of speech-related factors and finally a widened acceptability of the form (here through register and perceived explicitness rather than social parameters). Additionally, a structural divergence has been found with respect to the occurrence of *gonna* at phrase boundaries.

## 4.4.2. Changes in the Determinants of got to / gotta

We now turn to developments in the variation of *got to* and *gotta*. As has been shown, *gotta* rises even more sharply than *gonna* in terms of relative frequency (from 13.0% to 54.3%), but has lower absolute frequencies throughout (see Table 4-16). The approach employed to capture this change is the same here as that used above for *going to/gonna*. The model presented in Figure 4-18 therefore provides specific results concerning the variables' interactions with the factor 'time period', with the significance ratings indicating whether the import of a factor changes over time. Again, what is presented is not a complete model of the variation but only the interactions with 'time period'.

		g	rot to /	gotta
Logistic Regression Model				
dependent variable: variant (go	ot to	gotta)		
Model accuracy: C=0.806		<i>.</i>		
Independent variables' interact	tions wi	th 'ti	me perio	d':
<u>Analysis of Variance</u>				
Factor	<u>Chi-Sq</u>	d.f.	P	
[]				
<pre>time_period * preceding_item</pre>				
(Factor+Higher Order Factors)	13.49	6	0.0358	*
<pre>time_period * following_sound</pre>				
(Factor+Higher Order Factors)	7.21	3	0.0655	•
<pre>time_period * string_frequency</pre>				
(Factor+Higher Order Factors)	0.01	1	0.9314	
<pre>time_period * latin_collocate</pre>				
(Factor+Higher Order Factors)	0.91	1	0.3397	
<pre>time_period * sentence_length</pre>				
(Factor+Higher Order Factors)	8.72	1	0.0032	**
time_period * horror_aequi				
(Factor+Higher Order Factors)	0.10	1	0.7473	
<pre>time_period * source_type</pre>				
(Factor+Higher Order Factors)	29.31	1	<.0001	* * *
TOTAL INTERACTION	62.70	14	<.0001	* * *

Figure 4-18: Interactions with 'time period' in a LRM of got to versus gotta

Only three factors show significant signs of change: 'source type', 'sentence length' and 'preceding item'; a trend at p<0.1 is observed for 'following sound'. It will be seen, however, that the development of the factor 'Latin collocate' is also of some import. Given that in the overall model for *got to/gotta* (Fig. 4-11) the factors 'string frequency' and 'horror aequi' did not feature significant effects, these are ignored in the following examination of the factors' developments.

## Preceding Item

The factor 'preceding item' presents, again, a complex picture. To see the changes in its effects we need to look at the variant distributions in each time period. This is presented in Table 4-26.

<u> 1910 - 196</u>	<u>69</u>
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preceding item	1	you	we/they	3rd P. sing.	NP	ADV/ NEG	beg. of phrase	
got to - gotta	1051 - 150	780 - 129	518 - 75	241 - 20	217 - 24	98 - 9	22 - 31	
% gotta	12.5%	14.2%	12.6%	7.7%	10.0%	8.4%	58.5%	total = 13.0%

#### <u>1970 - 2005</u>

preceding item	I	you	we/they	3rd P. sing.	NP	ADV/ NEG	beg. of phrase	
got to - gotta	333 - 496	400 - 433	230 - 199	107 - 83	77 - 56	40 - 60	5 - 92	
% gotta	59.8%	52.0%	46.4%	43.7%	42.1%	60%	94.8%	total = 54.3%

Table 4-26: got to versus gotta by preceding item in the early and lateperiod of COHA Drama&Movie

Some changes become apparent in Table 4-26 when we compare the individual percentages to the total share of *gotta*. Most strikingly, adverbs/negation switch from a context disfavoring contraction to a favoring one. Preceding *I* and *you* also change their preferences, though on a smaller scale.

It is not immediately clear what this result entails for the emancipation process of *gotta*. The loss of a favoring effect of second person subjects may be taken as a general decrease of context dependence. Recall that in 3.3.2. preceding *you* was found to favor the use of *gotta*, which was suggested to result from the chunking of *you got to/gotta*. In the present data it appears that the chunk *you gotta* drives the rise of *gotta* in the early period, but drops out of that role as the contraction catches on in other contexts. The new standard

construction is, as it were, *I gotta*. *I* and *you* are the most frequent items to precede *got to/gotta*, together accounting for 63% of the data. Taken together, their effect on the share of the contraction would be stable over the two time periods. Judging from this, the shift from *you gotta* to *I gotta* does not indicate any progress or regression in emancipation.

The disproportionate rise of *gotta* in the 'adverb/negation' category is more telling. As adverbs are a heterogeneous group<sup>87</sup>, this shift shows that *gotta* becomes less tied to particular collocates, thus pointing to its increased independence. It is therefore not so much a matter of collocation as one of structural embedding. However, this, too cannot be stated without qualification: the most frequent adverb, *just* (n=85), shows a particularly strong shift towards *gotta*, from 8% (3 out of 37) in the early period to 69% (33/48) after 1970. As such, the effect can be largely ascribed to this single item. The shift from *just got to* to *just gotta* is illustrated in examples (146)-(147).

- (146) [...] *but I guess you're right. We just got to do it.* (COHA Mov:DevilDanielWebster, 1941)
- (147) You don't get nothin' done by watchin'. You just gotta do it. (COHA Mov:RagingBull, 1980)

Another phenomenon that plays into the disproportionate rise of *gotta* in the 'adverb/negation' category is the emergence of the negative construction *don't gotta*, which has been touched upon above (4.3.). This construction is certainly a non-standard use (cf. Mair 2012), but when it does occur, it is clear evidence for a structural reanalysis of *gotta*. Note, however, that DO-support also occurs with *got to*, albeit even more rarely, so a closer look is warranted. Table 4-27 shows the distribution of the variants in questions and negative sentences with DO.

		question	negative	TOTAL
1010 1060	got to	1	0	1
1910 - 1909	gotta	2	0	2
1970 - 2005	got to	1	4	5
	gotta	8	7	15

Table 4-27: got to and gotta with DO-support

<sup>&</sup>lt;sup>87</sup> In the present data there are 25 different adverbs and negation markers, disregarding alternate spellings.

The picture that emerges from these sparse data is that DO-support with *got to/ gotta* first occurs in questions<sup>88</sup>, and that it has only gained ground with *gotta*. In negatives, where DO-support only occurs in the later period, *got to* is also dispreferred but far less so than in questions. Thus, in total DO+*got to* increases pari passu with DO+*gotta* (and both on a very small scale). In fact, the five instances of DO+*got to* in the late period are all from the 1990s and 2000s. It seems that *got to* is continuously losing its original syntactic features (as a present perfect) and is, in a sense, used non-compositionally. This ongoing loss in compositionality has also been suggested for *going to* above.

Finally, the preferred use of *gotta* at the beginning of a phrase comes close to an absolute rule in the second half of the twentieth century (at 95%) – this is also the only context in which the overall token number of *got to/gotta* increases. Indeed, it appears to be a niche in which *gotta* (but not *got to*) can withstand the growing competitor HAVE *to*. Figure 4-19, giving the numbers of occurrence at the beginning of a phrase, shows that HAVE *to* does not gain any ground in this context, while use of *gotta* increases drastically.



Figure 4-19: Occurrence of gotta, got to and HAVE to at beginning of phrase

## Following Sound

The development of the effect of 'following sound' is not significant in this model, as shown in Figure 4-18, but appears as a trend at p<0.1. The variant distributions with respect to this factor over the two time periods are presented in Table 4-28.

<sup>&</sup>lt;sup>88</sup> However, in the full COHA corpus, *don't got to* appears as early as 1888: *Naw, sah. Naw; he don't got to go!* (COHA-FIC Bonaventure)

following sound	vowel	voiced cons.	voiceless cons.	end of phrase
got to - gotta	99 - 10	1829 - 274	997 - 138	2 - 16
% gotta (tot.13.0%)	9.2%	13.0%	12.2%	88.9%

#### <u> 1910 - 1969</u>

#### <u>1970 - 2005</u>

following sound	vowel	voiced cons.	voiceless cons.	end of phrase
got to - gotta	45 - 59	725 - 909	419 - 437	3 - 14
% gotta (tot.54.3%)	56.7%	55.6%	51.1%	82.4%

Table 4-28: *got to* versus *gotta* by following sound in the early and late period of COHA Drama&Movie

The context with the greatest impact, i.e. 'end of a phrase', remains stable over time, simply because it is already very strong in the early period. Statistically, however, its effect decreases as it counters the general increase in the share of *gotta*. Together with 'beginning of phrase' as a preceding item, what we find is the overwhelming preference for the contraction at phrase boundaries as already observed for *gonna* (4.4.1.). It should be noted, however, that *gonna* has seen a greater increase in this environment; *gotta* was already quite far advanced in the early period in this respect.

Another changing effect is the apparent shift in preference before vowels from a below-average contraction rate of 9.2% in the early period to a slightly above-average rate of 56.7% in the late period. This is somewhat puzzling, as no phonological explanation lends itself to this seemingly phonological effect. I therefore suggest that something else is at play here. Roughly one third of the data in this category (68 out of 213 tokens) is comprised of the verbs *admit, ask* and *understand*. These are often involved in formulaic expressions, such as (148) - (150):

- (148) Well her conformation makes up for her temperament, you gotta admit that much. (COHA Mov:OperationSidewinder, 1970)
- (149) Look, Warden, I got to ask you a question: Is there a highway out there, and down that highway a town, a town with people in it, people just like us? (COHA Mov:DaysWineRoses, 1962)
- (150) You gotta understand, your mother's baby-crazy. It's all she ever wanted. (COHA Play:KimberleyAkimbo, 1999)

With the collocates *admit*, *ask* and *understand*, *gotta* professes an immense increase from 5.7% (2 out of 35) to 63.6% (21/33) over the century. This accounts for its rise with following vowels noted in Table 4-18. These formulaic deontic expressions tend to retain the variant *must* (Jankowski 2004: 92),

presumably because they represent deeply entrenched "discourse rituals" (Tagliamonte 2004: 50). Tagliamonte&D'Arcy (2007) also report that the most common deontic variant, HAVE *to*, has only recently gained ground in this use. Given these observations, we can identify this as another area in which HAVE *to* does not (yet) dominate and *gotta* is favored over *got to*.

## Latin collocate

Another variable whose effect does not undergo any significant change is 'Latin collocate', which indicates formality. Collocates with a Latin-based affix continue to disfavor the use of *gotta*, as Table 4-29 shows.

		latin affix	other	
	got to - gotta	73 - 8	2854 - 430	
1910 - 1969	% gotta (tot. 13.0%)	9.9%	13.1%	p = 0.3972
1970 - 2005	got to - gotta	39 - 24	1395 - 1153	
	% gotta (tot. 54.3%)	38.1%	54.7%	p = 0.01

Table 4-29: got to versus gotta by latin collocate in the early and late period of<br/>COHA Drama&Movie

It is noteworthy that the disfavoring effect of Latin-based collocates with *gotta* only reaches statistical significance in the late period. The competing full form (HAVE) *got to* also started out as an informal variant, yet is gaining acceptability in more and more formal registers. It appears, therefore, that *gotta* is trailing behind its source form in this development and remains the informal variant while (HAVE) *got to* is becoming acceptable.

## Sentence length

The development of the effect of 'sentence length', significant at p=0.0032 in the model in Figure 4-18, is captured by the change in the mean length of sentences with each variant, as presented in Table 4-30. Recall that sentence length is used as a measure of complexity, and hence as an indicator of the variants' explicitness.

mean sentence length	1910-1969	1970-2005	change
got to	9.28 words	9.93 words	+ 0.65
gotta	9.32 words	8.62 words	- 0.7
(total)	(9.29 words)	(9.22 words)	- 0.07

Table 4-30: got to versus gotta by sentence length in the early and late period of<br/>COHA Drama&Movie

Clearly, the effect that *gotta* tends to occur in shorter sentences than *got to* only emerges over the course of the century. This is at odds with expectations, for in the emancipation of contracted forms, we would predict a decrease in sentence length difference. What we see instead is that the development regarding explicitness resembles that of formality. If sentence length is directly translated into explicitness, *got to* and *gotta* start out as equally explicit variants<sup>89</sup> - but while *got to* comes to be perceived as increasingly explicit (becoming increasingly compatible with more complex sentences), *gotta* goes in the opposite direction. That is, *gotta* becomes the less explicit version of *got to*. The split occurs around 1960-1970, thus coinciding with the contractions' frequency boost.

A possible interpretation of these results is that *got to* acquires the properties of greater explicitness and formality under the influence of the increasing use, and increasing independence, of *gotta*: As *gotta* becomes a genuine variant, speakers begin to condition the variation along these variables. Since *gotta* is per se less explicit and less formal, *got to* is reinterpreted as more explicit and more formal.<sup>90</sup>

#### Source Type

According to the model in Figure 4-18 the different usage preferences in 'Drama' and 'Movie' writing are undergoing significant change. However, the data in Table 4-31 show that *gotta* is used at much higher rates in movie scripts both in the early and the late time periods.

		Drama	Movie	
1010 1060	got to - gotta	2053 - 172	874 - 266	n < 0.0001
1910 - 1969	% gotta (tot. 13.0%)	7.7%	23.3%	ρ<0.0001
1970 - 2005	got to - gotta	708 - 678	484 - 741	p < 0.0001
	% gotta (tot. 54.3%)	48.9%	60.5%	μ<0.0001

Table 4-31: got to versus gotta by source type in the early and late period of<br/>COHA Drama&Movie

<sup>&</sup>lt;sup>89</sup> It would seem that the reduction of *got to* to *gotta* was not considered to bring about any loss in explicitness, unlike that of *going to* to *gonna* where not only the particle *to* but also the inflectional suffix *-ing* are obscured.

<sup>&</sup>lt;sup>90</sup> A precedent of this type of reinterpretation may be found in French negation construction *ne* V *pas*: as the preverbal particle *ne* comes to be optional (resulting in the shorter V *pas*), its presence is reinterpreted as a marker of formal and educated speech. (Martineau & Mougeon 2003)

While the effect of the type of genre evidently remains strong, it does recede notably from the early to later part of the twentieth century. This can be shown by the relative deviation from the overall share of the contraction, as presented in Table 4-32.

		Drama	Movie
1910 - 1969	%gotta - deviation from total	-40.8%	+79.2%
1970 - 2005	%gotta - deviation from total	-10.0%	+11.4%

Table 4-32: Source type – deviations from total share of gotta by time periods

This trend parallels that of *going to/gonna*, only is more pronounced. As such, if the suggestion that the Drama/Movie distinction can be linked to social differences is correct, the results here confirm a surmise from the previous chapter, namely that the differences in social features between *gotta* and *got to* are smaller than those between *going to* and *gonna*. The data from the COHA Drama&Movie corpus suggest that this has not always been so.

## Type of Modality

In the previous section (4.3), the type of modality expressed by (HAVE) *got to/ gotta* is shown to be significant for auxiliary deletion, but not variant choice (see Table 4-13). As for diachronic developments, no major change in this factor's effect on either variant choice or auxiliary deletion is observed.<sup>91</sup> Nevertheless, some interesting trends can be found. The data are presented in Table 4-33.

modality type	deont. spec.	deont. gen.	epistemic	TOTAL	
got to	282	139	29	450	
% of <i>got to</i>	62.7%	30.9%	6.4%	100%	
% aux. dropped	25.5%	24.5%	10.3%	24%	
gotta	206	112	13	331	
% of <i>gotta</i>	62.2%	33.8%	3.9%	100%	
% aux. dropped	89.8%	84.8%	61.5%	87%	
p(variant)=0.2565, p(auxiliary)=0.0069					

### <u>1910 - 1969</u>

<sup>&</sup>lt;sup>91</sup> In logistic regression modeling, the interaction of 'time period' and 'modality type' is not statistically significant as a predictor for variant choice (p=0.2978), nor for auxiliary omission (p=0.5093).

modality type	deont. spec.	deont. gen.	epistemic	TOTAL
got to	171	101	28	300
% of got to	57%	57% 33.7%		100%
% aux. dropped	33.9%	46.5%	12%	36%
gotta	184	90	26	300
% of <i>gotta</i>	61.3%	30%	8.7%	100%
% aux. dropped	90.8%	81.1%	38.5%	83%

<u>1970 - 2005</u>

p(variant)=0.5536, p(auxiliary)<0.0001

Table 4-33: got to versus gotta by type of modality in the early and late periodof COHA Drama&Movie

Overall, there is a slight decline of the specific deontic modality and a rise in epistemic uses. The increase of epistemic uses can be taken as a sign of ongoing grammaticalization, as it occurs with both variants but is more pronounced with *gotta*.

With respect to the auxiliary HAVE, there is a clear trend towards its omission with *got to*, shifting from 24% to 36%; *gotta* shows no such trend as with this form, auxiliary omission is already the norm in the early period (at 87%). This indicates that there is an emerging type  $\emptyset$  *got to* used for general necessity or obligation (generic deontic), in addition to the  $\emptyset$  *gotta* type expressing immediate necessity/obligation (specific deontic), as mentioned previously (4.3.). Epistemic readings, on the other hand, oppose the trend of auxiliary omission and retain auxiliary HAVE with both variants in the later period. It should be stressed, however, that these are but subtle trends.

## Summary of Changes in the Determinants of got to versus gotta

Overall, the factors considered here are relatively stable in conditioning the variation between *got to* and *gotta*, certainly more so than for *going to* versus *gonna*. Also, the progress of *gotta* becoming independent from *got to* is harder to detect. The clearest indications of emancipation are found in the effects of the factors 'preceding item' and 'source type'. The weakened disfavoring effect of third person singular pronoun subjects and the extreme rise of *gotta* after adverbs show the contraction becoming less context-dependent. The emergence of the construction DO + *gotta* (and its preference over DO + *got to*) points to the form's detachment from its origin in terms of morphosyntactic properties. Inasmuch as the two source types 'Drama' and 'Movie' represent different

registers, there is a remarkable leveling of the influence of register over time, and hence, by extension, of social characteristics.

A summarizing overview of the investigated factors' effects on the variation of *got to* and *gotta*, and the changes in these effects over time, is presented in Figure 4-20. Here, thicker arrows represent stronger effects; the indicators under the heading "change in effect" again show whether the effect is increasing, decreasing, or stable.



Figure 4-20: Overview of the changing variation of got to and gotta

Of the three factors showing significant change in their effect on the variation ('preceding item', 'sentence length', 'source type'), two have been argued to indicate an emancipation process of *gotta*: the shifts of collocational preferences and the narrowing of the gap between registers. The third, however, i.e. the emerging differentiation in explicitness, does not fit into this picture. Thus, the history of *gotta* cannot only be the story of its emancipation from *got to*.

I submit, perhaps somewhat speculatively, that this story also involves the leveling of the form's social stigma. In the drama and movie scripts from the early twentieth century, the form *gotta* is first and foremost used to mark slang, thus establishing a character's social identity. Of the five instances of *gotta* in

the earliest decade (1910-1919), four are from plays written by Eugene O'Neill, a playwright whose works stand out as "includ[ing] speeches in American vernacular and involve characters on the fringes of society" (wikipedia).<sup>92</sup> On the other hand, (HAVE) *got to* is far less restricted in that time period. As *gotta* becomes less socially marked its variation with (HAVE) *got to* also moves to other grounds and intralinguistic aspects become relevant – *gotta* is then delineated from *got to* as the sloppier, less explicit variant, but not as socially more stigmatized.

In terms of the proposed parameters of emancipation (see 3.4.), *gotta*'s rise in relative frequency remains the strongest evidence of its move towards independence from *got to*. Only a slight decline in the influence of speech-related conditions ('preceding item') is observed, as well as a diachronic trend towards leveling out the register difference.

It has also become clear that the development of *gotta* needs to be viewed in its wider context, as its source form (HAVE) *got to* is not a stable entity across the twentieth century. After an early rise, it then experiences a decline in frequency, slowly giving way to the rebounding variant HAVE *to*. Yet despite the decline of (HAVE) *got to*, the rate of contraction increases, and in terms of absolute frequency *gotta* holds its ground. Clearly, then, the contraction is no longer solely a product of the source form's frequency. On the other hand, the largest shares of the contraction are found in contexts that tend to resist the use of HAVE *to* (i.e. beginning of a phrase, formulaic expressions) – *gotta* is strongest where HAVE *to* is weak.

A more subtle change observed in the use of (HAVE) *got to* is its gradual loss of compositionality (as indicated by the lack of a 'horror aequi' effect and the emergence of DO-support with *got to*), which I take to be a sign of ongoing grammaticalization.<sup>93</sup> Furthermore, omission of the auxiliary HAVE increases starkly with *got to*, while *gotta* (with high omission rates from the start) shows no such strong development (see Table 4-34).

<sup>&</sup>lt;sup>92</sup> This is also credited by literary scholars: "O'Neill reaches the pinnacle of his linguistic art when he depicts his characters speaking in their natural idioms or even dialects" (Bryan & Mieder 1995: 3); "When O'Neill reproduced the speech of uneducated men, he found a fluency that failed him when he used Standard English for his dialogue" (Chothia 1979: 53).

<sup>&</sup>lt;sup>93</sup> in the sense of a higher degree of bondedness, as defined by Lehmann (2002): "The syntagmatic cohesion or bondedness of a sign is the intimacy with which it is connected with another sign to which it bears a syntagmatic relation. The degree of bondedness of a sign varies from juxtaposition to merger, in proportion to its degree of grammaticality." (131)

		got to	gotta	
1010 1060	aux Ø	2153 - 774	54 - 384	
1910 - 1969	% auxiliary omitted	26.4%	87.7%	
1070 2005	aux Ø	749 - 443	220 - 1199	
1970 - 2005	% auxiliary omitted	37.2%	84.5%	
		p < 0.0001	p = 0.1022	

Table 4-34: Auxiliary omission with got to and gotta by time periods

Through this decrease in compositionality, (HAVE) *got to* retains structural similarity to *gotta*, which, when taken as an independent item, is inherently non-compositional. Moreover, it indicates that the construction (HAVE) *got to* is increasingly 'chunked', or "processed as a single unit" (Bybee 2006: 720), which in turn increases its propensity to reduction.

The developments in the variation of *got to* and *gotta* do not straightforwardly conform to the trajectory of emancipation observed with *gonna*. Rather, the history of *gotta* is intertwined with that of its source form, its ongoing grammaticalization as well as its yielding to the advance of HAVE *to*.

## 4.4.3. Changes in the determinants of want to / wanna

The form *wanna* is the least frequent of the contracted semi-modals, both in absolute and in relative terms (see 4.2.). This is in spite of the fact that its source form *want to* is more frequent than (HAVE) *got to* throughout and more frequent than BE *going to* in the second part of the twentieth century. The rise of *wanna* is also less striking than that of *gonna* or *gotta* (again, both in absolute and relative terms). We might therefore also expect other indicators of emancipation to be less pronounced with this form.

In the model shown in Figure 4-12, only the factors 'preceding item', 'Latin collocate' and 'source type' exhibit a significant effect on the choice of *want to* or *wanna*. Considering that the C value of this model does not differ much from those of the models for *going to/gonna* (Figure 4-10) and for *got to/gotta* (Figure 4-11), in both of which more variables rate as significant, the constraints that these three factors impose on this variation should be expected to be more rigid.

It is not only the rise of *wanna* in general frequency that is slower than that of the other contractions, there is also less change in the variables' effects on the variation. Figure 4-21 shows the interactions with the variable 'time period' -

only two rate as statistically significant, and one as a marginally significant trend.

		Wa	ant to /	wanna
Logistic Regression Model				
dependent variable: variant (w	ant to	wanna	a)	
Model accuracy: C=0.775				
4				
Independent variables' interac	tions wi	th 'ti	me perio	d <b>':</b>
-			-	
<u>Analysis of Variance</u>				
Factor	Chi-Sq	d.f.	P	
[]				
<pre>time_period * preceding_item</pre>				
(Factor+Higher Order Factors)	2.07	8	0.9787	
<pre>time_period * following_sound</pre>				
(Factor+Higher Order Factors)	4.15	3	0.2452	
<pre>time_period * string_frequency</pre>				
(Factor+Higher Order Factors)	3.49	1	0.0616	•
<pre>time_period * latin_collocate</pre>				
(Factor+Higher Order Factors)	0.69	1	0.4060	
<pre>time_period * sentence_length</pre>				
(Factor+Higher Order Factors)	7.32	1	0.0068	**
time_period * horror_aequi				
(Factor+Higher Order Factors)	0.96	1	0.3264	
<pre>time_period * source_type</pre>				
(Factor+Higher Order Factors)	17.73	1	<.0001	* * *
TOTAL INTERACTION	39.20	16	<.0001	***

Fig 4-21: Interactions with 'time period' in a LRM of want to versus wanna

When considering the models in Figure 4-12 and Figure 4-21 in combination, the variation of *want to* versus *wanna* offers the whole range of possibilities: two factors with a stable effect ('preceding item' and 'latin collocate', significant in Fig. 4-12 but not Fig. 4-21), and two for which a change is observed ('sentence length' and 'source type'), as well as a minor shift (p<0.1) in a factor that hardly has an effect overall ('string frequency'). We now examine how all this plays out in detail by considering each variable's development individually. The factors 'following sound' and 'horror aequi' need not be considered further as they do not reach statistical significance.

#### Preceding Item and Latin Collocate

The preceding item has a strong impact on the choice of *want to* or *wanna* (Table 4-5), the contraction being especially favored at the beginning of a phrase (just like *gonna* and *gotta*), and to a lesser extend after *you*; preceding

modals and infinitive forms, as well as plural pronouns (*we/they*), disfavor *wanna*. According to the model in Figure 4-21, these preferences undergo no significant change.

On close inspection it occurs that preceding Noun Phrases are an interesting exception. These never occur with *wanna* in the early period (and with 83 tokens, that is no coincidence), but show an above-average rate of contraction (22.3%, 21 out of 94) in the late period. It has already been noted (4.3.) that vocative nominals (*you guys/boys/girls/kids/fellows*) particularly favor *wanna*, and this appears to have a diachronic dimension. In the early period, 11 such nominals are found, all followed by *want to* – in contrast, in the later period 6 out of the 10 occurrences take *wanna*. Thus, in this (very marginal) context the share of the contraction rises from zero to 60%, and the effect of the second person pronoun *you* favoring *wanna* spreads over to *you* +noun constructions. Thus, *wanna* is particularly strengthened when an interlocutor is directly addressed, testifying to its conversational nature.

Collocates with a Latin-based affix show a strong and stable effect in disfavoring the contraction. It is noteworthy that the earliest instance of *wanna* in this context occurs as late as 1950 (151).

## (151)You wanna contribute a third? (COHA Play:LiveWire, 1950)

As Latin-based collocates indicate formal speech types, it appears that *wanna* began to expand into more formal speech relatively late, and is still far from being as acceptable there as in colloquial speech. In terms of emancipation, this is progress, albeit on a small scale.

#### String frequency

The overall distribution of *want to/wanna* shows no clear influence of the factor 'string frequency' (see Table 4-6). Its interaction with 'time period', however, rates significant as a trend (p=0.0616, Fig. 4-21), suggesting that its import on the variation, albeit marginal, is subject to minor changes. Table 4-35 presents the variant distribution over five levels of string frequency in the early and late period – the differences within each period are not great, but there are subtle changes in these.

string frequency	< 0.2	0.2 - 0.5	0.5 - 1	1 - 5	> 5
want to - wanna	1200 - 37	490 - 15	603 - 14	1907 - 34	2201 - 54
<b>% wanna</b> (tot.2.3%)	3%	3%	2.3%	1.8%	2.4%

#### <u> 1910 - 1969</u>

1970 - 2005

string frequency	< 0.2	0.2 - 0.5	0.5 - 1	1 - 5	> 5
want to - wanna	973 - 147	551 - 104	330 - 43	1324 - 250	1915 - 387
<b>% wanna</b> (tot. 15.5%)	13.1%	15.9%	11.5%	15.9%	16.8%
p = 0.1519					

Table 4-35: *want to* versus *wanna* by string frequency in the early and late period of COHA Drama&Movie

The distributions in both time periods exhibit fluctuations, and neither of them is statistically significant, yet they differ in their overall directionality. In 1910-1969, the contracted form tends to occur rather with low-frequency collocates (0-0.5%); after 1970, however, it has moved over to the high-frequency ones (1-5 and >5%). Again, this trend occurs on a small scale, but it is the same as for *gonna* (4.4.2.), which was suggested to indicate a social despecialization of the contraction. If this is correct, then *wanna*, too, has lost some of its social flavor over the course of the century. This is in line with the findings concerning the factor 'source type' discussed below.

#### Sentence length

The effect of 'sentence length' on the variation of *want to* versus *wanna* - short sentences favor the contraction, long sentences disfavor it - is statistically significant taken on its own (see Table 4-9), but is overridden by other factors in the multivariate model (Figure 4-12). The significant interaction with time in the model in Figure 4-21 suggests that this effect is subject to change. The mean sentence lengths for each variant in each time period bear witness to this change, as Table 4-36 shows.

mean sentence length	1910-1969	1970-2005	difference
want to	9.58 words	9.77 words	+ 0.19
wanna	7.94 words	9.27 words	+ 1.33
(total)	(9.54 words)	(9.69 words)	+ 0.15

Table 4-36: want to versus wanna by sentence length in the early and lateperiod of COHA Drama&Movie

While the mean length of sentences containing *want to* remains stable across the two time periods, the length of sentences with *wanna* increases

considerably. The difference between the two variants observed in the early period is still present in the late period, but has diminished considerably.

This parallels the trend found for *going to/gonna*, and matches the expectation of ongoing emancipation. As sentence length is a measure of linguistic complexity, *wanna* (like *gonna*) becomes compatible with more complex linguistic environments over time. Applying the Complexity Principle (more explicit forms are preferred in more complex environments, cf. Rohdenburg 1996), this means that *wanna* gains in explicitness – it loses a reduction feature and comes to be used more like an independent item.

#### Source type

Whether a token occurs in a stage play or movie script is a highly significant predictor for the use of *want to* or *wanna* overall (Figure 4-12) – like the other contractions, *wanna* is more frequent in movie scripts than in stage plays. As the factor's interaction with 'time period' is also highly significant (Figure 4-21), this effect is evidently subject to change. Table 4-37 displays the variant distributions for the source types 'Drama' and 'Movie' in the two time periods.

		Drama	Movie	
	want to - wanna	4657 - 78	1744 - 76	
1910 - 1969	% wanna (tot. 2.3%)	1.6%	4.2%	p < 0.0001
	want to - wanna	3209 - 557	1884 - 374	
1970 - 2005	% wanna (tot. 15.5%)	14.8%	16.6%	p = 0.0655

Table 4-37: want to versus wanna by source type in the early and late period of<br/>COHA Drama&Movie

While movie scripts favor the contraction in both time periods, the difference between 'Movie' and 'Drama' clearly is greater in 1910-1969 than after 1970, which is reflected in the significance values. The same trend was observed for *gonna* and *gotta*, though it is perhaps most striking with *wanna*. If 'Drama' and 'Movie' are taken to represent different registers, this suggests a leveling of registers with respect to *want to* and *wanna* (resonating with the interpretation of the change in string frequencies above). Still, the conclusion that *wanna* has become more acceptable across registers than *gonna* or *gotta* is not warranted given the low share of the variation that *wanna* holds even in the later time period. Rather, it seems that the more progressive register ('Movie') has failed to adopt *wanna* as much as one might have expected. This may in part explain *wanna*'s low relative frequency compared to *gotta* and *gonna* (see Table 4-1 and its discussion) and its slower rise.

The emancipation process of *wanna*, then, becomes less tied to social differences, because it is slower. Recall that also in the spoken data discussed in 3.3.3., social factors do not play into the variation of *want to* and *wanna*, while they do have an influence on the reduced realization of *want to*.

## Type of modality

As shown previously (Table 4-13), *want to/wanna* is almost exclusively used to express 'volition', and rarely to give advice ('deontic') in the samples taken from the COHA Drama&Movie data. Due to the paucity of deontic uses, it is impossible to positively establish the variation's development with respect to the types of modality. Table 4-38 presents the respective data distributions in the samples.<sup>94</sup>

		want to	%	wanna	%	
1010 1060	volition	439	97.6%	149	96.8%	~ 0.504
1910 - 1969	deontic	11	2.4%	5	3.2%	p=0.594
1070 2005	volition	285	95%	289	96.3%	
1970 - 2005	deontic	15	5%	11	3.7%	p=0.424

Table 4-38: want to versus wanna by type of modality in the early and lateperiod of COHA Drama&Movie

These results confirm that the deontic use of *want to/wanna* only just begins to gain currency in the twentieth century (as suggested in Collins 2009: 152, and see 3.3.3.3.). Its share of both variants increases over time, though on a low level. Recall that in 3.3.3. this increase was associated with the contracted form – this cannot be observed here, but given the low token numbers it cannot be refuted either. As far as can be observed, 'type of modality' has no significant effect on variant choice in either of the time periods.

## Summary of Changes in the Determinants of want to versus wanna

*Wanna* is the least frequent of the three contractions, and the one with the smallest increase in frequency – there is also relatively little change in the determinants of its variation with *want to*. Its development nevertheless shows signs of the contraction's increasing independence from its source form. In particular, the increasing sentence length with *wanna* indicates that it is perceived as an increasingly explicit form rather than a reduction. Moreover,

<sup>&</sup>lt;sup>94</sup> Note that the token numbers for *wanna* in the early period are lower because there are fewer than 75 instances per decade (the amount usually sampled for each variant) in the data up until the 1960s.

the narrowing gap between 'Drama' and 'Movie' sources shows that *wanna* becomes less constrained by register. The other effects on the variation, however, largely remain stable, showing no progress in *wanna*'s status. Figure 4-22 provides an overview. Considering the relevant factors and their developments, we can conclude that *wanna* is on the same track towards becoming an independent item as *gonna*, however is not as far advanced.



Figure 4-22: Overview of the changing variation of want to and wanna

## 4.4.4. Conclusion of Changes in Variation

The multivariate analyses in this chapter show that the contractions' frequency boost in the 1960s comes with some changes (though not major turnovers) in the setup of the variations. In the previous chapter it was suggested that the contracted forms' emancipation shows on several parameters, namely an increase in relative frequency, the retreat of speech-related reduction features, the loss of social constraints, and possibly a functional divergence. The diachronic emancipation processes of *gonna*, *gotta* and *wanna* investigated in the present chapter can now also be described along these lines.

The rise in relative frequency is starkly evident in all three contractions, and it is sudden and simultaneous, suggesting that the developments are interdependent. *Gotta* makes the greatest leap in relative frequency, and *wanna* the smallest.

The reduction features here are not directly related to the flow of speech, since the 'speech' comes in written form, however they are taken into account in terms of explicitness ('sentence length') and collocational preferences ('preceding item', 'string frequency'). The impact of these factors is clearly receding in the variation between *going to* and *gonna*, and partly receding in *want to* versus *wanna*. Thus, on this measure, both *gonna* and *wanna* are moving towards independence, and *gonna* is, again, further advanced on this path. In contrast, *gotta* takes the opposite route with respect to sentence length, assuming its place as a less explicit variant of *got to*.

As social features are not directly available in the COHA Drama&Movie data, social constraints and their decline only show in approximations to register ('source type') and formality ('Latin collocate'). All three contractions have been shown to gain more general currency with respect to registers, but remain restricted in terms of formality levels.

The point for "functional divergence" could be made only very tentatively in chapter 3. The present chapter, with more data and a considerable time depth, allows for more reliable conclusions. However, major semantic shifts are not found. A functional divergence from the source form is incipient only with *gonna* (favored for 'prediction', declining in 'deontic' uses); there is also tentative evidence that  $\emptyset$  *gotta*, but not HAVE *gotta*, may semantically diverge from (HAVE) *got to* (coming to be preferred in specific deontic uses).

In addition to these four measures, a striking difference between contractions and full forms is observed with respect to syntactic position: the contracted forms are generally favored at phrase boundaries. In the data at hand, this structural divergence is present from the early period and remains a stable factor; with *gonna*, however, it intensifies slightly over time. A structural divergence can also be seen in the favoring of *gotta* after adverbs, and in particular in the preference for the contraction in the emerging construction DO X *gotta*.

# CHAPTER 5 An Experimental Approach to the Perception of *gonna* and *gotta*

The monkeys stand for honesty Giraffes are insincere And the elephants are kindly, but they're dumb Orangutans are skeptical Of changes in their cages And the zookeeper is very fond of rum

(Paul Simon, "At the Zoo")

Gilquin & Gries (2009) urge corpus linguists to "look more into the possibilities of complementing their corpus studies with experimental data" (16) in order to validate and refine results from corpus studies. While this is certainly well-founded, for the present investigation there is yet another motivation, namely to study the phenomenon from the speaker's and the listener's side, i.e. in both production and perception. As Beckner et al. (2009) point out: "language may change in the tug-of-war of conflicting interests between speakers and listeners: Speakers prefer production economy, which encourages brevity and phonological reduction, whereas listeners want perceptual salience, explicitness, and clarity, which require elaboration" (16).

In chapter 2 it was proposed that "the new form is emancipated when it is used and perceived as an independent item, without conceptual recourse to its source form" (chapter 2.4). Yet the corpus data analyzed thus far can only yield insights into the usage, not the perception, of the respective forms. In a corpus, when a speaker is found to say "I gotta write this chapter now", there is no way of inferring whether the listener takes "gotta" as an instance of *gotta* (i.e. as an independent item) or rather a reduced pronunciation of HAVE *got to*.

The study detailed in this chapter is designed to address exactly this question of perception. For practical reasons, it only covers the cases of *gonna* and *gotta*, as well as *tryna* and *needa* for the purpose of comparison. The experiment was conducted at the University of Victoria, British Columbia, on the Canadian west coast, and most of the fifty-nine participants were Canadians. The location, too, was chosen for practical reasons, as I had the

opportunity to spend three months there as a visiting researcher.<sup>95</sup> The experiment design is based on the findings of the corpus study of spoken (U.S.) American English presented in chapter 3. Although there are dialectal differences between (and within) Canadian and U.S. English, the major divide in varieties of English is between British and American. In this respect Canada and the U.S. are on the same side of the ocean both linguistically and geographically, and are therefore categorized as North American English (cf. Trudgill & Hannah 2002). This holds true also for the use of semi-modals and their contracted variants (see section 2.1.2.), although in this arena Canadian English appears to be the more 'extreme' version of American English (cf. Tagliamonte & D'Arcy 2007).

## 5.1. Experiment Design

This experiment required participants to listen to a set of recorded sentences and repeat them. Their output was recorded. The design was created using the experimental software PsyScript developed at Lancaster University (Slavin 2002-2012). The input sentences were narrated by a young native speaker of North American English from Chicago under the supervision of the researcher.<sup>96</sup>

Approximately half of the sentences contained a semi-modal of the type BE *going to /gonna* or (HAVE) *got to/gotta*. These each came in four different forms: for BE *going to /gonna*, corresponding to the realization categories established in 3.3.1.1., these are /gooin to/ (henceforth "going to"), /gpində/ ("goinde"), /gpinə/ ("gonna"), and /ənə/ ("ena"); for (HAVE) *got to/gotta*, the full and contracted forms were included with and without the auxiliary, thus 've/'s *got to*, *got to*, 've/'s *gotta*, and *gotta*. For *need to* and *trying to*, only two levels of realization were applied, the full forms ("need to", "trying to") and the contracted forms ("needa", "tryna").

Three test conditions were stipulated for the target sentences, based on results from chapter 3: the subject, the type of modality and speech rate. For *going to/gonna*, the subject tested for was the first person singular (see example  $(152)^{97}$ ), as this was found to promote phonetic reduction (i.e. *I'm gonna ->* 

<sup>&</sup>lt;sup>95</sup> I owe special thanks to Dr Alex D'Arcy, who supervised my research at the University of Victoria and provided great support in everything I could (and did) ask for.

<sup>&</sup>lt;sup>96</sup> I am indebted to Danielle Grewe for lending her voice and love of fictional animal activities to this experiment.

<sup>&</sup>lt;sup>97</sup> The particular form (here: *gonna*) in this and the following examples is, of course, just one out of the four possibilities introduced above – a participant could thus encounter this sentence with this or with another target form.

"I'mma") in the corpus study; HAVE *got to/gotta* was tested for third person singular subjects (*he/she/it*), following the finding that these favor HAVE *got to* (153). As for the type of modality, *going to/gonna* was conditioned for deontic modality (154) in order to verify its favoring of *going to* can be verified, which was a tentative conclusion in the corpus study based on very few tokens (see 3.3.1.); for HAVE *got to/gotta*, epistemic modality was observed (155), as it is the 'youngest' use of these forms and that considered most grammaticalized (Heine, Claudi and Hünemeyer 1991). Finally, some input sentences were manipulated to a higher speech rate in order to test whether rapid speech also affects perception, as it promotes phonetic reduction in production; the regular speech rate of the recorded sentences was 5 to 6 syllables per second, the increased rate 7 to 8. For speech rate manipulation, the effect tool "Change Tempo" of the audio software Audacity (Mazzoni et al. 2006) was used. Not all parts of a sentence were accelerated (as this would sound unnatural); at the target items, the tempo was consistently increased by 40%.

These conditions were then compared to sentences containing a target form, but to which none of the three conditions apply (called here the null condition, see examples (156)-(157).

Additionally, a few sentences including a question with *got to/gotta* were included (examples (158)-(159)); these uses maybe seen as either incorrect or innovative, depending on one's perspective. The intention was to test their acceptability, given they are rarely but consistently found in corpora (see chapter 4.4.2.).

- (152) After dinner, <u>I'm gonna</u> play backgammon with the camel.
- (153) Our African giraffe has got to see a dentist.
- (154) Listen, you're going to leave that giraffe alone now.
- (155) Surely, they've gotta have elephant food at the pet shop.
- (156) Careful now, we've got to watch out for monkeys around here.
- (157) The penguins are going to form a blues quartet.
- (158) When have I got to feed the crocodiles again?
- (159) Now, what do they got to give the monkeys coffee for?

In total, the possible condition/form combinations yielded sixteen input types for each variation (4 forms by 4 conditions). As it is necessary to expose participants to each input type multiple times (to avoid potential idiosyncratic effects of a given sentence), two different sets were devised. These each contained twenty input types for eighty target sentences, so that each input type occurred four times during a session – with the exception of the question condition for HAVE *got to/gotta*, as it was expected that these items would be highly salient, thus participants were only presented with two items per variant. The individual sentences occurring in each set could still vary. One session consisted of 150 sentences, sampled from a pool of 360 recordings; Table 5-1 shows how the input types were distributed in each set: either *going to/gonna* was tested for the subject and modality conditions and HAVE *got to/gotta* for the speech rate condition, or vice versa. The sentences were presented to the participant in random order.

	dummy		"gotta"	"got to"	"have gotta"	"have got to"	"ena"	"gonna"	"goinde"	"going to"		
	sentenc		4	4	4	4	4	4	4	4	[null]	
	es (incl. <i>tr</i>						 4	4	4	4	subna =	set
	ving to/ne						 4	4	4	4	deontic mod.	#1
	ed to)		4	4	4	4					high speech rate	
ł			N	N	N	N					ques- tion	
150	62	88	10	10	10	10	12	12	12	12	(sum)	
			4	4	4	4	4	4	4	4	[Ilnu]	
			4	4	4	4					SUBJ = 3rd p. sing.	set
			4	4	4	4					episte mic mod.	#2
							 4	4	4	4	high speech rate	
			N	N	N	N					ques- tion	
150	62	88	14	14	14	14	œ	ω	ω	ω	(sum)	

Table 5-1: Distribution of input types

The task was presented to the participants by the prompt: "Listen to the sentence and repeat it clearly and literally. (You may think of someone asking "What did she just say?", and you answer "She said: '…' ".)" It was also pointed out that it was important to repeat the actual words, not the way the recorded speaker speaks. This is similar to a shadowing task in that it elicits participants' repetitions of a stimulus, but with a decisive difference: whereas immediate shadowing evokes phonemic and partly phonetic imitation (cf. Mitterer & Ernestus 2008), the present listen-and-repeat task avoids this by the lack of time pressure and the above instructions; moreover, the stimulus here consists of entire sentences rather than single words or syllables. The task here also involves a lexical decision, in a broader sense, as the participant must decide on the words (lexical items) they heard in the input, however this decision is not explicit and not a yes/no choice.

Participants had the option to replay the recorded sentence once, which was recorded by the system. The loose themes of the sentences (zoo animals, backgammon, etc.) were chosen to keep participants interested throughout the session (for the simple reason that these are more entertaining than 'regular' sentences), and ideally to draw attention away from the recurring target constructions<sup>98</sup>. The stimuli were constructed so that the target form occurred in the middle of the sentence, thus avoiding primacy/recency effects (i.e. that items at the beginning and end of a stimulus are more easily remembered, cf. Ebbinghaus 1885, Jersild 1929, i.a.). Problems arising from the recorded speaker's accent (Chicagoan) being slightly different from that of most participants (Canadian) were not expected, since it has been shown that hearers quickly recognize and accept idiolectal phonetic variation, and do not transfer it into production (Kraljic et al. 2008). The potential interference of working memory in the form of fatigue or learning during the trial were mitigated by allowing a short break after eighty sentences.

The data elicited by this setting is the variant of *going to/gonna* or (HAVE) *got to/gotta* participants used in their repetition of a given input variant in a given condition. The design is thus an indirect approach to perception; naturally the primary purpose of speech perception is to retrieve meaning, not form. However, the meanings of the full form and the contraction are congruous, so the task remains to match that meaning with the 'right' form in order to then repeat it in production. In this way, the task of repeating foregrounds attention to form. The prompt directing participants to repeat "clearly and literally" was designed to minimize phonetic reduction in participants' responses. In principle, assuming a categorical distinction between full and contracted forms, a *gonna* or *gotta* in a participant's response to the same form would indicate that this

<sup>&</sup>lt;sup>98</sup> Obviously, I have no way of measuring how successful the design was in these terms – from the participants' informal feedback I can infer that, at the very least, the 'entertainment' aspect was borne out.

was processed as a word in its own right; a contraction in the input changed into the full form on production would imply the opposite. In practice, however, phonological and lexical variation are much more difficult to disentangle. While it is clear from the results that *gonna* and *gotta* are easily elicited (see below), whether they are stored pronunciation variants or indeed separate items is not so transparent. Recall tha in 2.5.1. it is proposed that hearing the form "gotta" necessarily also activates *got to* in the listeners mind (and vice versa), but *gotta* is selected as the 'right' item, i.e. receives higher activation (if it is stored as an independent item). On this backdrop, the aim of this experiment is to reveal patterns as to which conditions lead to increased activation of the full or contracted form.

Fifty-nine participants successfully took part in the experiment,<sup>99</sup> all of them native speakers of North American English. As the experiment was carried out in a university setting, a large proportion of the participants were university students, though some effort was made to recruit a sizable number of older participants as well. The average age was 31.1 years, and there were 41 female and 18 male participants.

In total, the output variant (the form used in a participant's response) matched the input variant in 66% of repetitions (3410 out of 5191),<sup>100</sup> which confirms that the participants responded to the stimuli in a non-arbitrary way with respect to the target forms. Comprehension problems occured in 5% of the data, which is within the expected range of error rates.<sup>101</sup> The data thus allow for cautious but meaningful statements about the perception of these forms.

# 5.2. Results

The results obtained from the experiment consist of the quantities of output variants, i.e. the respective variant a participant used in their repetition of a sentence. These output variants obviously have to be discriminated according to the input forms, so as to evaluate how the different input forms were interpreted.

<sup>&</sup>lt;sup>99</sup> There were originally sixty-five participants, but six data sets could not be used due to technical errors.

<sup>&</sup>lt;sup>100</sup> If "goinde" is taken to represent *going to*, and "ena" to represent *gonna*; auxiliary HAVE with *got to/gotta* is ignored.

<sup>&</sup>lt;sup>101</sup> For instance, Marslen-Wilson (1973) found error rates between 0.5% and 6.6% in a sentence shadowing experiment.

In the following, results for *going to/gonna* are presented, then those for (HAVE) *got to/gotta*. Finally, it is shown that *tryna* and *needa*, in comparison, are not accepted as independent items. The figures are statistically assessed using mixed-effects regression models (as suggested in Baayen 2008: 241ff and Bates 2005), which are expedient in factoring out individual participants' idiosyncratic effects.

The age and gender of a participant are taken into account, as well as whether they needed to replay the stimulus, as this could influence their variant choice. They might, for instance, be more accurate in replicating the input form (having heard it twice), or there may be a preferred variant for problematic cases (which are also indicated by the need to replay).

### 5.2.1. Results for going to/gonna

Table 5-2 and Figure 5-1 present an overview of responses to a form of *going to/gonna* in the input, irrespective of the condition. As mentioned above, the output is usually a clear "going to" or "gonna", elicited by the prompt to repeat "clearly and literally". Phonetic deviations of the forms "goinde" or "ena" are very rare in the output (but we can see where they matter below). Therefore, the output is categorized into the variants *going to* and *gonna*; the "-" stands for responses in which either no or a different modal was used (usually indicating a problem of understanding).

output	going to	goinde	gonna	ena	TOTAL
-	5	16	8	33	62
	0.8%	2.7%	1.4%	5.6%	2.6%
going to	304	227	143	114	788
	51.4%	38.3%	24.2%	19.3%	33.3%
gonna	283	349	441	444	1517
	47.8%	59.0%	74.5%	75.1%	64.1%
TOTAL	592	592	592	591	2367
	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5-2: Overview of experimental results for going to/gonna



Figure 5-1: Output going to/gonna by input form

This overview already highlights a number of observations: firstly, we see that all in all, *gonna* is clearly the preferred variant (its total share is 64% compared to 33% for *going to*). Secondly, the share of *gonna* increases with more reduced input forms (from left to right in Figure 5-1), but this increase is not linear. The input forms "gonna" and "ena" are on the same level (75% and 77% *gonna*), and "going to" and "goinde" group together at a lower output contraction rate. Thus, the dichotomy is indeed between *going to* and *gonna*, with slighter differences between the pronunciation variants of each. Thirdly, there appears to be a high degree of interchangeability. Even a "going to" in the input is often repeated as *gonna*; likewise, though to a lesser extent, the highly reduced "ena" is sometimes interpreted as *going to*. In addition, there was not a single participant who produced one form invariantly throughout the session. The interchangeability of the two variants is, however, strongly constrained by the input form, as the distributions show.

Finally, if we take the low numbers for other outputs ("-") at face value, interpreting them as comprehension problems, full "going to" emerges as the most hearer-friendly realization, followed by full "gonna". The phonetically reduced forms, on the other hand, cause greater problems, most notably the minimal "ena". Overall, these results corroborate the distinction between variation and reduction suggested by the results from the SBC corpus data in chapter 3.

We now zoom in on the responses to the individual input forms, integrating the three experimental conditions as well as the participants' age and gender, and whether the replay function was made use of. Both here and in the following sections, the statistical models used are generalized linear mixed models,<sup>102</sup> with the output variant the dependent variable. Independent variables are, as fixed effects, 'condition', 'age', 'sex', and 'replay'. Random effects are also incorporated for the participant, the input number for a participant, and the input sentence. Thus, idiosyncratic effects of the individual person, the order of the stimuli, and the specific input sentence are controlled for.

This is, in a sense, a maximal model, including all the potentially relevant information. As a number of models are presented, not all of the information is needed in ever model. Yet, where differences occur, this maximal model type has proven significantly better than the less complete alternatives (as tested by the Akaike Information Criterion<sup>103</sup> (Sakamoto et al. 1986)).

#### 5.2.1.1. Input Variant "going to"

In total, the fifty-nine participants encountered 592 instances of the fully pronounced form "going to", to which they responded with *going to* 304 or 51.4% of the times (see Table 5-2 above). Table 5-3 provides a complete overview of the distribution of the variants in the responses with respect to the experimental conditions and the additional factors.

	go	ing to		gonna		-	total
null condition	119	(50.4%)	115	(48.7%)	2	(0.8%)	236
subj = l	65	(54.2%)	55	(45.8%)	0		120
deont. mod.	64	(53.3%)	53	(44.2%)	3	(2.5%)	120
high speech r.	56	(48.3%)	60	(51.7%)	0		116
TOTAL	304	(51.4%)	283	(47.8%)	5	(0.8%)	592
age <30	184	(46.9%)	206	(52.3%)	2	(0.5%)	392
age >30	120	(60%)	77	(38.5%)	3	(1.5%)	200
male	85	(48.3%)	90	(51.1%)	1	(0.6%)	176
female	219	(52.6%)	193	(46.4%)	4	(1%)	416
replay	51	(54.8%)	41	(44.1%)	1	(1.1%)	93
no replay	253	(50.7%)	242	(48.5%)	4	(0.8%)	499

input = "going to"

Table 5-3: Overview of responses to input "going to"

<sup>&</sup>lt;sup>102</sup> as produced by the Imer function in R (packages languageR and Ime4), using the binomial distribution.

<sup>&</sup>lt;sup>103</sup> The AIC is integrated in the Imer function as well as in model comparison through the anova function.

The 'null condition' serves as a basis for comparison with the other conditions. Here, in 48.7% of responses the input "going to" was changed to *gonna*. The other conditions hardly diverge from this figure – it is slightly lower with subject "I" and in deontic modality, and slightly increases when the input speech rate is accelerated.

Among the other factors, 'age' makes a considerable difference: participants over 30 years respond to "going to" with *gonna* at a rate of only 38.5%, compared to 52.3% with the younger group. There is no remarkable difference between men and women, and use of the replay option increases *going to* responses only marginally.

In Figure 5-2, these raw data are fed into a statistical model, as described above. Thus, the interferences of idiosyncratic participants or sentences are factored out. The rare data points with output variant "-" are excluded from the model, so that only the responses *going to* and *gonna* are compared. As the model overview shows, there are 59 participants and 48 different input sentences in the data. The reference level for 'condition' is, of course, the null condition, which then serves as the point of comparison for the conditions 'subject', 'modality' and 'speech rate' (see Figure 5-2). 'Age' is a numeric vector, and for the binary factors 'sex' and 'replay' the choice of the reference level is not relevant.

			input	= "going to"
Generalized Line	ear Mixed	Model		
dependent varial	ole: outpu	t variant (	going to	gonna)
Number of observ	vations: 5	87		
groups: particip	pantID, 59	; sentenceI	D, 48	
Fixed Effects				
	Estimate	<u>Std. Error</u>	<u>z value</u>	Pr(> z )
(Intercept)	0.77288	0.61374	1.259	0.2079
condition				
modality	-0.43634	0.40282	-1.083	0.2787
condition				
speech rate	0.25687	0.35631	0.721	0.4710
condition				
subject	-0.35767	0.39607	-0.903	0.3665
age	-0.03468	0.01794	-1.933	0.0532 .
sex male	0.70116	0.56016	1.252	0.2107
replay yes	-0.11418	0.31739	-0.360	0.7190

Figure 5-2: Mixed-effects model of responses to input "going to"

This model lists only one significant factor effect, that of 'age' (which is not entirely surprising in light of the distributions in Table 5-3). It is only significant as a trend, however, missing the .05 level by a hair's breadth. Older participants are less likely to change the input "going to" into *gonna*, across individuals. Interestingly, though the model does not capture this<sup>104</sup>, this age effect fails to occur in the speech rate condition. Table 5-4 shows this by presenting the responses to each condition divided into older (>30 years) and younger (< 30 years) participants.

	>30	ys	<30 ys			
	going to - gonna	% gonna	going to - gonna	% gonna		
null condition	44 - 35	44%	75 - 80	52%		
subj = l	29 - 11	28%	36 - 44	55%		
deont. mod.	28 - 10	26%	36 - 43	54%		
high speech r.	19 - 21	53%	37 - 39	51%		

Table 5-4: Experimental conditions by age group with input "going to"

In the group of older subjects in Table 5-4, the share of *gonna* responses is greatly increased with accelerated inputs when compared to the other conditions. In contrast, in the younger cohort the responses to high speech rate stimuli do not differ from those in other conditions. It therefore appears that 'older' language users tend to interpret a rapidly spoken "going to" as *gonna* (compared to a normal speech rate), while 'younger' ones generally favor *gonna* but do not discriminate by speech rate.

From an apparent time point of view, both the general age effect and the age-constrained speech rate effect correspond perfectly with the finding that *gonna* is on the rise and losing its 'reduction features', most prominently the influence of speech rate. This role of speech rate, in particular, is refined in the following sections.

#### 5.2.1.2. Input Variant "goinde"

he responses to stimuli containing "goinde", a phonetic reduction of *going to*, are considered following the approach outlined in the previous section. In this case, the input is shown to be repeated as *gonna* more frequently than full "going to", at 59%, and also appears to be more difficult to process, as

<sup>&</sup>lt;sup>104</sup> Although technically possible, interactions were not integrated because the model does not seem to handle them in a meaningful way.

highlighted by the 2.7% "-" responses (see Table 5-2 above). Table 5-5 lists the detailed figures for the input form "goinde".<sup>105</sup>

	go	ing to	ge	onna		-	total (100%)
null condition	99	(41.9%)	129	(54.7%)	8	(3.4%)	236
subj = l	57	(47.5%)	63	(52.5%)	0		120
deont. mod.	43	(35.8%)	72	(60%)	5	(4.2%)	120
high speech r.	28	(24.1%)	85	(73.3%)	3	(2.6%)	116
TOTAL	227	(38.3%)	349	(59%)	16	(2.7%)	592
age <30	139	(35.5%)	244	(62.2%)	9	(2.3%)	392
age >30	88	(44%)	105	(52.5%)	7	(3.5%)	200
male	58	(33%)	114	(64.8%)	4	(2.3%)	176
female	169	(40.6%)	235	(56.5%)	12	(2.9%)	416
replay	35	(42.2%)	45	(54.2%)	3	(3.6%)	83
no replay	192	(37.7%)	304	(59.7%)	13	(2.6%)	509

#### input = "goinde"

Table 5-5: Overview of responses to input "goinde"

Examination of the data in Table 5-5 suggests that "goinde" is rather perceived as *gonna* when it occurs in rapid speech (at 73.3% compared to 54.7% in the null condition), and also, surprisingly, in deontic modality (60%). Furthermore, as with the full "going to" input, younger participants return more *gonna* than older. In this case, the difference extends to 'sex', as men tend to take "goinde" as *gonna* more frequently than women (64.8% and 56.5%, respectively). Finally, although this input form was misunderstood more often than the full pronunciation ("going to"), participants did not re-play sentences with "goinde" more often (83 times, compared to 93 with "going to"); when they did replay, it did not notably affect their perception of the form, as the similar output frequencies for 'replay' and 'no replay' show.

The general linear mixed model run over these data reveals several trends that are visible in the raw data (Table 5-5). This model is particularly apt for assessing which of these trends are significant effects. As above, the "-" responses are excluded from the model. The factor listing is presented in Figure 5-3.

<sup>&</sup>lt;sup>105</sup> In a few cases the input form was mirrored in the output, but this was rare – there are 13 instances of output pronunciations corresponding to /gpində/. These were included in the *going to* category.

			inp	ut = "goi	.nde″			
<u>Generalized Linear Mixed Model</u>								
dependent varia	ble: outpu	t variant (	going to	gonna)				
Number of obser	vations: 5	76						
groups: partici	pantID, 59	; sentence]	D, 48					
5 - 1 - 1 1	,	,	, -					
Fixed Effects								
	Estimate	Std. Error	z value	Pr(> z )				
(Intercept)	1.01434	0.62604	1.620	0.10518				
condition								
modality	0.50395	0.40486	1.245	0.21323				
condition								
speech rate	1.28887	0.39640	3.251	0.00115	* *			
condition								
subject	-0.19136	0.39387	-0.486	0.62708				
age	-0.02544	0.01816	-1.401	0.16111				
sex male	0.59802	0.57294	1.044	0.29659				
replay yes	-0.19395	0.36625	-0.530	0.59642				

Figure 5-3: Mixed-effects model of responses to input "goinde"

In this statistical model, only the speech rate condition turns out to have a significant effect. Both 'age' and 'sex', despite their apparent trends in Table 5-5, fail to reach significance level (note also that their Z-values clearly fall behind that of 'speech rate'). We can affirm, then, that rapid speech leads listeners to interpret the pronunciation "goinde" as an instance of *gonna*. An example is provided in (157).

(160) Input (increased speech rate): Next week, we're goinde take our tiger on a canoeing trip.Output: Next week, we're gonna take our tiger on a canoeing trip.

The same tendency has been found for the input form "going to" above, however only among the "older" subjects and not to an overall significant level. Considering this, it is important to note that increased speech rate not only has a greater impact on the interpretation of "goinde" in general, but also exerts its influence across age groups. Table 5-6 (presenting the conditions by age group) testifies to this, and also shows that the effect remains somewhat stronger in the 'older' age group.

	>30	) ys	<30 ys		
	going to - gonna	% gonna	going to - gonna	% gonna	
null condition	38 - 40	51%	61 - 89	59%	
subj = l	25 - 15	38%	32 - 48	60%	
deont. mod.	17 - 19	53%	26 - 53	67%	
high speech r.	8 - 31	79%	20 - 54	73%	

input = "goinde"

Table 5-6: Experimental conditions by age group with input "goinde"

As a pronunciation variant, "goinde" is the form between full "going to" and contracted "gonna", and rapid speech is known to promote phonetic reduction. Taking these together, a rapidly spoken "goinde" would appear a fairly natural reduced version of *going to*. However, this is not how it is perceived. Rather, listeners link it to the more reduced, but also more common variant *gonna*. Thus, rapid speech not only affects production, but also perception, reinforcing the shorter variant.

#### 5.2.1.3. Input Variant "gonna"

The input form with the realization "gonna" is the most common form of *going to/gonna* in spoken American English (see chapter 3). Unsurprisingly, the share of *gonna* in participants' responses is quite large with this input, at 74.5% overall. When they did respond with *going to*, they thus changed the easier, more common variant into that which is less common, but prescriptively more acceptable.

Table 5-7 lists the output data for input "gonna" by experimental condition, age, sex, and use of replay.

	output variant							
	g	oing to		gonna		-	total (100%)	
null condition	51	(21.6%)	182	(77.1%)	3	(1.3%)	236	
subj = l	36	(30%)	83	(69.2%)	1	(0.8%)	120	
deont. mod.	31	(25.8%)	88	(73.3%)	1	(0.8%)	120	
high speech r.	25	(21.6%)	88	(75.9%)	3	(2.6%)	116	
TOTAL	143	(24.2%)	441	(74.5%)	8	(1.4%)	592	
age <30	87	(22.2%)	303	(77.3%)	2	(0.5%)	392	
age >30	56	(28%)	138	(69%)	6	(3%)	200	

input = "gonna"

	go	oing to	9	gonna		-	total (100%)
male	30	(17%)	141	(80.1%)	5	(2.8%)	176
female	113	(27.2%)	300	(72.1%)	3	(0.7%)	416
replay	16	(29.1%)	37	(67.3%)	2	(3.6%)	55
no replay	127	(23.6%)	404	(75.2%)	6	(1.1%)	537

input = "gonna"

Table 5-7: Overview of responses to input "gonna"

Of the three experimental conditions, it is 'subject' that is most noticeable: the string "I'm gonna" is changed to *I'm going to* more often than expected (at 30% compared to 21.6% in the null condition). In comparison to the fuller input forms "going to" and "goinde", the lack of influence of 'speech rate' is also noteworthy. The responses to "gonna" are the same in rapid speech as in normal pace.

The age cline observed with the other input forms is visible here as well, with 'older' participants returning more *going to* (28%) than those in the 'younger' cohort (22.2%). Similarly, women switch to the full form more frequently than men (at 27.2% and 17%, respectively). Finally, the 'replay' option was employed far more sparingly than with the previous input forms. This is expected in view of the fact that "gonna" is the most common of the realizations in the spoken language, so this form induces less surprise and coresponingly less processing difficulty. Surprisingly, however, use of 'replay' in this case decreases the accuracy of the response. The input "gonna" is changed to *going to* at a higher rate (29.1%) when replay is used than when it is not (23.6%).

Figure 5-4 presents the statistical model of the data for input "gonna". As in the previous models, "-" outputs are excluded and the individual participants, input sentences, and order of stimuli for a participant are included as random factors.

			<u>in</u>	<u>put = "go</u>	onna″
Generalized Line	ear Mixed	<u>Model</u>			
dependent varial	ble: outpu	t variant (	going to	gonna)	)
Number of observ	vations: 5	84			
groups: partici	pantID, 59	; sentenceI	D, 48		
Fixed Effects					
	Estimate	Std. Error	z value	Pr(> z )	_
(Intercept)	3.25228	0.83751	3.883	0.000103	***
condition					
modality	-0.53234	0.37056	-1.437	0.150838	
condition					
speech rate	0.19867	0.41766	0.476	0.634306	
condition					
subject	-0.91041	0.36401	-2.501	0.012381	*
age	-0.03958	0.02453	-1.613	0.106647	
sex male	0.95806	0.79057	1.212	0.225568	
replay yes	0.03698	0.43334	0.085	0.932000	

Figure 5-4: Mixed-effects model of responses to input "gonna"

The effect of the 'subject' condition is the only one that reaches significance in the model. 'Age' is the next strongest factor, narrowly missing the 0.1 level. Notably, in addition to the overall trend for younger participants to produce more *gonna*, the 'subject' effect is also shown to be constrained by the 'age' factor. Table 5-8 displays the output frequencies of *going to* and *gonna* for each experimental condition over two age groups. In both age groups, the share of output *gonna* is lowest in the subject condition, but the difference is much more pronounced in the older group.

input = "gonna"								
	>30	ys	<30 ys					
	going to - gonna	% gonna	going to - gonna	% gonna				
null condition	18 - 59	77%	33 - 123	79%				
subj = l	15 - 24	62%	21 - 59	74%				
deont. mod.	12 - 27	69%	19 - 60	76%				
high speech r.	11 - 27	71%	14 - 61	81%				

Table 5-8: Experimental conditions by age group with input "gonna"

As has been noted above, the string *I'm going to/gonna* is highly frequent in spoken English and fosters phonetic reduction (see chapter 3.3.1.2.). It is possible, then, that listeners tend to expect reduction in this string and thus process the realization "I'm gonna" as a phonetically reduced *I'm going to*.

Older listeners are expected to do this more than younger, because they are less accustomed to *gonna* as a variant and thus revert to the full form *going to* more easily. At this point, this is a rather tentative explanation, however the following data for the reduced input form "ena" provides some corroborating evidence.

## 5.2.1.4. Input Variant "ena"

The most reduced input form, "ena", elicits the highest rate of *gonna* responses (75.1%). It also appears to cause the most comprehension difficulties (5.6% "-" responses), as is expected of a phonetically reduced form, given that it places the burden of reconstructing the full representation on the listener. This input form is also sometimes mirrored as "ena" or "I'mna" in the output, despite the instruction to speak "clearly and literally" (in 55 cases, or 9.3%; these outputs are subsumed under *gonna* in Table 5-2 above). The frequencies of output variants are presented in detail in Table 5-9.

	go	ing to	gonna			-	total (100%)
null condition	46	(19.5%)	186	(78.8%)	4	(1.7%)	236
subj = l	31	(26.1%)	82	(68.9%)	6	(5%)	119
deont. mod.	20	(16.7%)	84	(70%)	16	(13.3%)	120
high speech r.	17	(14.7%)	92	(79.3%)	7	(6%)	116
TOTAL	114	(19.3%)	444	(75.1%)	33	(5.6%)	591
age <30	67	(17.1%)	310	(79.3%)	14	(3.6%)	391
age >30	47	(23.5%)	134	(67%)	19	(9.5%)	200
male	23	(13.1%)	141	(80.1%)	12	(6.8%)	176
female	91	(21.9%)	303	(73%)	21	(5.1%)	415
replay	20	(15.7%)	93	(73.2%)	14	(11%)	127
no replay	94	(20.3%)	351	(75.6%)	19	(4.1%)	464

input = "ena"

Table 5-9: Overview of responses to input "ena"

As with the input form "gonna", a first person subject (the string is realized as /aɪmnə/ in the input) elicits more *going to* responses (26.1% compared to 19.5% in the null condition).

Another striking result is the large number of diverging responses ("-") to "ena" in deontic modality (13.3%). It has already been noted that the full form *going to* may be preferred over *gonna* in deontic uses to add emphasis to the command (3.2.1.2.). The present finding points in the same direction, in that hearers have difficulty identifying a reduced *gonna* in a deontic use, because
the reduced realization lacks that emphasis.<sup>106</sup> In eight cases, deontic "ena" is returned as *gotta* (as in example (161)), indicating that the meaning is recognized, but the form considered inappropriate or unclear.

#### (161) Input: *But you're ena pay the elephant back, okay?!* Output: *But you gotta pay the elephant back, okay?*

A notable difference is again evident between the age groups and sexes, with younger and male participants showing higher rates of *gonna* responses (79.3% and 80.1%, respectively). Also, older speakers appear to have more difficulty understanding the reduced input form, indicated by their relatively high rate of "-" outputs (9.5%). This corresponds to the finding in chapter 3.3.1.4., where it was shown that older speakers produce a phonetically reduced realizations of *gonna* predominantly in rapid speech, while young speakers use at least /aimə/ as a pronunciation variant; it makes sense in this light that younger listeners are also better at identifying "ena" as *gonna*.

The finding that the reduced input form is more difficult to process is also evidenced by the high usage of the 'replay' option (127 times, compared to 55 to 93 with the other input forms). Moreover, re-playing the stimulus did not always help to understand the form – the share of "-" responses with 'replay' is disproportionately high (11%). Of the experimental conditions, 'replay' is used most with high speech rates (37 times), as expected. However, it is in deontic modality that "ena" remains misunderstood after 'replay' (7 times out of 27 replays, compared to 5 out of 37 with high speech rate; see Table 5-10). Although these are low numbers, it appears that the comprehension difficulty posed by rapid speech can be remedied by a second listening, whereas the difficulty of a subtle form-meaning mismatch persists.

replay – vec	out	put vari			
Teplay – yes	going to	gonna	-	total	% replay
null condition	5	36	1	42	17.8%
subj = l	6	14	1	21	17.6%
deont. mod.	3	17	7	27	22.5%
high speech r.	6	26	5	37	31.9%
TOTAL	20	93	14	127	21.5%

input = "ena"

Table 5-10: Responses to input "ena" with 'replay'

<sup>&</sup>lt;sup>106</sup> Note also that none of the realizations of *going to/gonna* in the input sentences have a stress accent, so this is purely an effect of length, not a side-effect of stress.

The mixed-effect model subsequently generated from the data for the input form "ena"; the model is parallel to the ones used for the other input forms, and does not include "-" outputs. Thus, the aspects discussed above are not captured by the model, however it assesses the other effects statistically. It is presented in Figure 5-5.

				input = "	'ena″
Generalized Line	ear Mixed	<u>Model</u>			
dependent varial	ole: outpu	t variant (	going to	o   gonna)	
Number of observ	vations: 5	58			
groups: particip	pantID, 59	; sentenceI	D, 48		
Fixed Effects					
	Estimate	Std. Error	z value	Pr(> z )	
(Intercept)	2.90550	0.75972	3.824	0.000131	***
condition					
modality	0.01775	0.40757	0.044	0.965266	
condition					
speech rate	0.48581	0.44775	1.085	0.277925	
condition					
subject	-0.69610	0.36778	-1.893	0.058396	•
age	-0.04783	0.02209	-2.165	0.030363	*
sex male	1.26637	0.73691	1.718	0.085708	•
replay yes	0.63109	0.37008	1.705	0.088142	•

Figure 5-5: Mixed-effects model of responses to input "gonna"

In this model, several factors reach significance, at least at the 0.1 level: the 'subject' condition, 'age', 'sex', and 'replay'.

We have already seen the 'subject' effect (more output *going to* with first person singular) with the input form "gonna" – there, it was linked to an expectation of reduction in this context, leading listeners to reconstruct the full form. With the input "I'mna", phonetic reduction is certainly given, and the full form imay be rteconstructed as either *going to* or *gonna*. The tendency to revert to *going to* indicates firstly that "I'mna" is indeed perceived as a phonetic reduction, and secondly, that *gonna* is frequently ignored in the search for a full form, and hence appears to be considered as a sub-variant of *going to*. Table 5-11 lists the output data divided into age groups, showing that with the input form "ena", this tendency to select *going to* applies to both generations (the subject condition has the lowest share of *gonna* more often overall.

in	put	=	"ena"	

	>30	ys	<30	ys
	going to - gonna	% gonna	going to - gonna	% gonna
null condition	20 - 57	74%	26 - 129	83%
subj = l	12 - 24	67%	19 - 58	75%
deont. mod.	9 - 24	69%	11 - 60	85%
high speech r.	6 - 29	83%	11 - 63	85%

Table 5-11: Experimental conditions by age group with input "ena"

In contrast, with the input "gonna", an age distinction is found for this effect (Table 5-8). Roughly speaking, in a context where reduction is expected, older listeners thus tend to take both "I'm gonna" and "I'mna" as reduced realizations of *going to*, whereas young listeners rather accept "gonna" as a full form. But, when pressed to interpret the undeniably reduced "I'mna" they still tend to revert to *going to*. These are, of course, only tendencies, revealed in comparison to other contexts (particularly the 'null condition').

The strongest effect in the model in Figure 5-5 is that of 'age'. Interestingly, "older" participants (those over 30 years) return less *gonna* in response to "ena" (67%, Table 5-9) than "gonna" (69%, Table 5-8). Clearly, younger listeners are more familiar with /ənə/ as a pronunciation variant of *gonna*.

The trend for 'sex' (significant at p=0.086) is similarly straightforward: men tend to repeat "ena" as *gonna* more than women. The effects of 'age' and 'sex' show no interaction interact, so that young men produce the highest share of *gonna*, and women in the older group the lowest (Table 5-12).

input = "ena"

	>30	) ys	<30	ys	
	going to - gonna	% gonna	going to - gonna	% gonna	
male	14 - 64	82%	9 - 77	90%	
female	33 - 70	68%	58 - 233	80%	

Table 5-12: Output variants by sex and age group with input "ena"

Finally, there is a marginally significant effect (p=0.89) of the 'replay' option favoring the output variant *gonna*. With the "-" responses excluded, *gonna* has a share of 82.3% (93/113) of the remaining responses to re-played inputs, compared to 78.9% (351/445) when the stimulus is heard only once (see Table 5-9 above). This is a small difference, but it seems to be robust enough to be significant as a trend. In this case, 'replay' serves to improve comprehension (as

*gonna* is closer to "ena" than *going to*), however "ena" was not always identified as either *going to* or *gonna* even after two listenings.

#### 5.2.1.5. A Note on Phonetically Reduced Realizations

On occasion, participants produced phonetically reduced forms of *going to/ gonna* that fall into the categories "goinde" or "ena". These are often, but not always, found in items with one of the reduced input forms ("goinde"/"gonna"), and are thus an exact (though not clear and literal) repetition. These cases may be a matter of perception, in that the reduction is perceived and then imitated. In other cases, the reduction occurs in production, but may nonetheless be influenced by the input, and thus be constrained by the experimental conditions or other factors.

Two of the experimental conditions are determinants of phonetic reduction in speech production: high speech rate and, due to its frequency in the string *I'm gonna/going to*, first person singular subjects. The former is a mode of production and hence promotes reduction for motoric reasons, whereas the latter is a context effect, in which reduction is a function of frequency. As the results show, the perception of these two conditions is not the same.

Figure 5-6 shows the mixed-effects model comparing full and reduced realizations in participants' responses. For the purpose of the model, realizations corresponding to /gpində/ and /ənə/ are conflated as 'reduced', and /gooiŋ to/ and /gpnə/ as 'full' realizations;<sup>107</sup> the "-" responses are again excluded. The resulting binary factor 'output realization' functions as the dependent variable. The model otherwise parallels those in Figures 5-2–5-5, except that it cuts across all input variants by adopting the input as a random factor.

<sup>&</sup>lt;sup>107</sup> Recall that the same distinction was devised in chapter 3.3.1.2.

			<u>all i</u>	nput vari	ants				
Generalized Linear Mixed Model									
dependent varia	ble: output	realizati	on (redu	ced   ful	Ll)				
Number of observations: 2305 groups: participantID, 59; sentenceID, 192; input.variant, 4									
Fixed Effects									
	Estimate	Std. Error	z value	Pr(> z )	-				
(Intercept)	-5.14786	0.60588	-8.497	<0.0001	* * *				
condition									
modality	-0.25211	0.40424	-0.624	0.53285					
condition									
speech rate	-0.48318	0.43744	-1.105	0.26935					
condition									
subject	1.91728	0.28330	6.768	<0.0001	* * *				
age	0.01821	0.01231	1.480	0.13894					
sex male	0.36707	0.39758	0.923	0.35587					
replay yes	0.85664	0.27658	3.097	0.00195	* *				

Figure 5-6: Mixed-effects model of output realizations

The high negative z-value for the intercept shows that reduced output realizations are a rare occurrence: 116 out of the 2305 observations fall into this category, 70 corresponding to "ena" and 46 to "goinde".

Of the factors considered, the subject condition is highly favorable to reduced output realizations (Z=6.77, p<0.001), which cannot be put down to the replications of "I'mna" noted above, as the model here generalizes over all input variants. Increased speech rate, in contrast, even has a negative effect on output reduction (Z=-1.11), though this is not statistically significant. Figure 5-7 presents the shares of phonetically reduced responses across input variants in the null condition, the subject condition, and increased speech rate. Even when the cases of imitative "I'mna" are disregarded, the first person singular subject still elicits the most reduced responses to some extent correlate with reduced input forms ("goinde", "ena"), for the 'subject' condition the correlation is between shorter input forms and more reduction in the output.



#### Figure 5-7: Phonetic reduction in going to/gonna output

It is perhaps logical that in this experimental setting, subject *I* favors reduction and high speech rate does not, since in repeating the stimulus participants are required to reproduce the string *I'm going to/gonna*, but not the recorded speaker's speech rate. However, in light of the findings of the previous sections, it is reasonable to assume that the first person subject with a short input variant ("I'm gonna", "I'mna") does favor phonetic reduction as well as the full variant *going to* in the output.<sup>108</sup> It is also suggested above that in perception, phonetic reduction is more expected in this context, and the full form is therefore more easily reconstructed. This expectation seems to be projected onto production, so that reduced forms are produced (even when speaking "clearly and literally") because they are rather considered acceptable realizations.

Increased speech rate, on the other hand, does not evidence any such expectation of reduction (recall that input "goinde" in high speech rate favors *gonna*, not *going to*, in the output). In processing rapid speech, listeners seem to rather accept what they hear (even when they mishear it). This is return to in the discussion of *gotta* and *got to* below.

<sup>&</sup>lt;sup>108</sup> Reduction and the variant *going to* coincide, of course, in the form "goinde", but the share of this form in the respective output data is not so large as to warrant explaining the two trends as one.

#### 5.2.1.6. Summary of the Results for going to/gonna

The responses to the various forms of *going to* and *gonna* do not always pattern in the most spectacular ways, but they produce a number of interesting results. Firstly, the general preference for the contracted variant in spoken English is reflected in the experimental results, as is the trend for younger speakers to use *gonna* more than older speakers. The factor 'age' is statistically significant in the models of the input forms "going to" and "ena", and is robust as a trend across all inputs. This is illustrated in Figure 5-8, which collates the 'age' lines from the four summary tables above. Overall, younger participants produce *gonna* at a higher rate, regardless of the input.



Figure 5-8: Share of output gonna by age across input variants

Secondly, increased speech rate has a notable effect only on the input form "goinde" (and "going to" with older participants) which is then more likely to be interpreted as *gonna*. A first person singular subject, in contrast, skews the perception of "gonna" and "I'mna" towards an interpretation as (reduced) instances of *going to*, leading participants to be more lenient with their own pronunciation and thus eliciting more reduced forms. Both rapid speech and preceding *I'm* are favoring factors of phonetic reduction in speech (chapter 3.3.1.). In perception, they elicit different reactions: when faced with rapid speech, listeners (even falsely) infer shorter forms, whereas they expect and (hyper-)correct reduction in the frequent string *I'm gonna*. These results are visualized in Figure 5-9.



Figure 5-9: Output gonna by conditions across input variants

We may speculate, therefore, that allegro speech plays a role in the propagation of *gonna*, and perhaps in the conventionalization of reduced forms in general. In rapid speech, listeners tend to perceive more *gonna* than is actually produced, hence the perceived frequency is skewed towards the contraction, which is then more highly activated and more likely to be used in similar situations.<sup>109</sup>

Uses of *going to* or *gonna* in deontic modality are not found to differ greatly from the more conventional intention/prediction uses in terms of how the forms are recognized. They do occasionally cause more problems, particularly with the form "ena", which corroborates the conjecture made earlier, i.e. that a command requires material for emphasis.

## 5.2.2. Results for (HAVE) got to/gotta

Turning to the responses given to sentences containing a variant of (HAVE) *got to/gotta*, we recall that the 'subject' condition is the third person singular (known to favor *got to* and to usually require HAVE), and the modality condition is 'epistemic' ('deontic' being the norm). As with the corpus data in previous chapters, the output sentences from the experiment can be distinguished by the use of *gotta* versus *got to*, and by whether the auxiliary HAVE is present or not. Here we focus on the former but consider auxiliary use where relevant.

When viewing the results, it should be kept in mind that the forms *got to* and *gotta* are declining as HAVE *to* is taking over, and that this process is generally further advanced in Canada than in the United States (Tagliamonte &

<sup>&</sup>lt;sup>109</sup> The idea that skewed perceived frequencies may promote a diachronic change is not altogether new: see Warner (2004) for a similar argument (though not based on speech rates) regarding the spread of DO-support.

D'Arcy 2007). Thus, the frequent occurrences of *got to/gotta* are relatively salient for the Canadian participants, which has inevitably influences their responses to a degree.

A complete overview of the frequency of each variant as a response to each input variant is given in Table 5-13.

output	HAVE got to	got to	HAVE gotta	gotta	TOTAL
-	48	58	47	49	191
	6.8%	8.2%	6.7%	6.9%	6.8%
HAVE got to	464	188	160	64	848
	65.7%	26.6%	22.7%	9.1%	30.0%
HAVE gotta	114	80	408	152	1,082
	16.1%	11.3%	57.8%	21.5%	38.3%
got to	31	263	6	38	81
	4.4%	37.3%	0.8%	5.4%	2.9%
gotta	49	117	85	403	622
	6.9%	16.6%	12.0%	57.1%	22.0%
TOTAL	706	706	706	706	2,824
	100.0%	100.0%	100.0%	100.0%	100.0%

Table 5-13: Overview of responses to (HAVE) got to/gotta

In each column in Table 5-13, the input variant is also the most frequent output variant. This shows that listeners are capable of picking up the subtle differences between these forms. Perhaps more interesting is to see where and how the output diverges from the input.

In total, the most frequent output variant is HAVE got to (31%), followed by HAVE gotta (26.7%); got to is rarely produced in divergence from the input and has the smallest share overall (12%). This picture is already very different from the preferences found in the corpus studies (chapters 3 and 4), where gotta is the most frequently used option, HAVE gotta is rare, and HAVE got to is slowly dying out. Clearly, participants notice the auxiliary when it is present in the input and repeat it correctly, and consequently, the HAVE-less variants rarely occur in response to an input variant that includes HAVE. In contrast, responses inserting HAVE when it is not present in the stimulus are relatively frequent. It could be that the participants tend to consider the auxiliary an obligatory element omitted only on the phonetic level, or that their greater familiarity with the variant HAVE to leads them to choose the more closely related forms. The factors conditioning these choices are examined below.

#### 5.2.2.1. Input Variant HAVE got to

Applying the same statistical model as above, we can determine the influence of each input variant in isolation, starting with the fullest and most easily understood, i.e. HAVE *got to*. Participants repeated this input variant faithfully almost two thirds of the time (65.7%), which is more than any of the other inputs.

A complete overview of the response preferences to the input HAVE *got to* is presented in Table 5-14. The table distinguishes the output only by whether *got to* or *gotta* was used. It can be seen from Table 5-13 (above) that the presence of auxiliary HAVE is strongly preferred here with both forms.

(HAVE) got to (HAVE) got				E) gotta		-	total (100%)
null condition	164	(69.5%)	56	(23.7%)	16	(6.8%)	236
subj = 3 p. sing.	90	(77.6%)	21	(18.1%)	5	(4.3%)	116
epistemic mod.	93	(80.1%)	22	(19%)	1	(0.9%)	116
high speech r.	56	(46.7%)	55	(45.8%)	9	(7.5%)	120
question	92	(78%)	9	(7.6%)	17	(14.4%)	118
TOTAL	495	(70.1%)	163	(23.1%)	48	(6.8%)	706
age <30	324	(69.5%)	111	(23.8%)	31	(6.7%)	466
age >30	171	(71.3%)	52	(21.7%)	17	(7.1%)	240
male	147	(66.8%)	55	(25%)	18	(8.2%)	220
female	348	(71.6%)	108	(22.2%)	30	(6.2%)	486
replay	64	(71.9%)	18	(20.2%)	7	(7.9%)	89
no replay	431	(69.9%)	145	(23.5%)	41	(6.6%)	617

input = HAVE got to

Table 5-14: Overview of responses to input HAVE got to

As Table 5-14 illustrates that the quantities of *got to* and *gotta* outputs produced vary considerably according to the experimental conditions. The highest share of the full form in the output is found in sentences with epistemic modality (80.1%), the lowest (by far) in the increased speech rate condition (46.7%). Questions containing HAVE *got to* appear to cause the most confusion, as can be inferred from the large share of "-" responses (14.4%) in this condition. Note that all 17 of these "-" responses come in the form of HAVE *to*, resulting in input-output pairs such as (162). Here, the listeners appear to "correct" the illicit construction HAVE *got to* to the regular HAVE *to*.

(162) Input: When have I got to feed the crocodiles again?

211

Output: When do I have to feed the crocodiles again?

Regarding nonlinguistic factors, however, none seems to have an appreciable influence on variant choice in response to HAVE *got to*. The levels of 'age', 'sex', and the replay factor all hover around 70% (HAVE) *got to* responses.

Again here, a generalized linear mixed model is fitted over these figures. The settings of the model are the same as that for *going to/gonna* above: random factors are included for the individual participant, the individual input sentence, and the order of the stimuli for each participant. The "-" responses are excluded and the presence or absence of auxiliary HAVE in the output is disregarded, so that the model only compares *got to* and *gotta* as output variants. The fixed effects of this model are displayed in Figure 5-10.

			input	= HAVE g	<u>ot to</u>					
Generalized Linear Mixed Model										
dependent variable: output variant (got to   gotta)										
Number of obser	vations: 6	58								
groups · partici	$pantTD_{2}$ 50	: sentenceT	D. 52							
groups. parerer	panerb, ob		0, 02							
Fixed Effects										
	Estimate	Std. Error	z value	Pr(> z )	_					
(Intercept)	-1.25776	0.59493	-2.114	0.03451	*					
condition										
modality	-0.17560	0.48111	-0.365	0.71512						
condition										
speech rate	1.28819	0.41636	3.094	0.00198	**					
condition										
subject	-0.11175	0.48653	-0.230	0.81834						
condition										
question	-1.64293	0.60802	-2.702	0.00689	**					
age	-0.01266	0.01700	-0.744	0.45659						
sex male	0.37242	0.52389	0.711	0.47716						
replay yes	-0.23793	0.38347	-0.620	0.53496						

Figure 5-10: Mixed-effects model of responses to input HAVE got to

The general prevalence of output *got to* is reflected here in the negative intercept. The observed fixed effects and their weighting are also not unexpected: 'speech rate' and 'question' show the strongest influence; 'modality', on the other hand, exhibits a high distributional amplitude in Table 5-14, but does not show a significant effect in the statistical model.

The model also shows that a HAVE *got to* in rapid speech is much more likely to be perceived as *gotta* than when produced at a normal speech rate. This clearly parallels the case of "goinde" discussed above (5.2.1.2.), i.e. that listeners infer the contraction when it is not present rather than reconstructing (or in this case: recognizing) the full form.

The (non-significant) effect of epistemic modality seems to be outweighed by the other effects. Epistemic HAVE *got to* is repeated faithfully as the full form more often than expected, although no such preference was found in usage (chapters 3 and 4). Note that the following sections reveal a general trend for input forms in epistemic modality to be replicated more accurately throughout).

In the question condition, there are very few *gotta* responses to HAVE *got to* input (only 9 instances). Thus, with the "-" outputs excluded, this condition yields a strong effect of favoring full form *got to* outputs. Of these, 90 retain the auxiliary HAVE, and only two omit it (i.e. come in the form *do* ... *got to*). The repetition of HAVE *got to* in questions is thus extremely accurate, which is also seen with the other input variants.

#### 5.2.2.2. Input Variant Ø got to

The variant  $\emptyset$  got to is relatively rare in the data of spoken American English, where got to tends to retain the auxiliary (see chapter 3). It is not surprising, then, that this is the least faithfully replicated form in the experiment, with merely 37.3% accurate repetitions (see Table 5-13 above). However, despite the general preference for the contraction in spoken language, participants here still rather insert HAVE than change the form into gotta (as Table 5-13 shows). Table 5-15 presents this choice (got to or gotta) in the responses across the experimental conditions and external factors.

	(HAVE	) got to	(HAVE) gotta		-		total (100%)
null condition	142	(60.2%)	76	(32.2%)	18	(7.6%)	236
subj = 3 p. sing.	88	(75.9%)	20	(17.2%)	8	(6.9%)	116
epistemic mod.	89	(76.7%)	23	(19.8%)	4	(3.4%)	116
high speech r.	55	(45.8%)	57	(47.5%)	8	(6.7%)	120
question	77	(65.3%)	21	(17.8%)	20	(16.9%)	118
TOTAL	451	(63.9%)	197	(27.9%)	58	(8.2%)	706
age <30	307	(65.9%)	124	(26.6%)	35	(7.5%)	466
age >30	144	(60%)	73	(30.4%)	23	(9.6%)	240

input = got to

16

42

input = got to									
output variant									
	(HA)	VE) got to	(HA	VE) gotta		-	total (100%)		
male	142	(64.5%)	60	(27.3%)	18	(8.2%)	220		
female	309	(63.6%)	137	(28.2%)	40	(8.2%)	486		
			1		1				

45

152

(68.7%)

(62%)

134

317

input = got to

Table 5-15: Overview of responses to input  $\emptyset$  got to

195

511

(8.2%)

(8.2%)

As with the input variant HAVE *got to*, the experimental conditions exert a heavy influence on variant choice in responses. Third person singular subject and epistemic modality show an increased share of *got to* responses (75.9% and 76.7%, respectively, compared to 60.2% in the null condition); high speech rate, on the other hand, shifts the preference towards *gotta*, and the question condition (producing *do...got to*) again stands out for being the most misunderstood (16.9% "-"). These tendencies are largely parallel to what was found with the input form HAVE *got to*.

(23.1%)

(29.7%)

Also in line with the findings for input HAVE *got to*, the social variables 'age' and 'sex' have no noticeable influence on the perception of  $\emptyset$  *got to*. However, this input variant appears to be more difficult for the listener, as shown by both the higher share of "-" responses (8.2%, compared to 6.8% with input HAVE *got to*) and the increased use of the 'replay' option (195 times, compared to 89). Re-played stimuli with  $\emptyset$  *got to* are repeated only slightly more accurately than those heard only once.

The generalized linear mixed model of the data for input  $\emptyset$  got to is provided in Figure 5-11. Again, what the model compares is output (HAVE) got to versus (HAVE) gotta, with the "-" responses excluded.

replay

no replay

			inpu	t = Ø go	t to				
Generalized Linear Mixed Model									
dependent varia	dependent variable: output variant (got to   gotta)								
Number of obser	vations: 6	48							
groups: partici	pantID, 59	; sentenceII	D <b>,</b> 52						
Fixed Effects									
	Estimate	<u>Std. Error</u>	<u>z value</u>	<u>Pr(&gt; z )</u>					
(Intercept)	-1.042180	0.550473	-1.893	0.0583	•				
condition									
modality	-0.999159	0.478773	-2.087	0.0369	*				
condition									
speech rate	0.920492	0.403916	2.279	0.0227	*				
condition									
subject	-1.065337	0.490381	-2.172	0.0298	*				
condition									
question	-0.877959	0.533242	-1.647	0.0997	•				
age	0.007905	0.015191	0.520	0.6028					
sex male	-0.259700	0.479829	-0.541	0.5883					
replay yes	-0.253438	0.285608	-0.887	0.3749					

Figure 5-11: Mixed-effects model of responses to input  $\emptyset$  got to

All four experimental conditions rate as significant at least as a trend (p<0.1) in the model, while the other factors, expectedly, have no significant influence. As the following discussion in part hinges on the accuracy of the responses, it is also important to observe at what rates the auxiliary HAVE is inserted with the output *got to*. This is shown in Table 5-16.

input = $\emptyset$ got to								
	null cond.	epistemic modality	high speech rate	3 p. sing. subject	question			
Ø got to	64	50	22	65	62			
HAVE got to	78	39	33	23	15			
% HAVE	55%	44%	60%	26%	19%			

Table 5-16: got to and HAVE got to in response to input  $\emptyset$  got to

The sentences in both the subject and the question condition here contain constructions that are highly unusual and may be considered "incorrect" – consider examples (163)-(164).

(163)*Anyway, he got to decide for either the penguin of the tiger now.* (164)*What do I got to give the elephant when he's sick?* 

One might expect listeners to re-interpret *got to* as the somewhat less incongruous *gotta* in these contexts to mitigate the oddness of the sentences, or alternatively to "correct" sentences such as (163) by inserting the auxiliary *has* (recall the discussion of these forms in 4.3.1.). Instead, they repeat them even more accurately than in other contexts (see the low rates of HAVE-insertion for these conditions in Table 5-16). These out-of-the-ordinary phrases seem to catch the listener's attention, a point we come back to later.

The same effect, an increase in the number of accurate repetitions, is found for epistemic modality, although there is nothing strange about these sentences (consider example (165)).

## (165) Well, now you got to think I'm a complete idiot.

This effect of epistemic modality is also evident with other input variants, to varying degrees, although for a different reason than the similar effects of 'subject' and 'question'.

Finally, increased speech rate significantly favors the interpretation of "got to" as *gotta*. This effect is also found for input HAVE *got to*. Thus, high speech rate increases the chance for *got to* to be perceived as *gotta* irrespective of whether the auxiliary is present or not.

## 5.2.2.3. Input Variant HAVE gotta

More than half of the instances of input HAVE *gotta* are repeated accurately by participants (57.8%, Table 5-13 above). Where the response deviates from the input, HAVE *gotta* is more often turned into HAVE *got to* (22.7%) than  $\emptyset$  *gotta* (12%). The distributions of output *got to* and *gotta* (i.e. with the auxiliary disregarded) in response to the input HAVE *gotta* over the various factors is presented in Table 5-17. The generalized linear mixed model in Figure 5-12 assesses these data statistically as outlined above.

	(HAVE	) got to	(HAVE	E) gotta		-	total (100%)
null condition	62	(26.3%)	164	(69.5%)	10	(4.2%)	236
subj = 3 p. sing.	32	(27.6%)	82	(70.7%)	2	(1.7%)	116
epistemic mod.	26	(22.4%)	85	(73.3%)	5	(4.3%)	116
high speech r.	15	(12.5%)	96	(80%)	9	(7.5%)	120
question	31	(26.3%)	66	(55.9%)	21	(17.8%)	118
TOTAL	166	(23.5%)	493	(69.8%)	47	(6.7%)	706

#### input = HAVE gotta

	(HAV	E) got to	(HA	VE) <i>gotta</i>		-	total (100%)
age <30	120	(25.8%)	318	(68.2%)	28	(6%)	466
age >30	46	(18.9%)	175	(71.7%)	19	(7.8%)	240
male	42	(19.1%)	164	(74.5%)	14	(6.4%)	220
female	124	(25.5%)	329	(67.7%)	33	(6.8%)	486
replay	26	(23.9%)	71	(65.1%)	12	(11%)	109
no replay	140	(23.2%)	422	(69.9%)	35	(5.8%)	597

#### input = HAVE gotta

Table 5-17: Overview of responses to input HAVE gotta

			<u>input</u>	= HAVE $g$	otta					
Generalized Lin	Generalized Linear Mixed Model									
dependent varia	ble: outpu	t variant (g	got to	gotta)						
Number of obser	vations: 6	48								
groups: partici	pantID, 59	; sentenceII	D <b>,</b> 52							
Fixed Effects										
	Estimate	<u>Std. Error</u>	z value B	Pr(> z )						
(Intercept)	1.047384	0.556821	1.881	0.0600	•					
condition										
modality	0.462287	0.341276	1.355	0.1755						
condition										
speech rate	0.971443	0.392870	2.473	0.0134	*					
condition										
subject	0.183993	0.328469	0.560	0.5754						
condition										
question	-0.280046	0.324425	-0.863	0.3880						
age	0.004382	0.016479	0.266	0.7903						
sex male	0.555314	0.514658	1.079	0.2806						
replay yes	0.017299	0.304525	0.057	0.9547						

Figure 5-12: Mixed-effects model of responses to input HAVE gotta

Here, *gotta* is clearly a more frequent response than *got to* (69.8% versus 23.5%), hence the intercept of the model in Figure 5-12 is reversed compared to those of the previous input variants.

Of the distributions in Table 5-17, it is only those for the experimental conditions that show interesting differences, which is also in line with the results from the other input forms. Although these distributions suggest a number of trends, only one effect reaches statistical significance. Increased input speech rate, again, favors the interpretation of input HAVE *gotta* as output  $\emptyset$  *gotta* (at 80% compared to 69.5% in the null condition, and p<0.01). This

omission of auxiliary HAVE in the high speech rate condition implies that rapid speech leads to the shorter variant being the preferred interpretation (see its lower retention rate in Table 5-18).

input = HAVE <i>gotta</i>								
	null cond.	epistemic modality	high speech rate	3 p. sing. subject	question			
ø gotta	33	9	37	0	6			
HAVE gotta	131	76	59	82	60			
% HAVE	80%	89%	61%	100%	91%			

Table 5-18: gotta and HAVE gotta in response to input HAVE gotta

Epistemic modality also shows a slight preference for *gotta* in response to input HAVE *gotta* (73.3%), though this is not statistically significant. This condition also increases the rate of HAVE retention (Table 5-18), so that again, epistemic modality yields relatively many accurate repetitions (76 out of 116, or 66%, compared to the overall rate of 57.8%)

Questions, as with the other input variants, elicit more "-" responses (17.8%, compared to 4.2% in the null condition, Table 5-17), showing that they are problematic with HAVE *gotta* as well. This appears to come at the expense of *gotta* responses, which show a lower rate with questions (55.9%) than in the null condition (65.9%, Table 5-17). Thus, despite their salience, questions with HAVE *gotta* do not prompt participants to repeat the form more faithfully, unlike what is observed with the input variants HAVE *got to* and  $\emptyset$  *got to*.

## 5.2.2.4. Input Variant Ø gotta

Obviously,  $\emptyset$  gotta is the most reduced of the four input variants considered here. The overview in Table 5-13 already shows that when participants diverge from this form in their response, they rarely revert to (HAVE) got to (14.5%), but are more inclined to insert the auxiliary HAVE (21.5%), even though the resulting HAVE gotta is relatively rare in actual spoken English (see chapter 3.1.).

Table 5-19 displays the distribution of output variants across the experimental conditions and external factors. These data (excluding the "-" response) are fed into a generalized linear mixed model as depicted in Figure 5-13.

	(HAVE	E) got to	(HAV	/E) <i>gotta</i>		-	total (100%)
null condition	41	(17.4%)	178	(75.4%)	17	(7.2%)	236
subj = 3 p. sing.	20	(17.2%)	94	(81%)	2	(1.7%)	116
epistemic mod.	12	(10.3%)	98	(84.5%)	6	(5.2%)	116
high speech r.	12	(10%)	98	(81.7%)	10	(8.3%)	120
question	17	(14.4%)	87	(73.7%)	14	(11.9%)	118
TOTAL	102	(14.5%)	555	(78.6%)	49	(6.9%)	706
age <30	69	(14.8%)	362	(77.7%)	35	(7.5%)	466
age >30	33	(13.8%)	193	(80.4%)	14	(5.8%)	240
male	36	(16.4%)	174	(79.1%)	10	(4.5%)	220
female	66	(13.6%)	381	(78.4%)	39	(8%)	486
replay	18	(13.5%)	107	(80.5%)	8	(6%)	133
no replay	84	(14.7%)	448	(78.2%)	41	(7.2%)	573

input = ∅ *gotta* 

Table 5-19: Overview of responses to input  $\emptyset$  gotta

<u>input = Ø gotta</u>										
Generalized Linear Mixed Model										
dependent variable: output variant (got to   gotta)										
Number of observations: 657										
groups: partici	pantID, 58	; sentenceID	<b>),</b> 52							
Fixed Effects										
<u>FIREU HITECES</u>	Estimate	Std. Error	z value	Pr(> z )						
(Intercept)	1.878639	0.574190	3.272	0.00107	**					
condition										
modality	0.867010	0.476795	1.818	0.06900						
condition										
speech rate	0.758473	0.448408	1.691	0.09075						
condition										
subject	0.068936	0.424751	0.162	0.87107						
condition										
question	0.197152	0.437400	0.451	0.65218						
age	0.005668	0.016629	0.341	0.73322						
sex male	-0.197696	0.513660	-0.385	0.70033						
replay yes	0.147458	0.367906	0.401	0.68857						

Figure 5-13: Mixed-effects model of responses to input  $\emptyset$  gotta

The picture here is similar to that with the input variant HAVE *gotta* (and, for the most part, with the other inputs as well), albeit with different weightings.

Epistemic modality and increased speech rate show marginally significant effects here, favoring the interpretation of the input  $\emptyset$  gotta as (HAVE) gotta. As Table 5-20 shows, these conditions induce insertion of auxiliary HAVE at roughly the same rate as the null condition. For the speech rate condition, this results in the paradoxical picture that HAVE tends to be eliminated when it is present in the input, but is readily inserted when absent from the stimulus.

input = ∅ <i>gotta</i>								
	null cond.	epistemic modality	high speech rate	3 p. sing. subject	question			
ø gotta	120	66	68	73	76			
HAVE gotta	58	32	30	21	11			
% HAVE	33%	33%	31%	22%	13%			

Table 5-20: gotta and HAVE gotta in response to input  $\emptyset$  gotta

According to this model, questions with  $\emptyset$  gotta are misunderstood more often than other sentences (11.9% "-" responses, compared to 7.2% in the null condition), but the difference is not as stark as with the other input forms. Questions also show a low rate of HAVE-insertion here, meaning that they produce a large share of accurate repetitions. This is in line with the emergence of the DO X gotta construction found in the diachronic corpus data (4.4.2.), but should not be taken as unequivocal evidence. As mentioned above, these question forms are highly conspicuous and may lead participants to repeat them faithfully even in opposition to their linguistic intuition.

The factors 'age', 'sex', and 'replay' do not affect the variant choice in response to input  $\emptyset$  *gotta* (nor to any of the other input variants examined here). It may be noted, however, that although  $\emptyset$  *gotta* is the most reduced of the variants, it appears less problematic for the listener than the full form  $\emptyset$  *got* to. This is evidenced by both the overall share of "-" responses (6.9% and 8.2%, respectively) and the number of replays (133 and 195, respectively). Interestingly, young participants seem to find  $\emptyset$  *gotta* more difficult to understand than older ones (as judged by the share of "-" responses), while the opposite goes for all other input variants.

## 5.2.2.5. A Note on Auxiliary HAVE

In the discussions of *got to* and *gotta* above, the question of to what extent the auxiliary HAVE is present or absent in the responses is only briefly touched upon. Here it becomes the focus and thus whether the form used with or

without HAVE is the full or contracted variant is disregarded. Accordingly, the input variants HAVE got to and HAVE gotta are conflated, as well as  $\emptyset$  got to and  $\emptyset$  gotta. Taking this approach, we can see under which conditions listeners tend to recognize the auxiliary in the input, and what leads them to reconstruct it when absent from the input.

The generalized linear mixed models in Figures 5-14 and 5-15 are parallel to the models presented above, only what they measure is the auxiliary (HAVE or  $\emptyset$ ) in the output; as they use data from two input variants combined, this is taken up as a random factor (i.e. the model factors out whether the input form was *got to* or *gotta*). Figure 5-14 shows the auxiliary use in response to stimuli in which HAVE is present, Figure 5-15 does so for inputs without it. Positive Z values stands for increased presence of the auxiliary in the output, a negative Z signifies increased omission.

input = HAVE got to/gotta										
<u>Generalized Linear Mixed Model</u>										
dependent variable: output auxiliary (HAVE   Ø)										
Number of observations: 1317										
groups:										
participant	ID, 59; se	entenceID, 1	04; inpu	ıt.varian	t, 2					
Fixed Effects										
	Estimate	Std. Error	z value	Pr(> z )	)					
(Intercept)	3.37553	0.61669	5.474	<0.0001	***					
condition										
modality	1.06433	0.47114	2.259	0.02388	*					
condition										
speech rate	-1.39131	0.36667	-3.794	0.00015	***					
condition										
subject	2.89227	0.72503	3.989	<0.0001	***					
condition										
question	1.47715	0.56214	2.628	0.00860	* *					
age	-0.01673	0.01698	-0.985	0.32463						
sex male	-0.94473	0.53183	-1.776	0.07567						
replay yes	0.27902	0.34787	0.802	0.42250						

Figure 5-14: Mixed-effects model of auxiliary repetition/elimination

		<u>i</u>	<b>nput =</b> 2	got to/	gotta				
Generalized Lin	near Mixed	Model							
dependent variable: output auxiliary (HAVE   Ø)									
Number of obser	rvations: 1	305							
groups:									
participant	ID, 59; se	ntenceID, 1	04; inpu	ıt.varian	t, 2				
Fixed Effects									
	Estimate	Std. Error	<u>z value</u>	Pr(> z )	<u>)</u>				
(Intercept)	-0.30147	0.55399	-0.544	0.5863					
condition									
modality	0.13825	0.34170	0.405	0.6858					
condition									
speech rate	e -0.34016	0.31596	-1.077	0.2817					
condition									
subject	-0.59341	0.34817	-1.704	0.0883	•				
condition									
question	-2.40774	0.44024	-5.469	<0.0001	***				
age	0.01010	0.01441	0.701	0.4833					
sex male	-0.51499	0.45768	-1.125	0.2605					
replay yes	-0.85083	0.21122	-4.028	<0.0001	***				

Figure 5-15: Mixed-effects model of auxiliary (non-)insertion

There are two conditions that feature as significant (at different levels) in both models: Third person singular subjects and questions. They also show the same tendencies (at different strengths), namely to retain HAVE when it is present in the input (Figure 5-14), but to disfavor it otherwise (Figure 5-15). In short, these conditions lead to more faithful repetitions with respect to auxiliary HAVE. For questions, which exhibit a strong effect in both models, this is clearly an effect of salience, as has been noted above. For third person singular subjects, it is when the expected auxiliary is lacking in the stimulus that salience plays a role. In this case, increased salience both increases and counters the impulse to "correct" the sentence by including HAVE. It appears that listeners tend to notice not only the oddness of the sentence but also the reason for it (the missing auxiliary), and repeat the phrase accurately, if counter to their normal linguistic production.

Increased input speech rate strongly favors the elimination of an originally present HAVE on repetition. Thus, again, rapid speech leads listeners to perceive a shorter form than what was actually presented to them (recall that high speech rate also favors output *gotta* throughout).

Epistemic modality, on the other hand, facilitates recognition of the auxiliary (z=2.26 in Figure 5-14), and thus accurate repetition, but does not seem to affect phrases without it.

Finally, there is a strong effect for the 'replay' factor: re-played input phrases lacking the auxiliary are also acurately repeated without it. Thus, counter to the findings for *got to/gotta*, a second listening increases the accuracy of responses in this case.

#### 5.2.2.6. Summary of Results for (HAVE) got to/gotta

The previous sections show that the perception of (HAVE) *got to* and (HAVE) *gotta* is strongly affected by the experimental conditions included in the study, while the listener's age and sex, or whether the stimulus was re-played, hardly play a role. Lineing up the results by conditions can thus provide a summary of the overall effect of each.

**Epistemic modality** shows a complex yet coherent pattern of preferences. With the input variants  $\emptyset$  got to and  $\emptyset$  gotta, it favors the respective input form; however, with input HAVE got to and HAVE gotta, it favors retention of the auxiliary HAVE, but shows no significant preference with respect to the variant (got to or gotta). Both effects promote accurate repetitions, though of different parts of the input construction. To make sense of this, recall that in chapter 3, epistemic modality is suggested to be a possible semantic niche for (HAVE) got to/gotta which has not (yet) been displaced by HAVE to, and that in the natural spoken data it showed a slight tendency toward auxiliary retention, but no preference for either got to or gotta. It follows that epistemic modality in general allows for a rather free variation – thus, none of the input variants take the listener by surprise, and there is no impulse to change the form in any direction; the priority being to retain the structure auxiliary+variant.

**Increased speech rate** of the stimulus produces a straightforward effect: all input variants are more often perceived as *gotta*. Although the speech rate condition does not significantly inhibit the insertion of HAVE with input  $\emptyset$  *got to/gotta*, the auxiliary tends to go unnoticed when it is present. These effects converge to make  $\emptyset$  *gotta* the typical form perceived in a rapidly spoken input. Figure 5-16 illustrates this by comparison with the null condition, showing the overall shares of output forms (irrespective of the input).



Figure 5-16: Overall output frequencies in high speech rate and null condition

Third person singular subjects and questions behave very similarly to each other. Both show effects favoring the accurate repetition of input *got to*, and for faithful repetition of the presence or absence of auxiliary HAVE. The latter can be explained by the quasi-absolute rules prescribing *has* with third person singulars and the construction DO X HAVE *to* for questions, and the salience of utterances defying these rules. The partially increased accuracy with *got to* may be a side effect of this salience (note that in the subject condition, the effect occurs for input  $\emptyset$  got to, but not HAVE got to).

## 5.2.3. Results for trying to/tryna and need to/needa

In addition to the contractions *gonna* and *gotta*, two less frequent pairs of a full and contracted form of a semi-modal expression are examined, namely *trying to/tryna* and *need to/needa*. As these are included only for comparison, they were not subjected to particular experimental conditions, but participants were presented with various input phrases including the forms "trying to" and "tryna", or "need to" and "needa".

In terms of results, there is little to report, as the contracted forms are hardly ever repeated in the responses. The figures are presented in Table 5-21. It is telling that even the erroneous responses ("-" in Table 5-21, e.g. *have to* for *need to*, *try and* for *trying to*) by far outnumber the contractions in the output.

output	trying to	tryna	need to	needa	TOTAL
-	10	10	18	19	57
	8.6%	8.6%	15.0%	15.8%	
trying to	101	99			200
	87.1%	85.3%			
tryna	5	7			12
	4.3%	6.0%			
need to			102	98	200
			85.0%	81.7%	
needa			0	3	3
			0.0%	2.5%	
TOTAL	116	116	120	120	476
	100.0%	100.0%	100.0%	100.0%	

Table 5-21: Responses to trying to/tryna and need to/needa

These contractions clearly function as phonetic reductions, in that they are recognized not as independent items, but as realizations of their respective full forms. Judging by the "-" outputs, the contractions do not cause any more difficulty than the corresponding full forms, though especially *need to / needa* are relatively often misinterpreted.

## 5.3. Summary and Conclusion of the Perception of gonna and gotta

The experiment presented in this chapter probes into the perception of the contracted semi-modals *gonna* and *gotta*. On a very basic level, it shows that language users indeed recognize these forms and largely distinguish them from their respective full forms, whereas this is not true for the forms *tryna* and *needa*.

In detail, the experiment yields some interesting observations, which largely concur with the corpus findings of the previous chapters. It is shown in chapter 3 that younger speakers use the contractions more, which recurs in the experimental data for *gonna* (but not for *gotta*). The apparent time shift towards *gonna* thus covers both production and perception, while *gotta*'s development is stalled by the increasing preference for HAVE *to*.

The influence of increased speech rate on perception provides a compelling complement to the role of speech rate in production. Rapid speech is conducive to phonetic reduction and has been shown to be receding as a factor in the use of *gonna* and *gotta*, signaling the increasing emancipation of

these forms. It seems that it also promotes reduced forms in perception, as rapid speech leads listeners to "hear" more reduction than actually present in the input. The finding that for *going to/gonna*, high speech rate only affects the perception of the form "goinde" shows that *going to* and *gonna* are in principle well distinguished, but that the pathway leading to the establishment of *gonna* can still be traced. In contrast, *gotta* is favored in the interpretation of all the respective input forms at high speech rate, showing that the relation between *got to* and *gotta* is still to some extent dependent on phonetic constraints. All in all, listeners appear to be unaware of reductions induced by rapid speech, and even to 'falsely' infer more reduction in processing rapidly spoken utterances. Thus, high speech rate utterances may also play an important role in promoting reduced forms.

In contrast, the high-frequency collocation (*I'm going to/gonna*) that also favors of reduction in production, has the opposite effect on perception, leading listeners to reconstruct the full form (*going to*) from shorter inputs ("gonna", "I'mna"), but also to produce more phonetically reduced forms in the output. This can be explained by an expectation of reduction in high-frequency contexts.

Taking this finding a step further, it can be tentatively concluded that high-frequency collocations favor reduced forms (as is well known), but do not necessarily contribute to their promotion and emancipation in the language, as these instances are recognized as reduced sub-variants, perhaps tied to the particular collocate, but not as separate items. As a conclusion for the present data, this is a somewhat speculative hypothesis is, but is one that may be tested in future research.

Finally, the experimental approach here to elucidates the place that epistemic modality takes among modal expressions of (originally) obligation and necessity. There seems to be more variability in this use, and thus a possible semantic niche for *gotta* where it may withstand the advancement of HAVE *to*. A preference for *going to* over *gonna* in deontic uses, however, cannot be confirmed; what is revealed is that reduction is problematic in commands.

On a methodological level, this perception experiment has proven to be a useful complement to the corpus studies. It has shown that the representation of contractions is conditioned by linguistic factors not only in usage, but also in perception, and in subtly different ways. The cognitive representation of a form is determined by both how it is used and how it is perceived.

# CHAPTER 6 Conclusion

#### *Everything's gonna be alright.* (Paul Butterfield, Bob Marley and many others agree)

Two detailed corpus analyses and an experimental study combine to comprehensively invetigate the development of the contracted semi-modals *gonna*, *gotta* and *wanna* as an on-going process of emancipation of new lexical forms in North American English. The results allow the proposition that they are increasingly becoming dissociated from their source forms (*going to*, HAVE *got to*, *want to*), and behaving more and more like words in their own right. The hypothetical destination of this development is defined as a state in which they are "used and perceived as independent items, without conceptual recourse to the source form" (chapter 2), which would mean complete dissociation from the historical origin, i.e. the completion of the emancipation process.

A large amount of data and statistics have been presented, and many aspects of variation and trends of change discovered. Drawing on the concluding sections of each chapter, we now zoom out in order to see the big picture.

## 6.1. Summary of Results

Three studies have been presented to elucidate the changing relation of the contractions and their source forms in the general context of modality and grammaticalization.

Firstly, a corpus study of synchronic spoken data (mainly the Santa Barbara Corpus of Spoken American English) was presented, dealing with the variation between the full and contracted semi-modals in everyday spoken discourse (chapter 3). This study shows the rise of the contractions *gonna* and *wanna* in apparent time, and reveals that *gotta* is prevailing even as its source construction (HAVE) *got to* is losing ground to the more generally applicable HAVE *to*. More specifically, the patterns of variation are examined according to a number of factors, both intralinguistic and social, it is demonstrated that the use of *gonna* is significantly different from what we would expect if solely phonetic reduction was at play, which results in reduced forms such as /gpində/ or /ənə/. In fact, we can see that *gonna* is coming to be used virtually without restriction in spoken American English. *Gotta* and *wanna* are less advanced in this respect, and are still more tied to their source forms. The analogous contractions *tryna* (*trying to*) and *needa* (*need to*) occur as reduced forms, but do not appear to become emancipated.

The corpus study of diachronic speech-purposed writing (the Drama&Movie portion of the Corpus of Historical American English) investigated changes in the patterns of variation concomitant with a drastic, simultaneous frequency boost of the contractions in the late 1960s, which is here labeled a "linguistic Woodstock moment" (chapter 4). The contractions are found to rise largely at the expense of central modals rather than the semi-modal full forms. The corpus study shows that the determinants of variation do not change as dramatically as the sudden change in frequencies might suggest, but the shifts that do occur mostly point to the contractions' increasing independence (e.g. decreasing influence of collocational preferences and increasing explicitness of the contractions. Some important qualifications are also pointed out; for example, the contractions. Overall, *gonna* was again found to be the most advanced item in terms of emancipation.

Finally, the psycholinguistic experiment drew on some of the corpus findings about the use of gonna and gotta and tested them on perception. It produced evidence that language users generally distinguish between the full forms and the contractions, but also use them interchangeably. Moreover, the experimental results confirmed the apparent time cline towards the contraction for gonna but not for gotta (where the dominant variant HAVE to interferes with the development). Perhaps the most intriguing finding from this experiment is the difference between the effects of two determinants of (phonetic) reduction, speech rate and frequent collocation. Listeners infer more reduction when hearing rapidly spoken input, thus also increasing the share of perceived contraction, whereas they tend to reconstruct the full form in the more frequent context, possibly because it leads them to expect reduction. The speech rate condition also showed that *gonna* is better distinguished from *going to* (which is recognized even in rapid speech, except in the reduced form "goinde") than gotta is from (HAVE) got to (which is not well recognized in rapid speech, thus eliciting the contraction on repetition).

Much of the evidence found in these different studies converges. Thus, as a first step of generalization we can deduce from the data a list of five properties of emancipating forms, by which the degree of emancipation may be measured. These are the following five parameters:

- i) an increase in relative frequency (as compared to the source form)
- ii) a decline of 'reduction features' (such as the influence of speech rate, immediate context, and prosody)
- iii) a decline of social restrictions (the contraction 'goes mainstream')
- iv) a semantic/functional divergence (the contraction is used to express different aspects of modality than the source form)
- v) a structural divergence (the contraction occurs in different syntactic positions than the source form)

How these parameters apply to each contraction in a particular type of data can be gleaned from the respective chapters. Here, I want to submit a few theoretical remarks and attempt to draw some generalized conclusions.

As already suggested, the five parameters are not of equal import to emancipation. The most essential one is, by definition, the decline of reduction features, most notably the influence of speech rate and high-frequency collocations. The contractions originate as phonetically reduced forms, and emancipation implies a reanalysis from phonetic reduction to lexical variation. This process can be shown most clearly for *gonna*, and *wanna* appears to be on the same path, although trailing behind. The development of *gotta*, on the other hand, is somewhat erratic. Moreover, the term 'reduction features' here makes reference to a mix of factors that favor reduction in speech, while the experimental results from chapter 5 suggest that at least two of these factors, rapid speech and frequent collocation, elicit different reactions in terms of perceived reduction and contraction: listeners infer reduction in rapid speech, but recognize its absence in reduction-favoring collocations.

Increasing relative frequency is another necessary ingredient of emancipation, as it can be assumed that language users need a cue to reconceptualize the contracted forms. Moreover, there may be an upward spiral in frequency: the more often a language user hears the contracted form, the more ready they will be to recognize it as a distinct variant; the more they recognize it as a distinct variant, the more they will deliberately use it. The contractions *gonna*, *gotta*, and *wanna* all show an increase in relative frequency both in apparent and real time. The analogous forms *tryna* and *needa* meanwhile remain at a low level.

Semantic divergence is an undeniable sign of emancipation when it occurs, since if the forms are used for different meanings, they must be separate entities. However, it may appear only as a weak and transient feature, if the competition between the full form and the contraction plays out in all aspects of meaning that the forms cover. Signs of such divergence have been found for *gonna*, which is advancing faster in pure prediction senses, and slower in the deontic (command) use.

Structural divergence is also a certain indicator of variation beyond purely phonetic reduction, and it is reasonable to assume that when the differences in syntactic properties of two related forms increase, their conceptual representations also diverge. However, the structural difference that has been found, i.e. that contractions are preferred at phrase boundaries, is strong from the beginning and consequently shows little increase. Hence, a development must have taken place at an earlier stage, before the contracted forms were adopted into writing. Also, the syntactic factor 'clause type', comparing main clauses and relative/complement clauses, did not yield strong results (chapter 3). It seems possible, though, that more syntactic differences could be found by specifically considering syntactic contexts in speech-purposed writing (after all, the ones found here were discovered more by serendipity than research design).

Lastly, the decline of social restrictions requires that a difference in social stance exists between the full and contracted form to begin with – such a distinction along social lines can only develop once the contraction is recognized as a distinct pronunciation variant. With respect to the social properties of a speaker, receding restrictions were clearly observed only with *gonna*; it should be noted that in the case of *gotta*, the data used in chapter 3 did not allow for a concrete investigation of this development (the MICASE corpus does not provide the speaker details, and the SBC data alone is not sufficient). Nevertheless, it seems that a social stigma is attached equally to  $\emptyset$  *got to* and  $\emptyset$  *gotta*), as compared to the socially neutral HAVE to (cf. Tagliamonte & D'Arcy 2007). If the concept of social properties is extended to register and formality, *gonna*, *gotta*, and *wanna* all extend their range of acceptability through registers, but remain restricted in formal speech situations (chapter 4).

One could perhaps argue for a sixth parameter, namely further reduction. The argument would be that, for instance, *gonna* reduces to /ənə/ (as in "I'mena") only when it is an independent item. This conforms to the suggestion made in 2.3. that changes in form and meaning should not be seen as parallel, but as a cycle of reanalysis and reduction. Reductions such as /ənə/ would then be contingent on the conceptual reanalysis of the contraction (*gonna*). That these reductions are consistently found only for *gonna* certainly fits with this picture. Whether this conjecture really stands up to scrutiny would need to be determined by research that specifically addresses this question.

The preceding chapters have shown in full detail the use and development of each contraction in variation with their corresponding full forms. This abundance of information can be summed up by considering how the semi-modal contractions have advanced by each of the above parameters. A rough, and highly simplified, overview of these results is given in Figure 6-1, incorporating in particular the findings of chapter 3 and 4. Based on the results of these studies, the items *gonna*, *gotta*, and *wanna* are placed on a cline from

'Reduction' to 'Emancipation'. This illustrates the status of the contractions and how their development does or does not proceed pari passu on every measure. This is, of course, purely illustrational, as the exact positions on the clines can not be rigidly calculated<sup>110</sup>. Nevertheless, it is a snapshot that shows roughly where each item currently stands.



Figure 6-1: Measuring the Emancipation Effect

A recurring observation in this book has been that *gonna* is not only the most frequent of the contractions (in absolute terms), but also the most advanced in its emancipation. This is reflected in Figure 6-1 on most parameters. Unsurprisingly, in spoken American English *gonna* is now the standard variant. Recall that even in the elicitation experiment, almost half of the *going to* prompts were returned as *gonna*.

The ranking of *gotta* and *wanna* has been less clear; Figure 6-1 shows *gotta* clearly ahead of *wanna* on the gauges of relative frequency, the diminishing of reduction features ('speech-related factors'), and structural divergence ('syntactic properties') - the first two are probably the most important measures - but *wanna* fares better on social status and semantic divergence (its use in deontic modality). Here, some properties of the source forms come into play: what social restrictions *gotta* is still subject to are

<sup>&</sup>lt;sup>110</sup> This would not be feasible, as Figure 6-1 represents the combined results of various analyses of several data sets.

inherited from HAVE *got to*, which originated in vernacular language (Tagliamonte & D'Arcy 2007, Krug 2000). Also, both (HAVE) *gotta* and (HAVE) *got to* are far less frequent than *wanna* in the spoken language, and are declining still, as they become displaced by HAVE *to*. One could therefore say, at least for North American English, that *gotta* is a case of low-frequency emancipation. Perhaps contrary to intuition, this might even spur on the process: when encountering the form *gotta*, a language user has less motivation to link it back to HAVE *got to* because HAVE *got to* is less strongly represented. *Gotta* is still, however, threatened by the expansion of HAVE *to* overall.

As noted above, the emancipation of *wanna* may in large part be seen as following in the footsteps of *gonna* (though at some distance). There are, however, two systematic gaps in the use of *wanna*, namely the third person singular (*he wants to, \*he wanna*) and past tense (*wanted to, \*wannaed*).

Overall and neglecting all complexities and detail, the mnemonic to put this in a nutshell is as follows: "*Gonna* is gonna make it, *gotta* has to catch up, and *wanna* is not sure what it wants".

#### 6.2. A Pathway of Emancipation and the Role(s) of Frequency

Taking another step back from the data (though not turning away from them completely), we can attempt to draw an outline of how lexical emancipation proceeds through several stages. If emancipation is a gradual change in representation from phonetic reduction to a lexical item, there must be intermediate steps on this path, which are related to phonological and morphological variation.

A grammaticalization context is probably a prerequisite for this kind of emancipation process, as the contractions are not capable of expressing the source forms' original, literal meanings (e.g. 'motion' for *going to*) – in their grammaticalized use, however, they have no functional disadvantage despite their reduced forms.

As for the role of frequency, a premise established in chapter 2 is that a certain frequency level of the source form is prerequisite at the beginning of the process (cf. Bybee's (2006) reducing effect of frequency). The 'emancipating effect', then, has been described as an effect of the reduced pronunciation's rising frequency (2.4. and 2.7.). As sketched in 2.7., the import of frequency changes in the course of the process; this idea can be fleshed out with the results from the empirical studies. On a basic level, it is absolute frequency (of the reduced form) that triggers emancipation, and relative frequency (of the reduced versus the full form) that marks the progress of emancipation. This is a

gradual process, but stages on the way can nevertheless be defined. A model of the diachronic emancipation process is proposed in Figure 6-2, showing how the cognitive representation of the reduced form changes over time. This includes the type of frequency assumed to be relevant to each step in the progression. Listed on the right are the factors that condition the variation at each stage.



Figure 6-2: A model of the emancipation process

The first time somebody said "gonna" meaning *going to*, it was certainly an instance of on-line phonetic reduction. This type of reduction is known to be conditioned by speech rate and linguistic (i.e. phonological, lexical) context (viz. the 'reduction features' above), and is more likely to occur in high-frequency constructions.

With the increase of the original construction's frequency (e.g. *going to*), the individual parts (*go - ing - to*) tend to be fused, encouraging a reduced realization ("gonna") that is then no longer purely phonetic, but is also based on

the coalescence of morphemes. This is what I have called on-line morphophonological fusion (given the coalescence, one might also say on-line univerbation). Thus, due to the chunking of a sequence, a morphologically nontrasparent form becomes available, but is not yet conventional at this stage. In the case of *going to*, this stage might be linked to its reported frequency increase in the 19th century (Mair 2004).

When the reduced realization occurs with increasing frequency, language users begin to store it as a variant rather than reconstructing the full form online every time it is encountered. Naturally, this frequency increase is, at least in part, tied to the frequency of the source form. The reduced form is, at this point, a fixed pronunciation variant. Once recognized as such, it may be used in writing to represent (non-standard) speech. The earliest occurrences of *gonna*, *gotta*, and *wanna* in the 19th century<sup>111</sup> may represent this stage (recall that the early instances all represent slang). As a stored variant, the contraction then begins to compete with its source form, and to move away from its status as a reduced form.

When the reduced pronunciation variant gains ground in usage (i.e. if its frequency relative to the source form increases), language users then cease to refer it back to its source form, rather regarding it as a form-meaning pair on its own, i.e. a 'word' in its own right (this is depicted in the representational model in Figure 2.2, chapter 2.4). This is the crucial reanalysis in emancipation. It is here that the 'reduction features' disappear (though not necessarily entirely, as vestigial linguistic features may persist in usage even after they have become obsolete, cf. Hopper 1991). However, at this stage, the new word is still linked to its source form by more than semantic overlap – it is an alternative for certain occasions only, which are largely determined by social factors and the speech situation. This is the situation reflected in the dictionary definitions of gonna and gotta, which label them as informal or colloquial versions of going to and HAVE got to, respectively (see chapter 2.4 above). Of the contractions considered here, it is clear that gonna, gotta, and wanna have largely completed this step, while the analogous forms tryna and needa have not. The foregrounding of relative frequency is particularly relevant to the case of *gotta* - as its development towards independence has reached the stage at which relative frequency is the most important aspect. As such, its emancipation as such is not halted by the declining absolute frequencies of both the source form and the contraction, so long as gotta continues to gain ground on (HAVE) got to.

The final step of emancipation is then for the new word to shed its restrictions and become truly independent. (It will, of course, remain a lexical competitor to its parent item.) When this is taken to completion, the word is used regularly not only in all types of speech situation, but also in all written

<sup>&</sup>lt;sup>111</sup> i.e. the earliest instances in the COHA corpus – note that these are not represented in the Drama&Movie subsection of chapter 4.

genres. We have seen that *gonna* is practically there as far as speech goes, but has not (yet) entered into written English beyond the representation of direct speech.

As this is a gradual and longitudinal process, it should be clear that a linguistic item will not take these steps abruptly, and also does not necessarily do so one after the other. Rather, the stages are consecutive, but overlapping. It is therefore neither possible nor desirable to pin down an item's exact position along the path. As such, the purpose of this chart is to propose a diachronic progression of the emancipation process based on the findings of the studies presented in this book.

These studies also posit that frequency of use is the prime mover in this type of change. In short, it is a reduced form's absolute frequency that establishes it as a (pronunciation) variant, and its frequency relative to the source form that emancipates it from the latter. Thus, out of the members of the *to*-contraction schema, it is the most frequent ones (*gonna, gotta, wanna*) that undergo emancipation (as opposed to, e.g., *tryna, needa, sposta*). Importantly, this rise in relative frequency concurs with other factors in describing the progression of emancipation.

Yet, while frequency evidently plays a major role here, the question of cause and effect (or the chicken and the egg) cannot be answered conclusively: a frequency increase promotes the emancipation process, and the advancing emancipation in turn encourages the use of the new variant, producing higher frequencies. Also, the issue of analogy and type- versus token-frequencies has been touched upon, but not considered in depth. The emancipating contractions gonna, gotta, and wanna are certainly analogous as their simultaneous rise in the 'Woodstock moment' (chapter 4) clearly evinces. Moreover, it seems safe to assume that the schema of to-contraction is based on analogy. Presumably, then, the more frequent representations of the schema (gonna, gotta, wanna) serve as the template for other to-contractions (tryna, needa, sposta). But what does it mean with respect to the schema when its prototypical instantiations become emancipated from the schema? That is, at what point does the frequency of gonna cease to add to the frequency of to-contraction? There might be no definite answer to this question. Moreover, it can only be approached in reverse: If the schema of to-contraction was about to falter, gonna would almost certainly survive (and gotta and wanna would stand a fair chance). This token no longer depends on the frequency of the type it represents.

## 6.3. Context and Contribution of the Results

This research is a study of modal expressions in English, and hence also of grammaticalization. With respect to modality, it elucidates the latest, and still on-going, phase of a development spanning several centuries. This development involves the grammaticalization of the constructions BE *going to* Vinf, HAVE *(got) to* Vinf, and *want to* Vinf assuming modal functions, their increased use and competition with the central modals (*will* and *must*),<sup>112</sup> and finally their contraction to *gonna*, *gotta*, and *wanna*. These contractions have often been noted in the context of grammaticalization, but until now their development and changing relation to their source forms have not been accounted for comprehensively.

Perhaps the most prominent precursor, Krug (2000) notes the increasing frequency of the semi-modal conttractions and shows that their emergence is a consequence of the source forms' high string frequencies (the strings being *going* + *to*, *got* + *to*, *want* + *to*). He also stresses the analogy in form that persists between the resulting contractions, which leads him to posit a class of 'emerging modals'. However, Krug treats the contracted forms only as sub-variants of the full forms, and describes the development leading up to the rise of the contractions rather than considering full and contracted forms in variation.<sup>113</sup> Thus, the term 'emerging modals' entails a strong likelihood for *going to* to change into *gonna*, and likewise for the other forms, but it does not anticipate the emancipating effect as it has been set forth here.

With respect to grammaticalization, this book examines an aspect of the phenomenon that has often been mentioned but rarely explored in detail, namely the change in form of grammaticalizing items. This change is perhaps as much a consequence of grammaticalization as it is part of the on-going process (see 2.6.).

By developing the concept of lexical emancipation, the present work makes a contribution that goes beyond both the study of modals and modality and grammaticalization. If the proposal of emancipation as a frequency effect is correct, then it falls within the general effects of frequent use (Bybee 2006). In particular, it is a consequence, and a twist, of the reducing effect of frequency, as emancipation begins where reduction ends.

Thus, the proposal of an 'emancipating efffect' of frequency also draws a connection from philologically rooted, systemic language description to cognitive approaches to linguistics, as the observed change in usage in the speech community leads to a change in the emancipating item's mental

<sup>&</sup>lt;sup>112</sup> want to perhaps did not directly compete with *willan* in the history of English, but has moved into volitional modality as the latter moved out (cf. Aijmer 1985, Verplaetse 2003).

<sup>&</sup>lt;sup>113</sup> Krug (2000) does probe into contraction rates with respect to age, region, and sex in British English, but as a phonological innovation rather than a bona fide variation, and not with a multivariate design.

representation in the individual speaker. The issue of how the contracted forms are represented in the language user's mind is thus described here with reference to theories of lexical access (see 2.5.1.). In terms of grammatical theory, the concept is compatible with constructional approaches to linguistic change that have recently emerged (Trousdale 2012, Fried 2013, Hilpert 2013), since a gradual emancipation necessarily assumes a gradient distinction between lexicon and grammar. Moreover, as *gonna/gotta/wanna* are phenomena linked to grammaticalization, this analysis offers a way of considering changes in the status of forms, thus moving beyond descriptions of grammatical functions, and perhaps in the direction Trousdale (2012) envisages for constructional approaches to grammaticalization phenomena: "embedding grammaticalization within a constructional framework necessitates equal attention to both form and function" (193).

More generally, Hilpert (2013) demands that "[t]he investigation of how constructions change over time in a corpus should be carried out in such a way that observed frequencies can be linked to issues of linguistic theory, such as the status of constructions as mental representation [...]" (207). Even without an explicitly constructional framework, this is one of the primary goals of the studies presented here, and, I hope, is met with sufficient success to inform future investigations in similar areas of language change.

#### 6.4. Outlook

It is customary at this point to pen the formulaic appeal: "more research needs to be done". Yet, with respect to the general topic of this book - modals and modality in English - this cannot be stated without qualification. This area of language has been heavily researched over the past few decades, and for good reasons, being a "hotbed of changes" (Schulz 2010: 7). Moreover, this research has yielded meaningful results, and thus one might begin to wonder how much more there is still to be learned from studying it further. The research presented here was therefore designed to add a new piece to the puzzle as well as reveal new possible lines of research. With the exception of formal syntactic accounts of to-contraction (see 2.1.3), there have so far been very few studies that expressly deal with the contracted forms of semi-modals (but note Berglund 2000, Berglund & Williams 2007). This work begins to fill this gap, in spite of being limited to American English. What remains to be seen is therefore how the variation of full and contracted semi-modals presents itself in other, generally more conservative varieties, such as British English or Australian English, and also in the less standardized "(post-)colonial" Englishes. The point
of interest here lies in the possibility of comparing pathways of development across varieties, and to see in what ways the more conservative varieties show restrictions on the use of contractions (and in what ways they don't). On the other hand, the "colonial" varieties may be less reluctant to integrate the contracted forms, or they might have failed to adopt them to begin with. In this line of research, the cognate modality markers in English-based creoles (e.g. *go'n* and *gwine* from *going to*, cf. Facchinetti 1998) would be of special interest.

The relation of the concept of lexical emancipation to that of grammaticalization is also worth exploring in greater depth. By its core definition, grammaticalization is concerned with changes in the meaning/ function of a given form (typically, a form's shift from "a lexical to a grammatical or from a less grammatical to a more grammatical status", Kuryłowicz 1965: 69), rather than changes of the form itself. Emancipation, on the other hand, is more a matter of form change than meaning change. Nevertheless, phonological erosion, the necessary precursor of emancipation, has been recognized as an element of grammaticalization (Heine 1993, Lehmann 2002).

Following from this, the emancipating effect is presented here as a consequence of grammaticalization. But, there is no logical necessity for emancipation to only occur in grammaticalization contexts. Emancipation and the coalescence that precedes it are predominantly frequency effects, and while grammaticalization certainly affects the frequency of the relevant form, frequency need not be tied to grammaticalization. Naturally, the extent to which emancipation occurs outside of grammaticalization depends on how wide a definition of grammaticalization one wants to adopt. For instance, Wischer (2011) notes that German heute ('today'), originally a contraction of \*hiu tagu (this-INSTRUMENTAL day-INSTRUMENTAL), is presented as a case of grammaticalization by Meillet (1912), "although it meets all requirements of what is traditionally called 'lexicalization': phonetic reduction, morphological demotivation, and loss of semantic compositionality" (357). In this sense, lexical emancipation (of which heute is a case in point) is thus much closer to lexicalization than grammaticalization. In the theoretical discussion in 2.6.1. I proposed that the emancipation of gonna, gotta, and wanna can be seen as instances of lexicalization embedded in a grammaticalization process. Generally, it would seem that cases of grammaticalization are particularly prone to entail emancipation, but this too is not a strictly necessary association, and it is not clear to what extent this kind of development is part of a general drift in language change.

Apart from studying modality or properties of grammaticalization, the concept of lexical emancipation opens the door to a wide range of further research. I have shown in the introduction (chapter 1) that many items can be found, in English as well as other languages, that appear to be the outcome of emancipation processes. The primary question then becomes, of course, how generally valid is the model of emancipation outlined here?

Although in historical linguistic research along these lines, the speechrelated and phonological dimension is largely out of reach, a new form's progress could nevertheless be studied in written language longitudinally, perhaps through different registers, over a long time-span (chapter 4 partly serving as a precedent). Also, the aspect of emancipation from a paradigm could be explored in this way, i.e. posing the question of how *never* and *neither* survived the restructuring of the negation pattern. Furthermore, it would be interesting to see to what extent cases of morphological fusion that do not involve phonological reduction (such as *perhaps, maybe*) are similar to the contraction cases presented here. In a similar vein, one could ask whether parallels can be found between different languages with respect to emancipating items of corresponding denotations (I have mentioned *today* and the corresponding German *heute*, which might be a promising starting point).

Another aspect that we need to learn more about is the issue of morphological compositionality. If the starting point of contraction (and hence of univerbation, see 2.6.1.) is non-compositional access to a sequence, this begs the question how frequent or how conventional a sequence has to be in order to be accessed non-compositionally? This is probably a gradient cline, and the paradigm of verbs taking a *to*-infinitive could prove a fertile soil fur further investigation. For example, if listeners tend to interpret a spoken "going to" as *gonna*, but a "tryna" as *trying to* (cf. chapter 5), then how well do they accommodate low-probability contractions such as "allowda" for *allowed to*, "attemda" for *attempt to* or "beginna" for *begin to*, and is this strictly contingent on the frequency of the string or are there other determinants?

On the methodological side, I would like to point out two innovative (but not unprecedented) approaches that have proven fruitful in the present work, and so may serve as apt models for similar research. One is the diachronic multivariate approach taken in chapter 4, namely to investigate changes in the factors of variation by modeling them as interacting with a time variable. This method may lend itself particularly well to cases in which a frequency shift occurs seemingly across the board (rather than in specific contexts), and where changes in the determinants of variation are expected (as in the study of contractions in chapter 4).

Secondly, the combination of corpus studies and a psycholinguistic experiment has yielded insights that could not haven been obtained by either of

the methods alone. Here, the findings of a corpus study were used as a basis for the experiment design. This approach may be taken as a model for other studies in which the cognitive aspects of variation are of importance, or more generally, for investigations of the relation of language production and language perception. In particular, speech rate and collocation frequency appear to play similar roles in the production of reduced forms, but different ones in perception – a point which invites further investigation.

Thus, despite falling into a well-researched area, this book makes a novel contribution to the study of language change, but also opens up new lines of potential research.

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## Zusammenfassung in deutscher Sprache

Untersuchungsgegenstand der vorliegenden Arbeit sind die verkürzten Formen (Kontraktionen) der englischen Modalausdrücke ('semi-modals') BE *going to*, HAVE *got to* und WANT *to*. Die Kontraktionen sind in der gesprochenen Sprache häufig und zeigen sich in den Schreibweisen *gonna*, *gotta* und *wanna*. Sie werden im Nordamerikanischen Englisch untersucht.

Den Hintergrund der Arbeit bildet die Grammatikalisierung der 'semi-modals', die mit einem Anstieg der Gebrauchshäufigkeit einhergeht. Diese erhöhte Frequenz fördert phonetische Reduktion (z.B. von "going to" zu "goinde" zu "gonna"). Das Auftreten der Kontraktionen ist also zunächst eine Konsequenz aus diesem Frequenzanstieg ('reducing effect of frequency', Bybee 2006). Doch das ist nicht das Ende der Entwicklung: Die Reduktionsformen *gonna, gotta* und *wanna* sind zunehmend häufig und üblich, sodass sie begonnen haben, sich als eigenständige Wörter zu etablieren und von ihren Ausgangsformen konzeptuell unabhängig zu werden. Dies ist eine Folge der Häufigkeit der Kontraktionen selbst. Es ist also ein Frequenzeffekt, der hier als 'Emanzipierungseffekt' ('emancipating effect') ausgeführt wird. Als 'sich emanzipierende' Elemente stehen die Kontraktionen in Variation mit ihren Ausgangsformen, und diese Variation ist ursprünglich phonologischer, aber mit zunehmender 'Emanzipation' mehr und mehr lexikalischer Natur. Untersuchungen dieser Variationen bilden den Hauptteil dieser Arbeit, wobei der Emanzipierungsprozess gezeigt wird.

Kapitel 2 erläutert den theoretischen Hintergrund der Arbeit und entwickelt das Konzept der 'lexikalischen Emanzipation' (lexical emancipation'). Dieses wird an der Schnittstelle von Grammatikalisierungstheorie und kognitiven Modellen der Sprachverarbeitung und -produktion verortet. Die 'Emanzipierung' verkürzter Formen ist eine Veränderung ihrer mentalen Repräsentation.

Kapitel 3 beinhaltet eine Variationsstudie im gesprochenen Nordamerikanischen Englisch (Santa Barbara Corpus of Spoken American English), die eine Reihe sprecherbezogener und intralinguistischer Faktoren berücksichtigt und durch den Vergleich älterer und jüngerer Sprecher die Veränderungen in der Variation misst. Dabei zeigen *gonna, gotta* und *wanna* einen deutlichen Anstieg in der relativen Frequenz (relativ zur jeweiligen Ausgangsform), wohingegen weniger konventionalisierte Kontraktionen, "tryna" (von *trying to*) und "needa" (von *need to*) keine so deutliche Entwicklung haben. Im Falle von *gotta* ist jedoch die absolute Gebrauchshäufigkeit rückläufig, da die Variante HAVE *to* die Konstruktion HAVE *got to/gotta* verdrängt.

Die Emanzipation zeigt sich besonders deutlich bei *gonna*: Typische Reduktions-Faktoren wie hohe Sprechgeschwindigkeit und häufige Kollokation (hier mit dem Subjekt: *I'm going to/gonna*) bedingen zwar die phonetische Reduktion zu "goinde" oder "ena", nicht aber den Gebrauch von *gonna*. Zudem bestehen soziale Einschränkungen für *gonna* (Bildung, regionale Varietät) nur in der älteren Generation – die Kontraktion wird also "gesellschaftsfähig". Eine leichte Tendenz zu semantischer Divergenz ist bei *gonna* und *wanna* zu erkennen.

In Kapitel 4 werden die Variationen zwischen den Kontraktionen und ihren Ursprungsformen diachron untersucht, anhand von Bühnenstücken und Filmskripten aus dem zwanzigsten Jahrhundert (Corpus of Historical American English). Hier zeigt sich ein drastischer, gleichzeitiger Frequenzanstieg aller drei Kontraktionen, relativ wie absolut, in der zweiten Hälfte der 1960er Jahre. Mit Bezug auf die gesellschaftlichen Umwälzungen jener Zeit wird dies als 'linguistic Woodstock moment' bezeichnet. Untersuchungen der Veränderungen der Variations-Faktoren vor und nach dem 'Woodstock moment' ergeben, dass Emanzipation sich in quantitativen Verschiebungen der Effekte zeigen lässt. So kommen *gonna* und *wanna* in zunehmend längeren (komplexeren) Sätzen vor. Die Unterschiede zwischen Kontraktion und Vollform in Bezug auf Register und Kollokation (vorangehendes Element) nehmen generell ab. Außerdem sind die Kontraktionen an Phrasengrenzen stark präferiert, was als syntaktische Divergenz angesehen wird.

Aus diesen beiden Korpusstudien ergibt sich eine Liste von Indikatoren für die oben beschriebene Emanzipation einer verkürzten Form:

- Anstieg der relativen Frequenz (relativ zur Ausgangsform)
- Abnahme von Reduktionseigenschaften
- Abnahme sozialer Restriktionen
- Semantische Divergenz (von der Ausgangsform)
- Strukturelle Divergenz (von der Ausgangsform)

Auf der Grundlage dieser Ergebnisse beschreibt Kapitel 5 ein psycholinguistisches Experiment zur Wahrnehmung von *gonna* und *gotta* im Vergleich zu den entsprechenden Vollformen. Auch hier zeigt sich eine höhere Akzeptanz von *gonna*, vor allem in der jüngeren Generation. Interessante Ergebnisse erzielt vor allem eine erhöhte Sprechgeschwindigkeit (als Faktor für phonetische Reduktion, s.o.). Schnell gesprochenes "going to" und "gonna" wird ebenso gut unterschieden wie in Normalgeschwindigkeit, die Zwischenform "goinde" jedoch wird öfter als *gonna* wahrgenommen. Das zeigt, dass *gonna* eine weitgehend unabhängige Form ist, wobei die Entwicklung durch Reduktion noch nachvollzogen werden kann. Dagegen wird "got to" in hoher Sprechgeschwindigkeit oft als *gotta* wahrgenommen. Ein anderer 'Reduktions-Faktor', die häufige Kollokation, zeigt einen konträren Effekt, so dass aus gehörtem "I'm gonna" und sogar "I'mna" oft *I'm going to* rekonstruiert wird. Es scheint also, dass Hörer in frequenten Kollokationen eine Reduktion erwarten und (hyper-)korrigieren, wohingegen bei schnell gesprochener Sprache keine solche Korrektur stattfindet.

Ein weiteres Ergebnis des Experiments ist, dass *gotta* in epistemischen Kontexten besser erkannt wird, ebenso wie das Vorhandensein des Auxiliars HAVE. Dies lässt vermuten, dass epistemische Modalität eine semantische Nische darstellt, in der sich (HAVE) *gotta* etabliert. Insgesamt ist, anhand der fünf oben genannten Kriterien, *gonna* die am stärksten emanzipierte Form. Anhand der beschriebenen Ergebnisse lässt sich die Emanzipation einer verkürzten Form als ein Prozess beschreiben, von spontaner phonetischer Reduktion über morpho-phonologische Fusion zu einer gespeicherten Aussprachevariante, von dieser über eine eingeschränkt verfügbare lexikalische Variante zu einem eigenständigen 'Wort'. Diese Darstellung des Emanzipationseffekts hat generell Anspruch auf Gültigkeit in anderen, ähnlichen Phänomenen. Sie beschreibt einen allgemeinen Mechanismus im Sprachwandel, und kann somit künftigen Studien als Grundlage dienen und überprüft werden. The current restructuring of the English modal system has long been noted as an ongoing language change process. Semi-modal constructions such as BE *going to* and HAVE *got to* are textbook cases of grammaticalization. As grammaticalization comes with a rise in frequency, these semi-modals are also typical examples of the 'reducing effect' of frequency, which leads to the contracted forms *gonna* and *gotta*. These forms have in recent times become conventional in spoken English.

This book presents the first comprehensive corpus-based study of the use and development of the semi-modal contractions *gonna*, *gotta* and *wanna*. Focusing on American English, it considers synchronic data from spontaneous spoken language as well as diachronic data from a corpus of speech-purposed writing. The findings are complemented by data from an elicitation experiment, yielding insights into how listeners perceive these forms.

Beyond documenting the use of the contractions and full forms in American English, the book provides an investigation into the mental representation of the contractions between phonetic reduction and lexicality. An 'emancipating effect' of frequency is proposed by which the contracted forms move from reduction to lexicality, that is, they are increasingly used and perceived as lexical items independent of their source forms.

David Lorenz is a researcher and lecturer in English Linguistics at the University of Freiburg. He received his M.A. (Magister Artium) degree in Linguistics and English Language & Literature from the University of Stuttgart in 2009. In the same year he joined the research training group "Frequency Effects in Language" at the University of Freiburg. In 2011 he spent three months as a visiting researcher at the University of Victoria. He received a doctorate degree from the University of Freiburg in 2013. This book results from his doctoral dissertation, submitted in September 2012.



