CONSTRAINTS ON PERFECT AUXILIARY CONTRACTION:

EVIDENCE FROM SPOKEN AMERICAN ENGLISH

by

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(Under the Direction of Lewis C. Howe)

ABSTRACT

This study investigates the use of auxiliary contractions compared to the use of the full form in the Santa Barbara Corpus of Spoken American English to consider comparisons between the linguistic factors of preceding phonological and grammatical environment, the presence of negation, stativity, voice, temporal reference, and clause type, among other parameters. Evidence is presented that contracted forms are predicted by all of the above. The paper considers linguistic features of speech and semantic features of perfect constructions that influence contraction. The preceding word has the strongest affect on contraction, for both semantic and phonological reasons. Evidence of grammaticalization of the perfect is found in the lower rates of reduction among older forms. The study sheds light on the predicament of intermediately contracted forms and how to treat them in the future.

INDEX WORDS: Language variation, Contraction, Perfects, Multivariate analysis

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CHAPTER 1

INTRODUCTION

Contraction is a widespread feature in English, especially in speech. The complex process of auxiliary contraction can be analyzed quantitatively on many levels, though until recently (Barth 2011, MacKenzie 2010 & 2011), the phenomenon has mainly been investigated according to authors' intuitions (Zwicky 1970, Kaisse 1983, and others) instead of using a corpus of natural speech. Earlier accounts focus chiefly on phonological, morphological, or syntactic perspectives, but auxiliary contraction can also be analyzed within the domain of sociolinguistics and language variation. Labov (1972) initiated the study of the variable use of contractions in English through his research on deletion of the copula in Standard English and in African American Vernacular English, and since then, others have begun to follow suit. The trend has been to focus on contraction of the copula since the auxiliaries are not as frequent in speech and therefore more difficult to study (but see McElhinny 1993).

Previous research on auxiliary reduction has shown that auxiliaries generally contract at different rates, and these rates of reduction often vary between individual studies. This study provides a look at a subset of auxiliaries, the perfects *have, has,* and *had*, and relates their patterns of use to those found in previous studies of contraction and to the semantics of perfect constructions. Specifically, I seek to determine what linguistic variables favor the use of a contracted form over a full form. To research this topic, I will consider multiple linguistic factors of language that are thought to influence speech, including grammatical subject person and number, preceding phonological environment, host of contraction, negation, perfect

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construction type, stativity of the VP, and co-occurring temporal adverbials. Most of these factors have previously been motivated in the research on the copula and here will be applied to the perfect auxiliaries. Sociological and other language external factors are not explored here (see Fredriksen 2011, Yaeger-Dror 1997, 2002, and others).

Perfects have been chosen for this study in order to focus on one subpart of the contraction domain and to determine if patterns of contraction with perfect auxiliaries can shed light on the process of grammaticalization in perfect constructions since reduction is often a characteristic of this process (see Bybee et al. 1994). Perfects develop historically from resultatives and often generalize further to become perfectives.[1] Cross-linguistically, the function of a perfect is to establish current relevance of a past event or situation. English perfects are typically classified as one of four types (Comrie 1976:56-61) which can be influenced by semantic features of the verb, such as stativity and duration. This paper discusses the link between the features of the English perfect and their interaction with verb semantics within the scope of grammaticalization through phonological reduction of the auxiliary. Contraction is not a uniform process across all target constructions, so by highlighting perfects, this study will be able to take into account factors that would not be operational within other classes.

The goal of this study is to add to the knowledge of English auxiliary contraction through a corpus-based study of perfect constructions in natural speech and to describe the patterns found within. I will provide a model of perfect auxiliary contraction that accounts for these patterns which are evident in spoken American English. While contraction is not an identical process across all auxiliary constructions, this model will show that factor groups which have been found significant in previous research, including the host (usually subject) of contraction and

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[1] In this study, I am referring specifically to what Giacolone Ramat refers to as *have*-perfects, being a "rather uncontroversial European areal feature" (2008: 133; see also Drinka 1995 & 2003). The perfectivization of *have*-perfects is well-attested in European languages--e.g., Modern French, German, and Italian.

phonological environment, are also significant in the selection of a contracted perfect form. This study also explores the special properties of perfects such as current relevance, duration, and stativity that can influence reduction. The data analyzed in this study have been extracted from the Santa Barbara Corpus of Spoken American English (Du Bois et al. 2005), representative of a wide variety of speakers and interactions from all over the United States, to statistically analyze the linguistic factors that significantly predict the use of contraction over a full form.

The next chapter describes the previous research done on the history, semantics and grammaticalization of the perfect. The second part of Chapter 2 summarizes variationist studies on contraction. The methodology and constraints of the current study are detailed in Chapter 3, followed by a presentation and discussion of the results in Chapter 4 and the conclusion in Chapter 5.

CHAPTER 2

PREVIOUS RESEARCH ON PERFECTS AND CONTRACTION IN ENGLISH

Contracted words are phonologically reduced forms that cliticize to a host. Orthographically, they contain an apostrophe signifying the omission of one or more letters. In addition to the copula, English auxiliaries that can be contracted in Standard English are *has, have, had, will, would, is, are, am, does,* and *did.* The contraction of the present and past perfect auxiliaries *have, has,* and *had* is examined here. Present perfects are commonly researched in cross-linguistic literature on tense and aspect systems and are used when referring to past situations with present relevance. This notion of current relevance is a defining element of a perfect in addition to incompatibility with narrative sequences (Lindstedt 2000:366).

2.1 *Perfects in English*

The most-cited and most agreed-upon feature of perfect constructions cross-linguistically is their expression of a past state, event, or action as considered from the present point of view and relevant to the present situation; that is, their 'current relevance' of a situation prior to the reference and speech time (Comrie 1976:52, Bybee et al. 1994:61, Carey 1995:83, Lindstedt 2000:366, Schwenter & Cacoullos 2008:4, Howe Forthcoming:33, among others). Lindstedt further characterizes perfects as expressing "detachment from other past facts"; that is, the element of non-narrativity (2000:366). Instead, it is the perfective aspect that is used for narrating discrete temporally-bound situations in the past. Perfectives, in contrast to perfects, do

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not implicate a relationship between the past speech event and the speech time (Howe Forthcoming:4).

(1)   a. *Perfect*: I'**ve** just **seen** some of the looks from some of the people. (SBC014)

          b. *Perfective:* I **saw** a fashion show on TV (last night).

Bybee et al. (1994) use the term *anterior* instead of perfect to avoid terminological confusion with the perfective. Essentially, an anterior "signals that the situation occurs prior to the reference time and is relevant to the situation at reference time" and includes past, present, and future perfects, though past and future perfects possess different sets of properties from present perfects, particularly with regard to current relevance (Bybee et al. 1994:54).

The present perfect auxiliaries, *have* and *has*, introduce four types of perfect "types", traditionally described by Comrie (1976) as the perfect of persistent situation, perfect of experience, perfect of result, or perfect of recent past. More recent literature refers to these as the continuative or durative perfect, experiential perfect, resultative perfect, and hot news or recent past perfect (Howe Forthcoming:30-31 and others). Figure 2.1 exemplifies each type with contracted and full-form tokens from the Santa Barbara Corpus (SBC).

Perfect Type	Examples
Continuative/Durative	(2) And [I] **have** basically **been** here ever since. (SBC029) (3) So you'**ve lived** in New York all this time? (SBC047)
Experiential	(4) Margaret's speech to Henry is one of the most passionate things I **have** ever **read**. (SBC023) (5) Is this a dog we'**ve seen** before? (SBC015)
Resultative	(6) Free will is not extinct though it **has contracted** a paralysis. (SBC056) (7) Edna**'s left** our church; did you know that? (SBC044)
Hot News	(8) Put to death sin because it **has died**. (SBC006) (9) The chair**'s died**. (SBC052)

Figure 2.1 The four cross-linguistic perfect types

Some approaches distinguish between a perfect type referred to as the current relevance perfect and experiential perfects (Lindstedt 2000, among others). A current relevance perfect is a perfect "in its most central, prototypical meaning" and "shades into […] the experiential perfect" (Lindstedt 2000:368-69), as in 10, from Lindstedt (2000:369). 10a shows current relevance in that it can answer the question of where Mary is at the speech time. 10b, however, refers to an experience that Mary has had, and it is not required that Mary currently be in Paris.

(10)   a.   Mary **has gone** to Paris. *Current relevance perfect*

       b.   Mary **has been** to Paris. *Experiential perfect*

Not all types arise in all languages; many languages have perfects that lack one or more of these readings. As Miller explains, "ambiguous examples, or at least examples whose interpretation is difficult to determine, are not rare" (2000:330). The use of perfects with temporal adverbials further complicates the clear classification into one of these types.

In fact, perfects across languages do frequently co-occur with "past-denoting adverbials" (Howe Forthcoming:30). Schwenter & Cacoullos (2008:15-16) detail what types of adverbials favor and disfavor the choice of perfect constructions over perfectives, seen in Figure 2.2. Adverbials disfavoring perfects, such as *when* and *after* are typically used in narrative sequences or in reference to any specific time in the past (Van Herk 2003:4), while the favoring adverbials, such as *since* and *always,* relate past situations to the current speech time (Van Herk 2004:2).

Adverbials of the first type rarely co-occur with perfects in English because they "do not have the option of overlapping with the moment of utterance" (Howe Forthcoming:45). Typically, however, perfects behave variably with respect to use with the different types of temporal adverbials; for example, in German, there is no restriction on the use of a perfect with a specific past adverbial, as seen in 11.

Adverbial Types Favoring Perfects	Adverbial Types Disfavoring Perfects
Proximate (n=26) *now, lately, recently, this week, this month* Frequency (n=111) *sometimes, each year, __ (#) times, always, never, a lot, a little* Durative or Continuous[2] (n=125) *since, already, still, for a long time, all along, a while, during X time*	Specific (n=0) *yesterday, on Monday, at noon, when, in 2010* Connective (n=12) *before, afterward, in the end, finally*

Figure 2.2: Temporal adverbial types (adapted from Schwenter & Cacoullos 2008)

(11)　　　Ich habe　gestern　mit　einem Kollegen gesprochen.

I　have.1 yesterday with a　colleague speak.PARTICIPLE

'I spoke with a colleague yesterday.'

In dialects of some languages like German and French, the perfects have grammaticalized beyond their typical use to co-occur with narrative sequences and are sometimes even preferred over the perfective simple past forms. At this point, according to Lindstedt, it has "ceased to be a perfect" (2000:371). Narration is cross-linguistically more often accomplished via the simple past, as in English. Schwenter & Cacoullos describe the perfect as an "unstable category" because "it tends to become something else, such as a perfective or general past tense" (2008:12).

There have been many variationist studies on the broadening function of the perfect over time. Cross-linguistic studies (Bybee et al. 1994, Carey 1995) demonstrate that current 'have' perfects develop historically from resultative constructions, the oldest type. Carey (1995) illustrates the shift from the resultative Old English '*have* + participle' construction to perfect as the link between the event and the result becomes less dependent on the semantics of the verb participle and more dependent on the speaker's judgments (1995:84). Frequency data from

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[2] See Bertinetto and Delfitto (2000:195-205) for a discussion of the behavior durative temporal adverbials with respect to actional and aspectual values.

Carey's corpus analysis of Old English texts clearly shows that in OE, the '*have* + participle' was a resultative, not a perfect (1995:85-87). Resultatives are narrowly tied to the semantics of the participle, so this construction was limited to telic verbs; that is, verbs that bring about a goal or result. Resultatives are incompatible with stative verbs, which are largely absent in OE. By early Middle English, '*have* + participle' has become a perfect with an emphasis on the current relevance of a past event, compatible with stative verbs and temporal adverbials (Carey 1995:85-88). Compare 12a and 12b below, where the subject of 12a signifies a final resultant state of a completed process and is used in a possessive context. The resulting modern perfect construction, 12b, sees a change in word order. The utterance now expresses the proposition denoted by the subject noun, and the participle is part of the verb rather than an adjective modifying 'letter' (Bybee et al. 1994:68).

(12)   a. I **have** the letter **written**.

         b. I **have written** the letter.

The semantic consequence of the shift to perfect from resultative is an expansion of meaning from 'current result' to 'current relevance' and broadening of use to include verbs of other semantic types in addition to change-of-state verbs (Bybee et al, 1994, Carey 1995. Lindstedt 2000:368). Structures like 12a still exist, shown in 13, but are excluded from this analysis because they categorically occur in their full forms in American English.[3] In other words, they do not exist in a contracting environment and are therefore invariable.

(13)   They did **have** an autopsy **done** on her. (SBC019)

Lindstedt (2000:370) remarks that the experiential meaning of the perfect is historically secondary and derives from the current relevance context. The experiential perfect is a way to

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[3] Section 4.3 returns to the dialectal differences in resultatives. In other varieties of English, 12a is a contracting environment. See Miller (2004) for a discussion of possessive resultatives in Scottish English and English English and Ritz and Engel (2008) for an analysis of the present perfect in Australian English.

refer to a nonspecific past time and is more tense-like than aspect-like compared to the current relevance perfect (2000:369). In example 14 (Howe Forthcoming:102 example 37), the experiential reading illustrates the tense-like interpretation.

(14) a. I have lived in Athens for four years.

Continuative: the speaker still lives in Athens at the time of speech[4]

b. I have lived in Athens for four years. *(I've also lived in New York for two and Los Angeles for three.)*

Experiential: the speaker lived in Athens at some time before the moment of speech for a period of four years but does not live there now

Lindstedt hypothesizes that the "degree of incompatibility of specific time adverbials with the perfect in a particular language shows to what extent it has become a dominantly experiential form and, therefore, a kind of tense" (2000:370). Gradually this may lead to the weakening of the 'current relevance' reading, which Lindstedt believes may be happening in American English (when compared to British English) (2000:370-71).

The further relaxing of the current relevance requirement in some languages eventually leads the perfect developing into a general past tense. Lindstedt (2000:371) observes that in situations where this has occurred, the past has developed from the current relevance perfect.[5] Generalizations of meaning and widening of use are typical of grammaticalization. Bybee et al. 1994 explain the change from perfect to simple past and perfective as a weakening of the current relevance component due to overuse so that eventually "the hearer infers only past or perfective

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[4] Note that the perfect is the only construction in English which allows a continuative interpretation. This utterance is ungrammatical in the present (Howe Forthcoming:100 example 30b):

(i)   *I live in Athens for four years

See Howe Forthcoming for further discussion.

[5] Lindstedt (2000:372) remarks that it is difficult to tell if there is a similar path from experiential perfects to a general past. He knows of no evidence for this type of change in American English, but notes that it is a typological possibility in Slavic.

action from the anterior and no sense of current relevance" (Bybee et al. 1994:87), as seen in the German example 11 above. Comrie (1976) agrees, noting that the key part in the development of a perfect to a perfective is the "[g]radual relaxation of the degree of recentness" required for its use (1976:61).

Van Herk (2003) discusses the verb semantics in the choice of the present perfect and preterite using corpus data across four time periods in the history of English. His data and results support the claim in the literature that the area of verb semantics is one place where behavioral changes of the present perfect can be observed. He finds that "the factors affecting the choice of the [present perfect] hold no matter what" but narratives (preterites) include many factors that are not associated with and disfavor present perfects (2003:3). He goes on to say that this might be one reason that simple/narrative past is one of the last places cross linguistically to yield to the incoming present perfect (2003:3).

Because certain meanings arise before others, there may be patterns of reduction that are denser or more complex in the new experiential types compared to the older resultative types. As a construction acquires newer uses, there is usually a corresponding amount of concomitant reduction. Considering the history of the grammaticalization of the perfect, older uses are hypothesized to occur with lower rates of contraction.

2.2 *Contraction as a Variable*

In prescriptive writing and speech, contractions are generally regarded as informal or stylistic. In school, students are taught never to use contractions in formal writing because they are not "correct" English. Indeed, the APA Style Quick Reference Guide states that "scholarly papers do not use contractions, e.g. *can't*, *won't*. It would be preferable to say *cannot* or *will not*"

(*APA*:9). Contraction is, however, a widespread feature of casual (and not-so-casual) English speech. The process of contraction involves either syllabification of a contracted auxiliary to a host, usually a pronoun or noun, or phonological reduction in the form of vowel reduction to schwa and deletion of the initial consonant of the auxiliary. The literature on contraction is in some disagreement about a definition of the process and what is included; some adhere to the single-syllable definition where *we've* would count but *people've* would not (Labov 1972), and others argue that the predictable forms of reduction should count as contraction because they vary systematically and are clearly not full forms (McElhinny 1993). MacKenzie proposes a tripartite surface realization (full – intermediate – contracted) with an underlying bipartite distinction in which intermediate forms are either full or contracted forms that undergo separate morphological or phonological processes (2011:9). This study follows McElhinny in classifying contractions as either full or contracted based on no reduction, and some or full reduction. I will make mention of intermediate forms in instances where it is pertinent to separate contracted forms and intermediate forms.

The seminal study of variable constraints on contraction in English is Labov's 1972 comparative analysis of English copula contraction and deletion in Standard English and Black English (now AAVE). Labov outlines the possible and impossible environments for contraction, which he defines as the reduction of a single consonant to one syllable after deletion of the word initial schwa. He is chiefly concerned with the copula, which has no realizations with an initial consonant, but notes that "*has, have,* and *had* will be included [in the rule describing contraction] after a general rule removes the initial *h*" (Labov 1972:80). Labov finds that subject type is a strong predictor of contraction; contracted forms of *is* are more frequent following pronouns than noun phrase subjects. The invariable and impossible environments for contraction and deletion

are not particularly relevant to this study which focuses on finding patterns in the possible contexts. Labov's sample size of white speakers was small compared to speech samples from the black adolescent peer groups the Jets, Cobras, and Thunderbirds he collected.

McElhinny (1993) reexamines contraction of the copula, following Labov (1972), and includes an analysis of other English auxiliaries. She focuses on 'White Vernacular English' to compare her results to Labov's study of AAVE and to explore the relationship between WVE and AAVE. She coded for four linguistic factors, both preceding and following phonological and grammatical environments. The present study not concerned with following grammatical and phonological environment since these were coded for in Labov and McElhinny to determine the extent to which AAVE is affected by the Creole past. Additionally, McElhinny did not find the following environments statistically significant. She also coded for speaker to determine if there were significant differences between individuals. Her results are largely comparable to Labov's; pronouns strongly favor contraction while nouns do not. Preceding phonological environment does significantly affect contraction of the auxiliaries; preceding words ending in vowels favor contraction of auxiliaries and ending consonants do not. To compare her results to Labov, McElhinny initially follows the definition of contraction as "the removal of a word-initial schwa before a lone consonant to obtain a single syllable" (1993:374), plus h-deletion. She later criticizes the definition of contraction set forth by Labov and says that considering contraction as phonological reduction to a single syllable is inadequate when dealing with auxiliaries other than *is* because there are other systematic, predictable forms of reduction that are clearly not full forms, exemplified in 15 and 16 below.

(15)   The **people've** gone to church.

(16)   Also, what **it'd** done is it caused him to be introverted. (SBC006)

These do not form a single syllable and do not qualify as contraction by Labov's definition, but they are "wholly predictable forms, given English phonotactics" (McElhinny 1993:392). McElhinny proposes that there are two types of contraction: contraction post-vocalically as defined by Labov, and the other predictable forms of post-consonantal cliticization (1993:392). McElhinny briefly mentions that some literature analyzes contraction as a tripartite distinction, and these studies adopt the concept of full and contracted forms as alternating allomorphs, rather than contractions being derivations of full forms (see Kaisse 1985, Inkelas and Zec 1993, MacKenzie 2010, 2011). This study assumes this approach.

Zwicky (1970) bases his extensive theoretical study on his and his colleagues' intuitions but analyzes in great detail the environments in which auxiliaries can contract. He, too, looks at the preceding and following phonological and grammatical environments and hypothesizes that the following environment will have no significant effect on perfect auxiliary contraction. Using the definition of contraction as reduction to a single syllable, he claims that *has* can contract after any environment, *have* can contract only after a pronoun, and *had* contracts only after a vowel.

Bailey and Schnebley (1988) compare auxiliaries in the speech of former slaves, folk speakers in Texas, and informants from the Linguistic Atlas of the Gulf States (LAGS) but are chiefly concerned with deletion rather than contraction. Bailey and Schnebley combine *has/have/had* (and *will/would*) when reporting their results, which does not allow us to see the properties of each auxiliary alone. They do, however, find that preceding pronoun has a strong effect on deletion and find frequency differences in the occurrence of contraction and deletion before main verbs and before *be*.

Barth (2011a, 2011b) revisits reduction of *is*, *am*, and *are*, focusing on copular, progressive, and passive constructions. She discusses reduction in terms of grammaticalization

and notes that grammaticalization is sometimes accompanied by phonological reduction of the grammaticalized word. She cites the shift of English lexical *will* 'want' to future auxiliary *will*, shown in 17 (adapted from Barth 2011a:3).

    (17)   English *will* 'want' > *will* FUTURE

        a. **I'll** see you later.

        b. ***I'll** it to be so.

The auxiliary form in 17a has lower semantic weight and is more frequently used than the form in 17b. Barth writes that this difference in use requires separate storage of the homonyms in the lexicon (2011a:4). She goes on to examine the use of each of the target constructions (copula, progressive, passive) to determine if any type exhibits more reduction and predicts that the progressive and passive construction would have higher rates based on grammaticalization theory, but if frequency influences reduction, then the copula should show more reduction than the progressive or passive. In the model for contraction, Barth finds that the construction type plays a role; progressives are contracted significantly more often than copulas and passives, which are not statistically different from each other except for use with *am*. Barth also finds the type of subject, length of subject, preceding phoneme, and other factors significant (2011b:14) and concludes that neither construction type nor grammaticalization alone is a sufficient explanation because "the tendencies of grammaticalization favor the progressive construction in comparison to the copular construction, and the tendencies of frequency favor the progressive construction in comparison to the passive construction" (2011b:14).

Fredriksen (2011) investigates the choice of contraction over the full form in the Ohio State University Buckeye Corpus (Pitt et al. 2007) and the University of Michigan Corpus of Academic Spoken English (MICASE) (Simpson et al. 2002) to consider comparisons between

nonacademic and academic speech and other linguistic, social, and contextual parameters. The study finds, as Labov and others have, that contracted forms are most influenced by the subject of the contraction (the host; the preceding word). The discourse setting and the verbal construction (that is, whether the utterance is copular, perfect, passive, modal, etc) are significant predictors in the use of contraction. The paper also examines the location of the contracted element in negated utterances (auxiliary contraction versus *not*-contraction) and determines that verbal construction, level of interactivity indicated by discourse setting, and age are significant predictors of where the contraction will occur. Contraction overall and contraction of the negative particle are more likely in settings that are less formal with higher levels of interaction and fewer participants, such as study groups and advising appointments.

Guy et al. (2011) examines auxiliary contraction outside of the copula using three corpora of spoken English. Among other findings, the analysis shows that auxiliaries that reduce to a stop disfavor contraction, auxiliaries contract more after vowels and obstruents rather than fricatives and liquids, and that auxiliaries contract most after personal and other pronouns compared to other parts of speech. The study finds that negated phrases strongly disfavor contraction because the negation particle *not* usually cliticizes to the auxiliary, blocking contraction. The social factors examined, including dialect (geographic location) and education level, are not significant. Women are found to use contractions more than men (.55 to .46), but other studies have found that gender and age are not statistically significant predictors (Fredriksen 2011 among others).

The most detailed recent analyses of variable auxiliary contraction are MacKenzie's quantitative corpus studies (2010, 2011). Her research on English auxiliaries focuses on the grammatical mechanism of contraction itself and seeks to identify the locus of linguistic variation by looking at intermediate forms of contractions. The model proposed in MacKenzie

localizes variation at two levels of derivation: one level of morphosyntactic alternation between full and contracted allomorphs, followed by a level of phonological processes that act on these allomorphs (2010:1-2). MacKenzie locates tokens in the Switchboard corpus (Godfrey et al. 1992) by using transcripts but codes each one by hand based on the audio file. The goal of this method is to extract contractions of the intermediate level; that is, those that are either reduced but phonologically unable to contract to their host (*people've*), or cases in which adjunction to the host is phonologically acceptable but only partial reduction occurs (*he [əs] been there*). Neither type is well-represented orthographically, so coding by hand allows MacKenzie to discern more phonological detail than the original transcribers were concerned with. MacKenzie (2011) examines the effect of subject weight on contraction and finds that contracted forms are disfavored after longer subjects. An interesting discovery found in this line of research that MacKenzie intends to explore further is that there is an apparent eight-word cut-off for contraction; reduced forms categorically do not surface after subjects longer than eight orthographic words.

In general, contractions of auxiliaries other than the copula in English have received comparatively less attention in the sociolinguistic literature. The research on auxiliary contraction shows, however, that the English auxiliaries do behave differently; they occur at different rates overall and also contract at different rates (Fredriksen 2011, Guy et al. 2011, MacKenzie 2011). Table 2.1 below summarizes the raw data from the studies mentioned above. Because there are no other studies to compare to, the contraction of *did* from Fredriksen (2011), which occurs at a rate of .44 (4/9), has been omitted from the table. The raw counts from MacKenzie (2011) are not given in her paper but have been approximated from the graphics, which do show the total number of words. The MacKenzie tokens of *is* are solely the progressive

is, not the copula; the Barth (2011), Fredriksen (2011), and McElhinny (1993) *is, am,* and *are* tokens combine the copula, progressive, and passive. The numbers for Barth are those reported in the study from the Corpus of Contemporary American English (COCA) (Davies 2008) and are rounded to the nearest hundred thousand, so that a 150 in table is actually 150,000. An *n/a* in the table signifies that no frequency data was available, only percentages.

Table 2.1 Summary of research on English auxiliary contraction

Aux.	*have*		*has*		*had*		*am*		*are*		*is*		*will*		*would*	
Study	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Fredriksen 2011	93 / 114	82%	31 / 41	76%	6 / 17	35%	157 / 170	92%	124 / 137	91%	426 / 553	74%	82 / 116	71%	47 / 82	57%
McElhinny 1993	149 / 192	78%	60 / 76	79%	22 / 65	34%	231 / 245	94%	338 / 370	91%	334 / 543	62%	10 / 15	67%	28 / 71	39%
MacKenzie 2011	397 / 478	83%	470 / 633	74%	214 / 427	50%	-	-	-	-	413 / 603	68%	377/ 470	80%	292/ 508	57%
Fredriksen 2012	398 / 579	69%	231 / 356	65%	43 / 201	21%	-	-	-	-	-	-	-	-	-	-
Barth 2011	-	-	-	-	-	-	150 / 166	90%	278 /	44%	753 / 1496	50%	-	-	-	-
Guy et al. 2011	n/a	68%	n/a	67%	n/a	18%	-	-	-	-	-	-	n/a	62%	n/a	24%
Bailey & Schnebley 1988	-	-	-	-	n/a	28%	-	-	-	-	-	-	-	-	n/a	52%
Labov 1972	-	-	-	-	-	-	n/a	99%	-	-	n/a	78%	-	-	-	-

The remainder of this paper considers contraction of the perfect auxiliaries from a variationist standpoint and relates the patterns found to those previously discussed in the literature detailed above. The interaction of contraction and verb semantics has not yet been explored, and by taking the mechanism of grammaticalization of the perfect into account, this

study seeks to determine if there is a link between perfect usage and auxiliary reduction, and if so, to what extent.

CHAPTER 3

METHODOLOGY

3.1 *Corpus*

The data presented here have been extracted from the Santa Barbara Corpus of Spoken American English (Du Bois & Englebretson 2004), which was chosen for its representativeness of natural speech and for its variety of contexts. The SBC forms part of the International Corpus of English and was compiled by researchers in the Linguistics Department of the University of California, Santa Barbara. The corpus is comprised of a large body of recordings of naturally occurring speech interactions from all over the United States and totals approximately 249,000 words. The speakers come from a wide range of occupations, genders, ages, regions, and ethnic and social backgrounds. There are sixty transcripts, mostly of face to face conversations, but also of telephone calls, card games, food preparation, on-the-job talk, classes, sermons, story-telling, town hall meetings, tours, and more. A full description of each transcript can be found at the SBC website. The recordings of each interaction have recently been made available for free online, and each line in the corpus is time-stamped so that researchers may find the target utterance easily.

To begin analyzing the data, I extracted all tokens of *have, has, had, 've, 's, 'd, haven't, hasn't* and *hadn't* from the corpus using the free concordance program AntCont, chosen for its user-friendly interface, sortability, and availability (Anthony 2011). The conversation labels were extracted along with the tokens and appear in the format *SBC###* (e.g. SBC045) and are

referred to this way throughout this study. Structures that were not perfect constructions were immediately excluded.[6] Table 3.1 below shows the distribution of each form in the study.

Table 3.1 Distribution of perfects in the SBC

Form	Contracted	Full	Total	% C
have	497	290	787	63
has	231	125	356	65
had	43	158	201	21
Total	771	573	1344	57

Fully 1,451 tokens of present, past, future, and conditional perfects have been exhaustively extracted from the corpus. After excluding categorically invariable structures, there are 1,344 tokens. I then coded for the dependent variable of contraction for each token, followed by the factor groups described below, staying as close as possible to coding schemes used in the previous research.

3.2 *Exclusions*

After the initial exclusion of forms that were not perfects, an additional 108 tokens were excluded. Tokens may have been excluded for one of several reasons. First, some tokens were duplicates. Others are categorical cases in which a contracting environment does not appear to exist for the perfect construction. This includes yes/no questions such as 18 and 19 where the auxiliary is clause initial.

(18)   a.   **Have** you got your hearing aids [in]? (SBC030)

b.   *'**ve** you got your hearing aids in?

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[6] This process of extraction initially yields the *have* of possession for *have, has,* and *had* and contraction of *is* for *'s* and *would* and *did* for *'d*.

(19) a. **Has** Jill been digging your friends? (SBC013)

       b. *__'s__ Jill been digging your friends?

There were no tokens of contraction of yes/no questions in the data, so questions like these are not suitable for a variable rule analysis.

Instances such as 20 where the perfect occurs after ellipsis in comparative constructions and other clause-final constructions like 21-22 are also excluded as they are invariably full forms.

(20) a. I couldn't hide it any longer than he **has.** (SBC029)

       b. *I couldn't hide it any longer than he**'s**.

(21) a. Is it okay if I record this? I already **have**. (SBC039)

       b. *Is it okay if I record this? I already**'ve**.

(22) a. [Has he seen a doctor?] I don't know if he **has** or not.

       b. *[Has he seen a doctor?] I don't know if he**'s** or not.

Contraction also does not occur in tag questions and clause-initial forms in inverted constructions (McElhinny 1993:373).

(23) a. [You] really haven't been fed, **have** you? (SBC059)

       b. *You really haven't been fed, **'ve** you?

(24) a. **Had** I done my homework, I would have passed.

       b. *__'d__ I done my homework, I would have passed.

Lastly, contraction does not occur in resultative constructions, which are the source of modern perfects. The participle in 25 acts more like an adjective describing *what*.

(25) a. What did you **have** done [at the doctor]? (SBC039)

       b. *What did you**'ve** done at the doctor?

Other reasons for exclusion include false starts, repetition, ambiguous cases, the *have* of obligation (e.g. *you* have *to do it*) and coding errors.[7]

In previous work, I have encountered only a few cases of deletions of perfects (e.g. *My wife and I Ø been thinking…*) while hand-extracting tokens, though this pattern is beyond the scope of this paper. Labov (1972) and Bailey and Schnebley (1988) have examined auxiliary deletions in speech, and future studies may wish to relate grammaticalization research to the deletion of auxiliaries. It may be the case that deletion is a final optional phonological process to act on a contracted allomorph.

3.3 *Factor Groups*

The dependent variable in this study is the contraction of a token of the perfect auxiliary in a contracting environment; that is, whether *has, have,* or *had* is realized as a full form or a contracted form. All factor groups here are linguistically conditioned. Contextual or discourse setting and social factors do not play a part in this analysis.[8] Previous research on contraction does not find either gender or age to be a significant factor in the prediction of the form (Fredriksen 2011).

The linguistic factors coded for are contraction, perfect item (*has, have,* or *had*), subject person; subject number; type of subject; referential or expletive subject; subject length; the 'host' of the contraction (preceding grammatical environment); preceding phonological environment;

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[7] A single token of a possible instance of a contracted possessive main verb *have* (i) was initially extracted under the assumption that there would be no such cases in American English. According to McElhinny, "British speakers regularly contract here" (1993:373) though I am not aware of any studies quantitatively comparing the two dialects with respect to this feature.

    (i)   He**'s** plans to take a job here. (SBC059)

Alternatively, this could be a speaker error in which the '*s* is a mistake and *plans* is a present tense, or the *'s* is a contracted progressive *is* and the speaker intended to use the *–ing* form of the verb.

[8] Future research may wish to examine the interaction between linguistic and extra-linguistic factors. For some analysis of this, see Guy et al. (2011).

perfect construction (tense and aspect); contracted clause type; temporal adverbial presence; temporal adverbial type; stativity of the VP; verb participle; negation; and, within negation, the type of negation (*not*-contraction versus auxiliary contraction).

3.3.1 *Subject-Related Factors*

According to Labov, the type of subject is the "single most important constraint… upon contraction in [Standard English]" (1972:16). He uses 'type of subject' specifically to mean the host of the contraction; that is, the word immediately preceding the contracted auxiliary. Usually this is the same as the subject of the clause, but in addition to a personal pronoun or noun phrase, the host of the contraction, or preceding grammatical environment, can also be a wh-word, other types of pronouns (e.g. *someone, that, anything*), a modal, contraction (e.g. *you'd've, wouldn't've*), or something else (e.g. *probably've*). Ultimately, pronoun hosts were coded as personal pronouns, wh-pronouns, and other pronouns. Modal and contraction hosts are coded separately and ultimately collapsed. Figure 3.3.1 shows the possible hosts of contraction in this data.

Preceding Grammatical Environment	Example	
personal pronouns	(26)	**I**'ve been sleeping about ten hours. (SBC029)
wh-pronouns	(27)	There's a young musician of 26 **who**'s broken his leg. (SBC032)
other pronouns	(28)	**Everyone**'s got girlfriends that they care about. (SBC020)
noun phrases	(29)	**The underwater viewing gallery** has not been your favorite place. (SBC057)
modals/contractions	(30)	That's something she **would** have decided to do. (SBC017)
other	(31)	The city **obviously**'s got its own priorities. (SBC052)

Figure 3.1 Preceding grammatical environment factor group

Subject person and number are also coded for: first, second, and third person, and singular and plural. Additionally, I coded for the specific subject type; all the *I*'s were coded separately from the *we*'s, and *you* singulars separate from the *you* plurals, and so on. Previous studies of contraction have shown much higher rates of reduction with certain subjects; for example, the first person progressive is contracted over ninety percent of the time in McElhinny (1993), Barth (2011), and Fredriksen (2011) compared to lower rates among other persons in the progressive (see Table 2.1). Within the third person, I also coded for referential versus expletive subject.

Following MacKenzie (2011), subject length in words was coded for in non-pronoun subjects to determine if there were heaviness effects; however, the low frequency of noun phrase hosts did not allow for a detailed analysis.
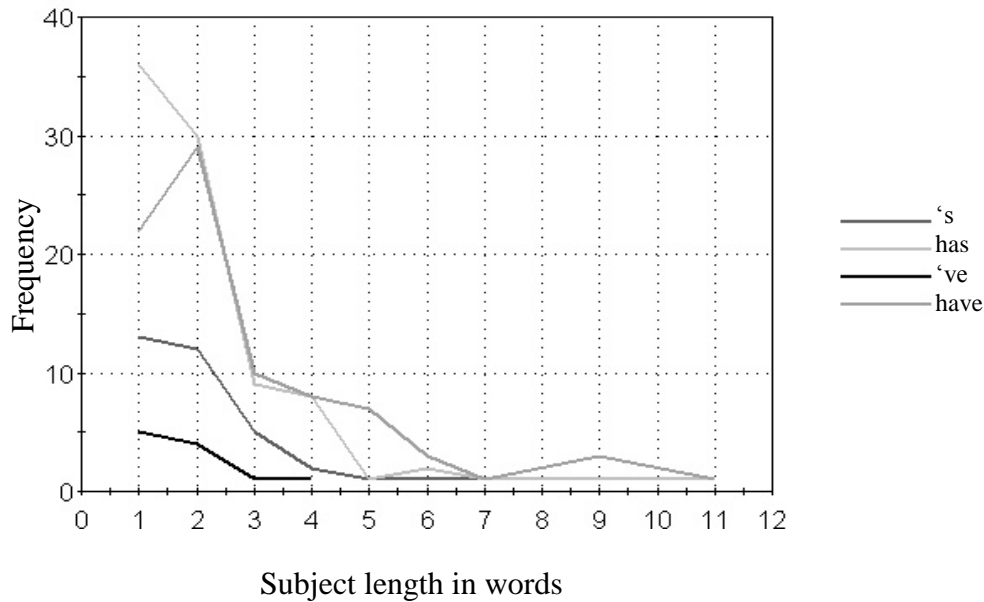

Figure 3.2 Distribution of surface forms with NP subjects by subject length

Above, Figure 3.2 illustrates the frequency of present perfect NP subjects, showing a general decline in use of contracted forms (and full forms) as subject length increases, with a notable drop in subjects of more than two words. Also visible is the preference of full forms with NP subjects, to be discussed below. For a more detailed discussion of this topic and its implications, see MacKenzie (2011).

The immediately-preceding phonological environment was also coded, following McElhinny (1993), MacKenzie (2010, 2011), Guy et al. (2011), and others. The environment was coded as vowel, obstruent, or sonorant. Obstruents and sonorants were further classified as stops or fricatives, or nasals and liquids. Preceding vowels are expected to have a much higher probability of hosting the contracted allomorph, while liquids, nasals, and especially fricatives and stops should disfavor contraction.

3.3.2 *Other Factors*

Following Schwenter & Cacoullos, I also coded for clause type. The notion of current relevance can be analyzed through clause type in that some types of clauses encode information about how they are temporally anchored (2008:17). Main clauses, relative clauses, and other subordinate clauses have each been coded separately. Perfects in relative clauses are not expected to favor reductions since these types of clauses are tied to an earlier moment in discourse, which makes them naturally more related to current relevance. According to Lindstedt, the current relevance reading may be losing ground in American English (2000:370-71), which would be evidenced by the newer uses of the perfect having more reduction. For the same reasons of temporal distance and duration, the type of perfect construction has also been recorded; each token has been coded as active or passive for present perfect, present perfect

progressive, past perfect, past perfect progressive, conditional perfect, and conditional perfect progressive.[9]

Temporal reference and temporal adverbials were also extracted and coded by type, following Schwenter & Cacoullos (2008), Bertinetto & Delfitto (2000) and Van Herk (2003). The majority of present perfect tokens (70%) had no co-occurring time reference. Present perfects are said to disfavor adverbials with any link to a specific time or event in the past, and indeed, there are no specific time adverbials in the data. There are very few 'connective' adverbials (n=11 contracted/ 12 total), since these, such as those in 32, "[detract] from (focusing on the result associated with) a current relevance interpretation" (Schwenter & Cacoullos 2008:16). They include adverbials such as *after, before, then,* and *finally*. Also infrequent are the 'proximate' adverbials, as in 33 (n=22/26). These include current relevance adverbials that refer to periods extending to the present, such as *lately*, *this week*, and *now* (2008:16-17).

(32)   a.   Feel free **after** I*'ve gone through* this information [to] share any information you might have. (SBC010)

       b.   People who had technically died and **then** *have been revived* saw relatives coming for them. (SBC011)

(33)   a.   Do you wanna just write on here that I*'ve paid* that $50 **now**? (SBC023)

       b.   He's become more attached and I think a lot of it is because a lot of his friends *have* **now** *gotten married.*

The most frequent temporal adverbials were 'duratives' as described by Bertinetto and Delfitto (2000:195-205). These, like those in 34, include adverbials such as *since, still,* and *already*, and continuous adverbs like *for a week, in (for) five years,* and *a long time* (n=83/130).

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[9] There were no uses of the passive with any of the perfect progressive constructions in the Santa Barbara Corpus. These structures are rare in written language, and even rarer in speech.

Frequency adverbials, for example, *always, never, a lot, each year,* and *sometimes* were also numerous (n=83/112), and have experiential meaning that extends into the present and may refer to iterative situations (35) (Schwenter & Cacoullos 2008:15).

(34)   a.   I*'ve avoided* watching that show **for four years.** (SBC005)

b.   John *has been retired* here **for eight years**. (SBC032)

(35)   a.   You*'ve got* a thousand meetings **a week**. (SBC033)

b.   You know, like, how we *have* **always** *talked* about life being out there, you know? Like, there has to be. (SBC015).

To my knowledge, research relating contraction and verb semantics has yet to be conducted. Thus, I have also coded each verb phrase as stative (36) or nonstative (37) following Carey (1995) based on the typical stativity tests described in Dowty (1979). Stative verb phrases are those that reference an "unchanging situation which will continue unless something happens to change it" (Bybee et al. 1994:55).

(36)   a.   We've all *known those precious times of genuine fellowship with the Lord.* (SBC047)

b.   All of us have *been afraid of something*, haven't we? (SBC055)

(37)   a.   Well I've *replaced fences since then.* (SBC008)

b   Since then, Alisheba has *beat his record.* (SBC013)

Statives are the only type of verb that produces a continuative reading in English, which is historically prior to the experiential perfect (Lindstedt 2000, Portner 2003). If experiential perfects are more grammaticalized, then there may be more reduction, depending on whether grammaticalization or frequency of construction type has a larger effect on reduction (Barth 2011b). To best see what patterns exist across perfect types, I have coded for stativity. This is

because the type of perfect (continuous, experiential, resultative, hot news) is not directly available, since it appears to be based on the interaction of various factors, including adverbials, verb semantics, and form choice (Van Herk 2003:4-5). Additionally, "motivations in the choice of an expression" such as current relevance are not accessible to researchers as they are typically linked to speaker-based motivations (Schwenter & Cacoullos 2008:11). For these reasons, perfect type is notoriously difficult to code for, as the types and uses can usually only be reliably distinguished in the most ideal tokens (2008:11).

Unlike Carey (1995), Van Herk (2003) opts to code for verb semantic type over stativity. Van Herk points out that there is interaction between stativity and verb semantics, because all tokens in each semantic factor group are either stative or nonstative. He chooses the verb semantics factor group over the stativity group because it allows more of his hypotheses to be tested, and he notes that stativity effects can be recovered through the fine distinctions between the semantic groups. For the present study, I follow Carey (1995). Dowty (1979:62), when discussing actionality, remarks "that not just verbs but whole verb phrases must be taken into account…", so in contrast to Schwenter & Cacoullos (2008) who code Aktionsart by considering the infinitive citation form of the verb plus the object, independently of aspect, I take the entire VP into account when considering stativity because lexical aspect (Aktionsart) and grammatical aspect are not independent of each other. In most cases, using the citation form would be sufficient, but the durative adverbials and other factors, including the nature of the perfect, must be considered since "the perfect does show various interactions with temporal elements" (Portner 2008:489). The individual verb participles were also recorded due to disproportional frequencies of certain constructions, like *have got* in 38. All but three of this type are contracted, and the

three that occur in the full form follow unfavorable environments for contraction (they are outside of the main clause and one follows an "other" grammatical environment).

(38)　a.　She**'s got** huge arms. I mean, she's in shape. (SBC052) (n=142/145)

　　　b.　How many **have** you **got**? [horses] (SBC051) (n=3/145)

Lastly, the presence or absence of a negation in the perfect clause was recorded. Negation is expected to disfavor perfect auxiliary contraction because of the tendency for *not* to cliticize as *n't* to the auxiliary.   The negative adverbial *never* was also coded as negation; all but one instance of auxiliary-contracted negation (as opposed to *not*-negation) are tokens of *never*.[10]

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[10] The type of negation coded for here is verbal negation, with *not* and *never*. Tokens with other types of negation phrases were infrequent.

　(i) **No one** has even come close. (SBC006)　　　(ii) I've done **nothing** this week but study. (SBC051).

The model was rerun with these types included which did not produce any significant changes.

CHAPTER 4

RESULTS AND DISCUSSION

Statistical tests were conducted using GoldVarb (Sankoff et al. 2005), which performs a

multivariate, logistic regression analysis and is employed by variationists studying corpus data

and natural speech, which oftentimes has an uneven distribution of features. It estimates the

probability of the application of the input rule (here, contraction) based on the observation of the

rule's frequency across all tokens. In other words, a model is produced which relates the odds of

each factor to a sum of the effects. GoldVarb calculates the independent effect of each of the

factor groups influencing contraction, for example the host of contraction compared to stativity,

and the effect of each factor within a factor group; that is, whether a stative VP or nonstative VP

factors contraction. Factor weights closer to 1 suggest that the variable (the contracted form) is

favored, and values closer to 0 indicate it is disfavored (the full form is preferred) (McElhinny

1993:373).

4.1 *Preliminary Findings*

The most common perfect construction in the data is the typical present perfect formed

from *have* plus a main verb participle (n=545/813 contracted). Passive constructions of present

perfects from *have* plus *been* plus a main verb participle occur much less frequently (n=23/52).

A. Active Present Perfects

(39)   Well, she**'s begun** to listen. (SBC005)

(40)   You have to know that whatever God **has given** you, whatever

experience that God has brought you through, that He wants you to use it. (SBC010)

B. Passive Present Perfects

(41)   Well, it**'s been moved** and seconded. (SBC052)

(42)   The church **has been given** a mission, but our mission is not for us to go and decide what we're gonna do. Our mission is to participate… (SBC026)

Overall there are 183 tokens of the active past perfect, *had* + participle, 39 of which are contracted. There are only 13 tokens of the passive, and none are contracted.

A. Active Past Perfect

(43)   Mr. Farrington decided he**'d spent** too much money on this horse. (SBC040)

(44)   Mom **had cut** all the pastries in half. (SBC006)

B. Passive Past Perfect

(45)   I learned this story from a white man who **had been adopted** into a tribe in Michigan. (SBC054)

Furthermore, modals can combine with perfects to produce a variety of conditional perfect constructions.

(46)   I don't think Sharon **would've said** it if you**'d've been** around. (SBC26)

(47)   If she**'d've known**, she'**d've figured** I needed my…head examined. (SBC036)

(48)   Aw, I**'d've had to replace** it for the store. (SBC060)

(49)   I think Gregg and them **would have been** a little bit more motivated. (SBC001)

(50)   This **could have been given** to the poor. (SBC005)

Perfect constructions can also be used with the progressive aspect in the present, past, and conditional constructions and may be active or passive, though the latter is less common and no tokens were found in this study[11].

A. Present Perfect Progressive

(51)   You know that ball**'s been sitting** out there forever. (SBC051)

(52)   We **have been identifying** places that have plans and **trying** to get

things done. (SBC059)

B. Past Perfect Progressive

(53)   He**'d been driving** a cab for forty years. (SBC051)

(54)   I **had been skiing** for two and a half hours. (SBC046)

C. Modal/Conditional Perfect Progressive

(55)   You **must've been telling** Cindy or Lisa or somebody. (SBC045)

(56)   GARY: You **must have been hurting** this last season. Hunh?

JULIE: No actually, my hay supplier was real good to me. (SBC046)

When all the different perfect constructions are considered together, the overall rate of contraction across the 1,344 tokens in the data is 57%.

4.2 *Model of All Perfect Uses*

Table 4.1 below shows the analysis of factors contributing to the choice of auxiliary contraction over the use of the full form throughout the entire corpus, including present, past, and conditional perfects.

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[11]   Passive (Present, Past, and Conditional Perfect) Progressives
(57)   The ball**'s been being played** with.
(58)   He **had been being driven** for forty years**.**
(59)   You **must have been being told** by Cindy or Lisa.

Table 4.1 Factors contributing to the choice of contraction over the full form across all English perfects

	Factor Weight	% aux contraction	N	% of total context
Preceding Grammatical Environment (Host of Contraction)				
personal pronoun	.681	72.1	853	63.5
other (non-pronouns)	.297	31.2	77	5.7
pronoun (non-personal)	.254	32.7	98	7.3
modal	.235	44.5	173	12.9
noun	.131	16.1	143	10.6
Range	55			
Negation				
absent	.569	62.1	1157	86.1
present	.151	28.3	187	13.9
Range	42			
Stativity of VP				
stative	.600	67.2	714	53.1
nonstative	.387	46.2	630	46.9
Range	21			
Preceding Phonological Environment				
nasal	.613	35.0	40	3.0
stop	.613	49.2	376	30.0
vowel	.493	67.3	835	62.1
liquid	.481	24.3	37	2.7
fricative	.050	1.8	56	4.2
Range	56			
Voice				
active	.511	58.4	1274	94.8
passive	.308	38.6	70	5.2
Range	20			
Clause Type				
main	.530	59.8	961	71.5
subordinate	.426	51.2	383	28.5
Range	10			
Log likelihood = -696.831	**p=.008**		**Input (C)**	**= .574**

The overall rate of contraction of perfect auxiliaries in the data is 57.4%. Six groups were included in the multivariate analysis in GoldVarb: immediately-preceding grammatical environment (the host of contraction), immediately-preceding phonological environment, negation, stativity, voice, and clause type (main or subordinate). These factor groups are used in

the analysis because they are the groups that pertain to all perfects, as opposed to just present perfects, and are the least likely to interact. All are significant in the overall picture of contraction with perfect constructions.

Out of the 1,344 tokens of past, perfect, and conditional perfects, 771 are contracted. This gives a rate of 57.4%, which is low compared to previous studies (see Table 2.1). However, the 57.4% includes past perfects and non-present perfects, which does not allow us to see the picture for each auxiliary in each construction. Table 4.2 shows the distribution of the types of perfects based on auxiliary. *Have* and *has* are contracted at a higher rate than *had.* This is expected since the present perfect forms occur at a greater frequency compared to the past perfect.

Table 4.2 Distribution of all perfect constructions

	Present perfects		Past Perfect	Conditional Perfect	Total
	have	*has*	*had*	*have*	
Contracted *n*	399 / 580	231 / 356	43 / 201	98 / 206	711 / 1344
% Contracted	69	65	21	48	57.4
% of data	43	27	15	15	100

The host of contraction factor group is the most significant. This group is added to the model in Table 4.1 first because it is the strongest predictor of contraction in perfect auxiliaries, which supports the hypothesis that the host of contraction, or as Labov called it 'type of subject' (which means something different here), is the single-most important factor influencing contraction (Labov 1972). Personal pronoun subjects strongly favor contraction over other pronouns, NPs, modals, and other words. This is consistent with Labov (1972) and other work done on contraction (McElhinny 1993, Fredriksen 2011, Guy et al. 2011, MacKenzie 2011, and others). Table 4.3 below shows the effect of the preceding grammatical environment on the contraction of each auxiliary.

Table 4.3 Effect of preceding grammatical environment on perfect auxiliary contraction

	Overall % C (# of tokens)	Preceding Personal Pronoun	Preceding 'other'	Preceding Pronoun (non-personal)	Preceding Modal	Preceding Noun
have	63% (497/786)	78% (393/504)	39% (22/57)	21% (4/19)	45% (77/173)	3% (1/31)
has	65% (231/356)	84% (179/212)	12% (2/17)	56% (28/50)	0	29% (22/77)
had	21% (43/201)	31% (43/137)	0% (0/3)	0% (0/26)	0	0% (0/35)
Total	57% (771/1344)	72%	31%	33%	45%	16%

The past perfect auxiliary, *had*, can only contract to a preceding personal pronoun, whereas *have* and *has*, which end in continuants, contract much more. Continuants in English can be syllabic (*that've*) and the English /s/ can append to nearly any preceding segment as a syllabic coda, but stops cannot (**what'd*) (Guy et. al 2011). Conditional perfects are of the form 'modal + *have*' categorically, hence the zeros for *has* and *had*. Preceding modals disfavor contracted allomorphs, though 45% are followed by *'ve*. This higher percentage is partially due to orthographic conventions; it is more standard (orthographically, not prescriptively) to write [modal]*'ve* (e.g. *should've*) than something like *people've* or *trees've*. Preceding non-personal pronouns and other words (mainly adverbs and conjunctions) also disfavor contracted auxiliaries. Nouns highly disfavor contracted forms, especially plural nouns used with *have*. I will return to the topic of preceding grammatical and phonological environment interaction below in the discussion of present perfects.

In main clauses and many subordinate clauses, the host of contraction is usually the subject of the sentence, so the individual subject factor group was not entered into the analysis due to the unacceptable amount of overlap with the host group. Looking at frequency data, however, singular subjects are contracted 51% of the time, while plural subjects are contracted

59% (*p* = .029). The individual subjects, from the highest rate of contraction in a contracting environment to the lowest rate, are summarized in Table 4.4 below.

Table 4.4 Contraction by subject

	it (expletive)	*you* sg.	*she*	*I*	*we*	*they*	*it*	*he*	*there*	other	*you* pl.	NP
n	22	103	54	247	58	71	52	89	7	35	2	31
%	76	75	68	67	67	64	62	61	50	30	25	19

Subject type when considering noun phrases and other subjects is a significant predictor in the choice of contraction, with $p < .001$ ($\chi^2 = 128.99$). The *you* plural has a much lower rate of contraction rate than the rest of the pronoun subjects, though this pronoun is used in less than 1% of the tokens extracted from the corpus. The noun phrase subject disfavors contraction, which can also be seen in the multivariate analysis above. However, among only the personal pronouns, there is no significant relationship between contraction use and pronoun type ($p = .059, \chi^2 = 16.379$).

The factor group that indicates the presence or absence of verbal negation in the perfect construction is added to the model second after the host of contraction. Negated tokens highly disfavor contraction; the probability of a reduced auxiliary co-occurring with negation is only .151 (see Table 4.1). This is expected, because the negative particle *not* tends to cliticize to the full form perfect auxiliary as *n't*, rather than occurring in its full form *not* with a contracted auxiliary. This is especially true in American English. Within the negation group, the structures have also been coded for whether they are full form negation, *not*-negation, or auxiliary-contracted negation, following Yaeger-Dror (1997). The distribution of these types in the data is shown in Table 4.5 below.

Table 4.5 Alternate forms for *have not* in English

Uncontracted (full form)		Negative Contraction (*not*-contraction)		Auxiliary Contraction	
I have not	3	*I haven't*	33	*I've not*	1
you have not	-	*you haven't*	10	*you've not*	-
s/he/it has not	3	*s/he/it hasn't*	21	*s/he/it's not*	-
we have not	1	*we haven't*	6	*we've not*	-
they have not	1	*they haven't*	7	*they've not*	-
	8		77		1

Clearly, auxiliary contraction in negated constructions is rare in American English; negative utterances prefer cliticization of the negative particle. According to Yaeger-Dror, "some dialects are more likely to contract the auxiliary, whereas others more often contract the negative" (1997:10). British English is more variable in selection of *not*-contraction and auxiliary contraction, but American English reduces the negative element as a general rule.[12] Yaeger-Dror observes that negatives, theoretically, should be unreduced, since they carry important information while auxiliaries do not, and for this reason, *not*-contraction and auxiliary contraction have been coded separately (1997:11). There were also several tokens of double contraction in conditional perfect constructions.

(60)   I had several things I wanted to say, and I probably would've if Anna

         wouldn't've been there. (SBC056)

(61)   Too bad you **couldn't've** got in on that (SBC013)

---

[12] Yaeger-Dror (2002) reports that even in American English, "dialect area is a significant factor influencing *not*-contraction, with *not*- contraction preferred in the north (including New England, the northern cities area, the Ontario area, and the northwest) and Aux-contraction favored in the southeast and southwest" (2002:109).

Table 4.6 Alternate forms of negative and auxiliary contraction in conditional perfects

Uncontracted (full form)		Negative Contraction (not-contraction)		Negative Contraction + Auxiliary Contraction[13]	
I [modal] not have	1	*I [modal]n't have*	4	*I [modal]n't've*	4
you [modal] not have	-	*you [modal]n't have*	-	*you [modal]n't've*	4
s/he/it [modal] not have	1	*s/he/it [modal]n't have*	5	*s/he/it [modal]n't've*	4
we[modal] not have	-	*we [modal]n't have*	-	*we [modal]n't've*	-
they [modal]not have	-	*they [modal]n't have*	3	*they [modal]n't've*	-
	2		12		12

Contrary to the theory that negatives should surface as full forms rather than contractions due to their semantic relevance, the corpus data show that negatives are usually reduced, even in conditional perfects (Table 4.6), which Yaeger-Dror attributes to "prosodic reduction" following the Social Agreement Principle (1997:24-25). The Social Agreement Principle is that by which speakers in interactional situations minimize disagreement and emphasize agreement with other speakers. The Santa Barbara Corpus is comprised of natural speech, so it fits that negatives would be reduced for prosodic reasons (see Yaeger-Dror 1997 for an analysis of negative contraction as influenced by register-specific interactive rules).

The stativity of the verb phrase is the next factor group selected for the model of contraction, followed by preceding phonological environment. These two variables are significant in both models and will be discussed in the next section in which I concentrate exclusively on the present perfects. The fact that the magnitudes of effect of both stativity and preceding phonological environment are close in both models suggests that these constraints operate independently of perfect tense; that is, neither stativity of the verb phrase nor preceding phonological environment is particularly tied to whether the token is present, past, or conditional.

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[13] Other realizations of the negative particle were not found in the corpus, but are possible:
i.   SUBJ + [modal] + *not've,*   iii.   SUBJ['d]n't've (e.g. *you'dn't've*) (only possible with *would*)
ii.   SUBJ + [modal]'ve + *not*

Contraction is also subject to whether an utterance is active or passive, though its magnitude of effect is relatively small with a range of 20. The tokens, however, are poorly distributed between passives and actives; only 5% of all tokens are passive. In general, less frequent structures are reduced less often (Barth 2011a and 2011b). This factor group also interacts with negation and the host of contraction; because passive voice deemphasizes the role of the agent (which is usually a personal pronoun), the subject of a passive sentence is more likely to be a noun or other pronoun than the subject of an active sentence is, and therefore, less likely to host contraction. Additionally, personal pronouns in passive constructions are followed by contracted auxiliaries at a rate of 47%, compared to 73% in active sentences, and the proportion of past perfects in passive constructions is also higher than in actives. As seen in Table 2.1, auxiliaries that end in stops, like *had*, are less likely to contract. Another explanation for the disfavored use of contracted perfect auxiliaries in passive constructions may be that since the subject has been deemphasized, there is more focus on the experience or action. The comparatively heavier semantic weight of the passive may be the reason for the choice of the full form over the contracted form.

The last significant factor group is the clause type. Clauses have been grouped together into main and subordinate clauses, the latter of which is almost entirely comprised of relative clauses and *that*-clauses. Contrary to earlier predictions, relative and other subordinate clauses do not favor auxiliary contraction; they slightly disfavor it. Again, this is likely partially due to the phonological environment, which has a much larger magnitude of effect (a range of 56 compared to 10). Also, subordinate clauses often shift the temporal perspective. In other words, the main clause and subordinate clause are not required to occur in the same temporal domain, as in 62 and 63 below.

(62)   These **are** parents that **have come** from places like El Salvador and Colombia.

            (SBC031)

(63)   It**'s** truly a historic occasion *today* to have among us a citizen who **has**

            contributed so much, not only to this entire area, but to the world of

            ceramics. (SBC006)

These two examples clearly show the current relevance notion of the perfect. The head clauses in 62 and 63 are in the present tense and are followed by a clause in the perfect. Though both are morphologically present forms, the subordinate clause emphasizes the current relevance of the situation. Perhaps the change in aspect is what causes these types to favor the full form of the auxiliary because it is new information that alludes to current relevance. In 63, the use of *today* in the main clause reinforces the relevance to the present. The utterance implies that the citizen mentioned is presently in attendance and that the speaker is addressing more than one audience member. In this case, there may be discourse setting constraints acting on the choice of the full form. Fredriksen (2011) finds that the amount of interaction and discourse setting of a speech event does influence contraction, and in more formal, less interactive situations, speakers use significantly fewer contractions. Since the data in this study were not coded for discourse type or formality level, the exact relationship between these factors and linguistic factors cannot be known.

4.3 *Model of the Present Perfect*

This section discusses specifically present perfect constructions, the type most often referenced and analyzed in the literature. Table 4.7 below shows the variable-rule analysis of factors contributing to the choice of auxiliary contraction in American English.

Table 3.7 Factors contributing to the choice of contraction over the full form in present perfects

	Factor Weight	% aux contraction	N	% of total context
Preceding Grammatical Environment (Host of Contraction)				
personal pronoun	.661	79.9	716	76.5
other pronoun (non-personal)	.233	44.4	72	7.7
noun	.096	21.3	108	11.5
other (non-pronouns)	.023	7.5	40	4.3
Range	64			
Negation				
absent	.630	73.7	865	86.0
present	.036	28.2	131	14.0
Range	59			
Stativity of VP				
stative	.606	76.4	555	59.3
nonstative	.348	54.1	381	40.7
Range	26			
Temporal Adverbial				
connective	.860	91.7	12	1.3
frequency	.853	74.8	111	11.9
proximate	.798	84.6	26	2.8
durative	.491	63.8	130	13.9
- (none)	.407	65.6	657	70.2
Range	45			
Preceding Phonological Environment				
nasal	.603	42.4	33	3.5
vowel	.547	75.8	686	73.3
stop	.545	60.1	143	15.3
liquid	.520	30.0	30	3.2
fricative	.020	2.3	44	4.7
Range	58			
Clause Type				
main	.539	69.5	685	73.2
subordinate	.396	61.4	251	26.8
Range	14			
Log likelihood = -341.720	*p* = .012		**Input (C)**	= .673

The model of present perfects differs only slightly from the model of all perfect constructions. The factor groups are added in the same order: preceding grammatical

environment, negation, stativity, preceding phonological environment, and clause type. The temporal adverbial group, which applies only to present perfects, is added fourth. The rate of contraction across the 936 present perfects is 67%, compared to 57% in the model for all perfects. The host of contraction (preceding grammatical environment) is the best predictor, with clause type having a minimal but still significant effect. As with all perfects, all factor groups run in this analysis are significant.

Preceding grammatical environment and preceding phonological environment interact in the model of all perfects, as well as in the subset of present perfects. This is reflected in the range of the factor weights; preceding phonological environment is significant and has a broad range of 58, though it is selected in the model second to last. The magnitude of effect is high and perhaps even understated due to the overlap with the first group (and the others to a lesser degree) (Guy et al. 2011). Even with the high level of interaction, chi-square tests show a significant difference between noun and personal pronoun hosts within each preceding phonological environment. A cross tabulation (Table 4.8) shows there are 642 personal pronoun hosts that end in vowels and 16 nouns, 15 non-personal pronouns, and 13 other words. There are 74 personal pronouns, 32 non-personal pronouns, 244 nouns, and 13 other words ending in stops.

Table 4.8 Cross-tabulation of preceding grammatical environment and phonological environment[14]

		Personal pronouns	% C	Other pronouns	% C	Nouns	% C	Other	% C	Total	% C
vowels	C:	509	79	6	40	3	19	2	15	520	76
	F:	133	21	9	60	13	81	11	85	166	24
stops	C:	63	85	17	53	5	21	1	8	86	60
	F:	11	15	15	47	19	79	12	92	57	40

---

[14] C = contracted forms, F = full forms

Since preceding grammatical environment is cited most often in the literature as the most important constraint on contraction, and because the preceding phonological environment overlaps so strongly with the category of preceding grammatical environment, it is pertinent to test the independence of these two factors to determine if it is the phonological or grammatical environment that predicts contraction, or both. All nominative personal pronouns in English end in a vowel, except *it*, so only vowels and stops are presented in Table 4.8 above.[15] Chi-square tests show that the two are independent; that is, both influence contraction separately; for vowels, $p < .001$, $\chi^2 = 68.987$, and for stops, $p < .001$, $\chi^2 = 50.329$. Personal pronouns mostly end in tense vowels and have a large weight compared to the other hosts; these facts combined illustrate why the phonological environment group is not added to the model in an earlier level. Preceding stops, nasals, and liquids all show an apparent favoring effect when the effect of preceding phonological environment is combined with the other factor groups. This is likely due to frequent contraction with *has,* as the *s* appends easily to virtually any environment.

The effect of preceding phonological environment on copula reduction is detailed in Labov (1972); he states that contraction (and subsequent deletion) applies due to the universal tendency of languages to disfavor a CVVC syllabic structure. When the host of the contraction ends with a vowel, the reduced auxiliary cliticizes to avoid a VV sequence and instead forms a CVC structure.

(64)   Joe is here → Joe's here

CV VC CVC → CVC CVC

(McElhinny 1993:382)

---

[15] No nominative personal pronouns end in liquids or nasals, and though there are no tokens in the SBC, structures like (i) are possible.
    (i) The plant we gave him/her **has** already died.
    (ii) The plant we gave him**'s**/her**'s** already died.

If the word preceding the contracting environment ends in a consonant, contraction in the same manner results in the formation of a consonant cluster (CVCC).

> (65)   Stan is here → Stan's here
>
> CVC VC CVC → CVCC CVC
>
> (Labov 1972:106)

This analysis does not directly apply to perfect auxiliaries since *have* and *has* are of the form CVC and in their full form do not create a CVVC environment. McElhinny (1993) and MacKenzie (2010) suggest that contraction is a multi-step phonological process which includes vowel reduction to schwa and deletion of the initial consonant. According to this theory, *have* and *has* reduce to [əv] and [əz] respectively, then ultimately to [v] and [z]. A CVVC sequence then exists due to the reduction, and the process applies in the same way as the copula in 64 and 65. In other words, an immediately preceding vowel, which is usually the tense vowel of a pronoun, favors syllabification of the reduced *have* or *has* because the contraction eliminates an unfavorable VV environment.

> (66)   I've decided to move on to another customer. (SBC022)
>
> I + have → I [əv] → I've ([aɪv])
>
> V   CVC → V VC → CV

Apart from the vowel environments, there are phonological restrictions on what clusters are allowed in English; so, in cases where a reduced perfect auxiliary cannot append to a preceding consonant or consonant cluster due to the phonological rules, full contraction does not occur, as with preceding fricatives.

> (67)   a. Their ligaments   have   been stretched so much. (SBC043)
>
> CVC   CV-CV-CVCCC CVC   CVC ….

b. ligaments   [əv]   →   *ligaments've [lɪgəmɪntsv]

       CV-CV-CVCCC   VC   →   *CV-CV-CVCCCC

Full reduction of *have* to [v] in this case would result in resyllabification of the [s] to following syllable, as shown in 68.

   (68)   ligament   -   s've [səv]

               CV-CV-CVCC   CVC

According to the Sonority Sequencing Principle (Selkirk 1984), *ligaments've* in 67b is not allowed. The more sonorous voiced [v] at the end of the syllable would follow the less sonorous voiceless [s]; these segments cannot appear in the coda in this order. In other words, the contracted allomorph of *have* [v] attempts to contract, but cannot. According to MacKenzie, a schwa is inserted in these cases to produce the intermediately contracted form [əv] due to a failure of the [v] to syllabify. As mentioned above, the *s* of *ligaments* is resyllabified because universally syllables like onsets, and the output is *ligament* [səv], in 68. It is beyond the scope of this study to code every token by hand from the audio files to know whether the SBC transcribers recorded this realization as a full form or an intermediate form, but frequency data shows that this type of phonological environment was nearly always transcribed as the full form. First of all, there are no tokens of contraction after a fricative in the SBC. One token of this type was extracted from the spoken section of COCA, a much larger corpus, to obtain a better distribution of data in each cell.

   (69)   For the past few weeks, the **phones've** been ringing off the hook on Capitol

               Hill. (COCA 1993)

An analysis was run in which fricatives and stops were combined but the regrouping was not representative of the distribution of contraction with either stops or fricatives. Additionally,

there are no contracted forms of the present perfect *have* after anything other than a vowel (except *phones've*). The only other instances in the data *have* contracts are after modals and negation (*could've, wouldn't've, you'd've*), and these are not included in the present model. These types of modal contractions are more conventionalized orthographically than [noun]*'ve*. In sum, the overwhelming majority of perfect auxiliary contraction follows a host ending in a vowel, which is usually a pronoun, but both the host of contraction and the phonological environment affect the realization of the contraction morpheme.

Turning now to factors of the perfect, stativity of the verb phrase is the third factor group selected in the model of contraction both across all perfects and within present perfects (Table 4.7). The entire aspectual makeup of the verb phrase has been taken into account. Stative constructions favor auxiliary contraction, with a factor weight of .606, and nonstatives disfavor contraction with a weight of .348. In English, before there were perfects, there were resultatives, which were incompatible with stative verbs. Through grammaticalization, resultatives produced perfects, which are compatible with statives (e.g., *John has been sick*). In this sense, the fact that statives favor contraction of the auxiliary can be considered evidence for grammaticalization, since the stative or durative use is relatively newer compared to the original resultative meaning. Phonetic reduction often accompanies grammaticalization and can be due to one or more factors associated with grammaticalization, including lower semantic weight, frequency of use, lexical class, context of use, and so on (Barth 2011b:1). Contraction of auxiliaries in speech is also affected by the speech rate; the faster the speech, the higher the rate of reduction. Indeed, stative perfects make up 59% of the data compared to 41% nonstatives and show more reduction. There is a disproportionate number of *have + got* tokens, as mentioned previously, which are nearly

100% contracted, but when a separate analysis was run excluding these, the model for contraction remained the same.

Some who research the perfect focus on its function as a 'stativizer' (Michaelis 1998, Katz 2003, among others). I find this to be a overly broad view of stativity, especially with respect to its applicability to analyzing linguistic variation, and though this study does take into account both grammatical aspect and the semantics of the verb to some degree, the Result State Theory would not allow us to differentiate the readings (types) of the perfects based on stativity. The coding scheme used here is based on stativity tests detailed in Dowty (1979). Nonstatives are verbs such as *eat, run,* and *go* that describe situations that have occurred (partially or fully) before the reference time when occurring as perfect. Statives, on the other hand, are those VPs where the state described by the perfect holds true at a time before the reference time, like *see, be, want,* and *live.*

As for the types of perfects, continuative perfects occur only with statives, while non-continuative perfects can occur with either stative or nonstative. In other words, nonstatives must be non-continuative. Only statives can produce a continuative reading, and according to Portner, "[only] in the presence of an overt temporal adverbial" (2003:489). Statives without temporal adverbials must be non-continuative and experiential. According to Lindstedt (2000), the experiential meaning derives from the current relevance meaning. In the data, 64% of the statives occur without a temporal adverbial, 75% of which are contracted. There are a number of nonstative predicates that co-occur with durative temporal adverbials in the SBC, but there are significantly more stative predicates that occur with durative adverbials ($p = .019$, $\chi^2 = 5.479$) and frequency adverbials ($p < .001$, $\chi^2 = 16.724$) than nonstative predicates. Table 4.9 below shows the cross-tabulation of temporal adverbials and stativity of the verb phrase.

Table 4.9 Cross-tabulation of temporal adverbials and stativity of the verb phrase

		none	%	*Dur.*	%	*Freq.*	%	*Prox.*	%	*Conn.*	%	*Total*	%
nonstatives													
	C	166	55	16	41	11	48	9	82	4	100	206	54
	F	138	45	23	59	12	52	2	18	0	0	175	46
statives													
	C	265	75	67	74	72	82	13	87	7	88	424	76
	F	88	25	24	26	16	18	2	13	1	12	131	24

Statives favor contraction, especially statives occurring with a temporal adverbial. The much higher rates of contracted auxiliaries in statives occurring with durative and frequency adverbials could be evidence that continuative perfects are more grammaticalized, but the experiential statives (those occurring without an adverbial) also show a comparatively higher rate of contraction than nonstatives, though not significantly so. Continuative readings of the perfect are older, and the more innovative experiential meanings should reduce more based on grammaticalization research. This is borne out in the data in that the perfects co-occuring with durative temporal adverbials and no temporal adverbial disfavor contraction. The vast majority of perfects do not co-occur with a temporal adverbial, and these disfavor reduction with a .407 factor weight. Perfect constructions with connective, frequency, and proximate adverbials all highly favor contraction, at probabilities of .860, .853, and .798 respectively. The magnitude of effect is comparatively great, with a range of 45. Proximate expressions indicate current relevance, and frequency adverbials often indicate habitual meaning or repeated occurrence (Schwenter & Cacoullos 2008:33). Cross-linguistically, connective adverbials most often occur with perfectives, not perfects, so the few that do co-occur with perfect constructions in the Santa Barbara Corpus may be evidence of a newer use. Ultimately, there are so few temporal

adverbials of this connective type in the corpus that any claims generalizing their distributions would not be justified. In contrast, durative adverbials are the most numerous type, co-occurring with perfects in 14% of the tokens. They do not strongly favor or disfavor auxiliary reduction, at .491. Again, the durative or continuative perfect reading is older than the experiential, and the nonstatives are older than the statives. The data here support the idea that the more innovative uses of a perfect are more likely to have a contracted auxiliary and show the reductive effects associated with grammaticalization.

In the literature on perfects, there are no widespread claims that the perfect in English is grammaticalizing to a perfective; at least, not in American English. Lindstedt (2000), who distinguishes between current relevance perfects and experiential perfects, suggests that the American English perfect is becoming "dominantly experiential" as indicated by the high degree of incompatibility of specific time adverbials (n=0 in the SBC) with perfects, and that "a possible next stage in this development would be the total loss of the current relevance reading" (2000:370). He references the following example:

(70)   Scenario: Child asks parent "Can I go now?"

      a. Did you do your homework?

      b. Have you done your homework?   (Lindstedt 2000:370)

According to Lindstedt, 70a is the American English variety, while British English speakers prefer 70b (see also Elsness 1997). In general, grammaticalized variants are more frequent than their original sources (Barth 2011a), so following Lindstedt's reasoning, the experiential perfect should be the most numerous in American English, since "it has been preserved much better […] than the current relevance function has" (Lindstedt 2000:371). Lindstedt does not offer many more details, noting that he is unaware of any extensive studies of

the difference in the dialects. If higher rates of contraction signal a later stage of grammaticalization, and if British English preserves the older uses of the perfect more, then there should be comparatively more reduction in older perfects in British English compared to American English. While a full quantitative analysis is beyond the scope of this study, I was interested in qualitatively comparing reduction in the resultative sources of perfects.

With the copula, both the source form and grammaticalized forms can reduce.

(71)   a. She is a star.   b. She's a star.

        c. She is acting.   d. She's acting.

        e. She is photographed. f. She's photographed.

The same is not true of the perfect, at least in American English. There are very few resultatives in the SBC, none of which are contracted.

(72)   I **have** it **pulled** back in a ponytail. (SBC006)

(73)   I **have** it **written** down some place. (SBC051)

To compare, I accessed the spoken section of the British National Corpus available online and immediately found instances of contracted resultative constructions.

(74)   We**'ve** all speakers **chosen** for their integrity and confidence. (BNC1993)

(75)   We**'ve** them **insured** from when they were born. (BNC1991)

(76)   [The dog] was like an old man on the seat [as] soon as you**'ve** him **collared.**
            (BNC1991)

The main difference between the American English forms in 69 and 70 and the British English forms in 74-76 is the implication of possession in the American English structures. The main verb in both 72 and 73 acts more like an adjective than the corresponding structure in the British English sentences. Unlike in the SBC examples, *have* in this context in the BNC

sentences can contract. This structure is not common in American English based on corpus frequency, so its invariability is not surprising given that a "more frequent homonym will reduce more than a less frequent homonym" (Barth 2011a:9). Without looking at more data, the exact constraints are not known, but it is clear that there are differences between the dialects.

Neither frequency of construction type nor grammaticalization effects alone explain the patterns found in the perfects (Barth 2011). Multiple factors, including temporal adverbials, stativity, preceding phonological and grammatical environment, negation, and clause type act together to build a picture of auxiliary reduction in perfects that further supports the theories in the literature that perfects are grammaticalized forms of resultatives and that contraction is a sign of lessened semantic weight and oftentimes a sign of change. In addition to grammatical and phonological constraints, semantic constraints can also affect reduction. By using temporal adverbials and stativity as proxies for perfect reading, this study has found that there is evidence of grammaticalization in the newer uses as evidenced by higher rates of reduction of the auxiliary, which supplements historical English corpus research on grammaticalization.

CHAPTER 5

CONCLUSIONS

This study has illustrated and described the patterns of auxiliary reduction across speech in American English perfect constructions. The multivariate models of auxiliary reduction across perfects as a whole and the corresponding model of present perfects specifically are nearly identical, suggesting that the same linguistic processes apply across all perfects. The overall frequencies of reduction are greater with the present perfect, due in part to the strong disfavoring effect of the less-frequent past perfects. Perfect constructions are characterized by their relation of current relevance to a past event, but began as resultatives and have acquired more uses through time by the process of grammaticalization. While this study (and others) does not code for the type of perfect as described by Comrie (1976) because of lack of access to speaker motivations, it has presented evidence that contraction is not a monolithic process across all auxiliary constructions, and also not within perfects. The various readings of the perfect can be examined through their co-occurrence with temporal adverbials and through the aspectual makeup of the verb phrase. The more innovative uses, broadly statives and specifically the experiential use, show higher rates of reduction, as evidenced by the higher probability of stative constructions co-occurring with temporal adverbials to contract. The source resultatives categorically do not contract in American English, due in part to their low frequency and heavier semantic weight. Future research should quantitatively compare dialects of English in order to locate variation in the function and stage of grammaticalization of the perfect.

We have seen that preceding phonological and grammatical environment have a large effect on when contractions are used. In speech, we have a statistically significant tendency to reduce more often to pronouns and segments ending in vowels, which highly favor adjunction of contracted allomorphs *'ve, 's,* and *'d.* This is consistent with Labov's (1972) conclusion that the preceding word has the largest effect on contraction. In other words, pronominal subjects, specifically personal pronouns, strongly favor contraction over NPs because they are more frequent and provide a favorable phonological environment for contraction, while there is some gradation of other categories, which is consistent with work on copula contraction and contraction as a whole. Negation strongly disfavors auxiliary contraction (*I've not*), as is evidenced by the single token of this on the corpus across all persons. Cliticization of the *not* particle as *n't* is favored instead.

It is clear that there are intermediate forms of contraction that need to be accounted for. Earlier studies examine contraction from a limited point of view and take into account only those instances in which contraction results in a single syllable, but there are clear cases where intermediate forms do surface. This study has taken these cases into account where possible, but future research should following MacKenzie (2010) in coding intermediate forms based on audio recordings rather than transcripts alone. The results presented here parallel other studies (Guy et al. 2011, Barth 2011, Fredriksen 2011, and others) while considering additional factors not operational or relevant in structures outside the perfect.

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