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**Examining the Interaction between Grammatical and Sociolinguistic Conditioning: the
Case of the (ING) Variable.**

Abstract

While the (ING) variable has been studied extensively within the context of both sociolinguistic conditioning and grammatical conditioning, no study to date has examined the interaction between these two types of conditioning. To this end, the present study collected 300 tokens of the (ING) variable from recordings of spoken English from the Santa Barbara Corpus of American English, which were then analysed for sociolinguistic conditioning, grammatical conditioning, and the interaction between the two. Results showed that there might be evidence for interaction between the grammatical conditioning of (ING) variation and the sociolinguistic factors gender, age, and hometown & home state. However, the present study is not conclusive due to the limited scope and the reliance on a small data set. Nonetheless, it has revealed potentially interesting paths that future studies could take up.

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1. Introduction

The (ING) variable, as in *building* and *walking*, has been extensively studied within the field of linguistics (Hazen, 2006; Houston, 1985; Trudgill, 1972, 1974; Shopen & Wald, 1981; Labov, 1989). The variable represents the variation between two different phonetic forms: [ɪŋ], the velar (standard) variant, and [ɪn], the coronal variant. Variation between the velar and coronal variants characterizes all varieties of English and is subject to the same type of sociolinguistic conditioning across varieties (Labov, 1989).

One reason that the (ING) variable is an interesting subject of study is that it is one of the few linguistic features that non-linguists are aware of and readily discuss, which gives linguists an excellent opportunity to study the variable from both a descriptive and prescriptive dimension (Hazen, 2006). The second reason is that the (ING) variant is remarkably stable in the synchronic dimension, but at the same time it has a complicated history of diachronic variation (Hazen, 2006). It can thus be studied from a variety of perspectives, the descriptive, the prescriptive and the historical.

In the context of (ING) variation, sociolinguistics looks at sociolinguistic conditioning, or how social factors like age, gender and education affect the realisation of the (ING) variable (Hazen, 2006). However, there is also grammatical conditioning, which derives from the historical development of the (ING) variable (Houston, 1985; Labov, 1989), whereby the velar variant is more likely to occur in nominal and adjectival contexts, while the coronal variant occurs more frequently in verbal contexts, such as present participles and gerunds.

While many studies have focused on either the sociolinguistic conditioning of (ING) variation (Fischer, 1958; Trudgill, 1972, 1974; Douglas-Cowie, 1978) or grammatical conditioning (Houston, 1985; Labov 1989), none have examined these two forms of conditioning together. The current study will do just that. It will attempt to confirm if sociolinguistic conditioning and grammatical conditioning influence each other, and try to give some indication how this might happen. Furthermore, it will act as an extension of Labov (1989) and Houston's (1985) work, seeking to find if the grammatical conditioning pattern also holds for other speech communities. Therefore the research question consists of two parts. The first part is: Does Labov's hypothesis of grammatical conditioning of the (ING) variable hold more extensively for American English? The second part is: Do sociolinguistic conditioning and grammatical conditioning interact, and if so, how?

2. Theoretical Framework

Over the course of the study of the variant realisation of (ING), researchers have tried to explain the variation between the velar and the coronal variant. The first type of explanation involves sociolinguistic conditioning (Fischer, 1958; Trudgill, 1972, 1974; Douglas-Cowie, 1978), while the second involves grammatical conditioning (Houston, 1985; Labov, 1989; Hazen, 2006). The latter is closely related to the historical development of (ING). This chapter will examine the two explanations posited for (ING) variation.

2.1 Sociolinguistic conditioning

The first prescriptive commentary on (ING) appears in the 18th century. Shopen & Wald (1981) cite two authors from that time, Johnston (1772) and Walker (1802). Their commentary seems to imply that at that time there was no negative attitude yet against the coronal realisation, and in fact, both realisations seemed to be perfectly valid. Johnston noted in 1772 that “[The *g* is] quiescent in the termination *ing* as in *reading*, *writing*, etc., which may also be sounded” (Johnston, 1772), while Walker observed in 1802 that “our best speakers do not invariably pronounce the participle *ing* so as to rhyme with *sing*, *king*, and *ring*” (Walker, 1802). In the 19th century, [ɪn] appears to have surpassed [ɪŋ] as the most common variant, as can be seen in commentary from the beginning of the 20th century: “Final unstressed *ŋ* has generally become *n* in all dialects, *evenin(g)*, *farthin(g)*, *mornin(g)*, *sendin(g)*, and similarly in all present participles and verbal nouns in *-ing*” (Wright, 1905).

It seems that after the turn of the century, [ɪn] started to decline in usage among the upper/educated classes. Jespersen (1909) referred to [ɪn] as “this formerly fashionable pronunciation”, and that at the time it was still favored by “the aristocracy and ‘horsy’ people generally”. Even its lingering popularity amongst a certain sector of the aristocracy did not

last long, and by the middle of the 20th century, [ɪn] as an upper-class indicator only survived in some very old speakers of the aristocracy (Ross, 1954).

Negative prescriptive attitudes started to emerge at the same time at which the usage of [ɪn] was declining among the upper/educated classes. Houston (1985) reports a 1902 letter to a British newspaper, which clearly shows a negative social attitude towards [ɪn]:

Sir, I trust that the whole Constitutional Party, whether liberal or Tories, will unite as one man in opposing an agitation opening a disloyal crusade against the Queen's English. Its commencement is clearly the thin end of the wedge, which, when driven home, will confound 'u' and 'w', singular and plural, and deprive present participles of their final 'g'.

Thus the [ɪn] variant seems to have been popular across different social classes including the upper/educated classes during the 18th century, reaching a peak in the 19th century, after which usage among the upper/educated classes decreased, and the coronal variant acquired a negative social stigma.

Modern sociolinguistics has studied the (ING) variable in several varieties of English, most notably those of New England (Fischer, 1958), Norwich, England (Trudgill 1974), Northern Ireland (Douglas-Cowie, 1978), Australia (Shopen & Wald, 1981) and Philadelphia (Labov, 1989).

Fischer (1958) studied the usage of (ING) in a group of New England school children. He found that (ING) was socially conditioned by gender: the [ɪn] variant was used the most by boys, whereas girls used [ɪŋ] more often. He also found evidence, albeit inconclusive because of the small sample size, of an association between a higher socioeconomic status and a greater usage of [ɪŋ]. Furthermore, he found that the variant realisation of (ING) was also conditioned by personality, mood and the degree of formality of the verb, e.g. 'formal'

verbs such as *critizing*, *correcting*, *visiting*, and ‘informal’ verbs like *punching*, *hitting*, *swimming*, whereby the velar variant occurred more often with ‘formal’ verbs and the coronal variant occurred more often with ‘informal’ verbs.

In his study on sociolinguistic patterns in Norwich, England, Trudgill (1974) found the same gender differentiation for (ING) as Fischer. Women were less likely to use [ɪn] than men in the same social class. His explanation for this phenomenon was that women are more sensitive to others’ perception of social class, and that lower class speech has masculine connotations, which women want to avoid. Also, it is likely that women are more aware of the covert prestige that accompanies the use of the standard velar variant of (ING) than males, who usually favour overt prestige forms (Trudgill, 1972).

Furthermore, Trudgill (1974) did more in-depth research into the class differentiation of the (ING) variable, which Fisher (1958) did not research adequately. Trudgill divided his sample into five strata: lower, middle and upper working class, and lower and middle middle class (LWC, MWC, UWC, LMC, MMC). He collected tokens of (ING) in four different environments, ranging from formal to informal: World List Style (WLS), Reading Passage Style (RPS), Formal Speech (FS) and Casual Speech (CS). He found that there was a divide between the working class group and the middle class group, with the former using [ɪn] almost exclusively in the more informal environments, and the middle class employing [ɪŋ] in all environments with some exceptions in the most informal environment. Interestingly, the upper working class (UWC) showed great variability: they had a similarly low rate of [ɪn] to the middle class speakers in the formal environments, but a similarly high frequency of [ɪn] to other working class groups in the informal styles. Trudgill (1974) attributed this variability to the upper working class’ greater sensitivity to the social significance of linguistic cues due to their position on the border between the working class and the middle class.

Douglas-Cowie (1978) researched (ING) variation in the context of ingroup versus outgroup communication and social ambition. Douglas-Cowie is a native of the village in Northern Ireland where she did her research, which gave her a unique opportunity to research social interaction between members of the ingroup, in this case, residents of her village. For communication with the outgroup, she recruited a colleague from England, who would also conduct interviews with the participants. She found that (ING) is conditioned by group membership of the interviewer (ingroup/outgroup). Participants used [In] more often when they were in the ingroup setting, and [Iŋ] more often in the outgroup setting. However, the participants who used [In] to a high degree (75% of tokens or more) in the ingroup setting tended to use it almost equally often in the outgroup setting. Douglas-Cowie (1979) explained this result by arguing that these participants had low social ambition, which made them less sensitive to the presence of someone with socially more prestigious speech.

In Canberra, Australia, Shopen & Wald (1981) found that the type of addressee also played a crucial role in conditioning (ING) variation in speech. For example, they found that men used [In] significantly more when the addressee was a friend, than when the addressee was a family member or 'other' (strangers, co-workers, cashiers, etc.). Women did not exhibit such differences in the realisation of (ING) between the friend, family and other categories. Furthermore, they found that participants used [In] more when addressing a man, and [Iŋ] more when addressing a woman, regardless of their own gender.

2.2 Grammatical conditioning

Old English had two suffixes at its disposal for forming a verbal noun, one masculine (*-ing*) and one feminine (*-ung*). Irwin (1967) reports that gender distinction was lost by the beginning of the 14th century, so that the verbal noun of *hælan* 'to heal' was now rendered as

hæling ‘the act of healing’, as opposed to the original *hælung*. This sole surviving suffix is the one that is used for the formation of both verbal nouns and the present participle.

That was not always so, however. Old English had a different suffix for the present participle: *-ende* (Houston, 1985). However, *-ing* forms completely replaced the *-ende* form in the present participle by the 15th century (Hazen, 2006). One explanation for the development of the coronal variant is that some speakers started to use a fronted pronunciation of the *-ing* ending in unstressed syllables, causing the velar [ŋ] to be realised as a coronal [n] (Shopen & Wald, 1981).

There is another explanation however, that states that the coronal realisation actually developed from *-ende*, and that this separate development is responsible for the unusual grammatical conditioning of (ING). Labov (1989) reports that in the early 1980s, a grammatical conditioning effect on (ING) variation in American English¹ was noted in the work of a group of students of the University of Pennsylvania. This phenomenon was independently observed by Shopen & Wald (1981) in Australian English. The grammatical conditioning entails that [In] is most prevalent in verbal word forms, like present participles, less so in gerunds and adjectives, and least of all in nouns like *building*.

The traditional sociolinguistic models could not account for this grammatical conditioning.

However, the historical development of (ING) provided a potential explanation for the grammatical conditioning of this variable. As discussed above, according to one theory of the development of (ING), the velar and coronal variants are not reflexes of the same ending, but rather, the former developed from the verbal noun suffix *-ing*, while the coronal variant developed from the Old English present participle *-ende*.

¹ Labov (1989) did not specify the variety of American English in which the grammatical conditioning effect was first noted.

Houston (1985) explored this question and found evidence that supported this hypothesis. In an experiment, she asked native English speakers in the London urban area to choose from a set of words ending in *-ing* the one which could be realised as [ɪn] in a sentence. When asked this question, the participants consistently chose verbal categories over nominal ones.

While Houston (1985) found reliable evidence for speakers of urban London English, not much research has been done on the grammatical conditioning of (ING) in other varieties of English. Also, while sociolinguistic factors that affect (ING) have been studied extensively, no study has been carried yet which examines sociolinguistic conditioning and grammatical conditioning simultaneously. It is these two concerns that this thesis seeks to address.

3. Data & Methodology

3.1 Data

3.1.1 Corpus

To ascertain which factors influence the realisation of (ING) in American English, the *Santa Barbara Corpus of Spoken American English* (SBC) was chosen because it provided ample amounts of recorded and transcribed speech to examine. The SBC was created by researchers in the Linguistics Department of the University of California at Santa Barbara (DuBois, Chafe, Meyer, Thompson, Englebretson & Martey, 2000-2005). It contains ‘recordings of naturally occurring spoken interaction from all over the United States’ and it ‘represents a wide variety of people of different regional origins, ages, occupations, genders, and ethnic and social backgrounds’. It is freely accessible and contains sixty recordings². For each of the speakers, the following data are given: name, gender, age, hometown, home state, current state, highest education received, years of education, occupation and ethnicity. Thus, all the relevant sociolinguistic factors could be derived from this data.

3.1.2 Data collection

The conversations in the recordings vary in their degree of formality. Recordings of informal speech were more likely to yield accurate results, so recordings made in informal settings were selected. Fortunately the website of the SBC provides a short summary/description for each of the sixty recordings, which allows for easy identification of more formal or more informal interactions. This identification was achieved by paying attention to certain

² <http://www.linguistics.ucsb.edu/research/santa-barbara-corpus>

keywords in the summary/description of the recording. For example, keywords like ‘friends’, ‘brother’, ‘cousin’ or ‘birthday’ were highly likely to indicate an informal setting. Below is a sample description of one of the recordings:

“Face-to-face conversation between two cousins (Fred and Richard) in their early thirties, recorded in a private home in Los Angeles, California. Topics include Richard’s new job selling cars, Fred’s frustration with factory work, and Richard’s recent breakup with his girlfriend.” (DuBois et al., 2000-2005)

Given that the metadata on some speakers was incomplete, the data collection was limited to recordings with complete metadata. After examining the metadata, five recordings were selected, featuring a total of fifteen different speakers. These recordings were selected because they featured speakers from three different, geographically distant regions in the United States, and also because the featured speakers had a balanced representation of ages, gender, education, etc.

3.1.3 Data set description

The data collection process described above yielded a data set containing 300 tokens of (ING). The total number of speakers is fifteen, of which eight are female and six are male. Speakers hailed from rural Montana, Los Angeles, California, and Boston, Massachusetts. Their age varies from fifteen to fifty-three, and the median age is thirty-four. For six speakers, high school is the highest level of education they received, while eight other speakers went to university. Of these, four received a BA degree, three a MA. degree, and one speaker obtained a BSc degree. All except two speakers are of white ethnicity, the other two are of Mexican-American descent. For a complete overview of all speaker data, see the Appendix.

3.2 Variables

Since the aim of the current thesis is to examine the interaction between the grammatical and sociolinguistic conditioning of (ING), several variables had to be identified. The first variable is the realisation of (ING). As (ING) has two variants, the variable is binary, and has two possible states: [ɪŋ] or [ɪn]. In order to test for grammatical conditioning, following Labov (1989), tokens were coded according to the grammatical function of the word in which the specific instance of (ING) occurs: present participle, gerund, adjective, noun. In order to test for sociolinguistic conditioning, tokens were also coded for gender, age, hometown, home state. Note that the last two factors were coded as if they are one, because their values never vary relative to each other, e.g. hometown 'Los Angeles' will always go with home state 'California'. The three sociolinguistic factors were selected because they are the most common in previous research and because they are the ones that were complete in the SBC metadata. The group of young speakers range in age from 15 to 35 years old, while the old speakers range from 35 to 55 years old. This split was made because 35 was the median age, creating two balanced age groups, which both span 20 years, or the length of one generation.

3.3 Analysis

To analyse the data, a multivariate analysis was considered initially. This is because each speaker has multiple sociolinguistic variables associated with them, and also it would allow a statistical analysis of grammatical conditioning and sociolinguistic conditioning at the same time. Unfortunately, the current research was too limited in time and scope to obtain enough tokens to achieve statistical significance. According to Baayen (2006), the number of coefficients (potential outcomes of variables) should be smaller than the total number of the least frequent observations, divided by 20. The least frequent observation in the data of the

current study is [1n], at 125 occurrences, which divided by 20 equals 6.25. This is lower than the amount of coefficients, which is 13. Therefore, a multivariate statistical analysis is not possible. For this reason, analysis was performed with chi-squared tests. Such an analysis would not be able to give any conclusive answers to the research question of the current thesis, but it could function as a case study and indicate potential avenues for further research. In effect, it would make this thesis an exploratory research.

4. Results

The first section of this chapter discusses the results in the context of grammatical conditioning, while the second section will examine the results in the context of sociolinguistic conditioning. Finally, the third section will examine the interaction between the two types of conditioning.

4.1 Grammatical conditioning

The results of the analysis of grammatical conditioning are visually summarised in Table 1 and Figure 1. The first shows the total number of tokens for each grammatical category with their respective percentages of [ɪŋ] and [ɪn], while the latter visually represents the occurrence of [ɪŋ] and [ɪn] as a percentage of the total number of tokens.

The results show that present participles are the only form which have more tokens of [ɪn] than [ɪŋ]: $N = 100/184$ (54%) versus $N = 84/184$ (46%). Gerunds have $N = 28/44$ (64%) for [ɪŋ] and $N = 16/44$ (36%) for [ɪn]. The percentages are even more differentiated in adjectives: $N = 16/19$ (84%) [ɪŋ] and $N = 3/19$ (16%) for [ɪn]. The greatest differences between the percentages can be found in nouns: $N = 47/53$ (89%) for [ɪŋ] versus $N = 6/53$ (11%) for [ɪn]. There is a statistically significant difference between the use of [ɪn] with present participles compared with its occurrence in nouns: ($\chi^2 = 20.590$, $p < 0.0001$). This is in line with Labov's (1989) findings.

Table 1. Total number of tokens with percentages for [ɪŋ] and [ɪn] according to word class

	[ɪŋ] N/Total (%)	[ɪn] N/Total (%)
Present participles	100/184 (54%)	84/184 (46%)
Gerunds	28/44 (64%)	16/44 (36%)
Adjectives	16/19 (84%)	3/19 (16%)
Nouns	47/53 (89%)	6/53 (11%)

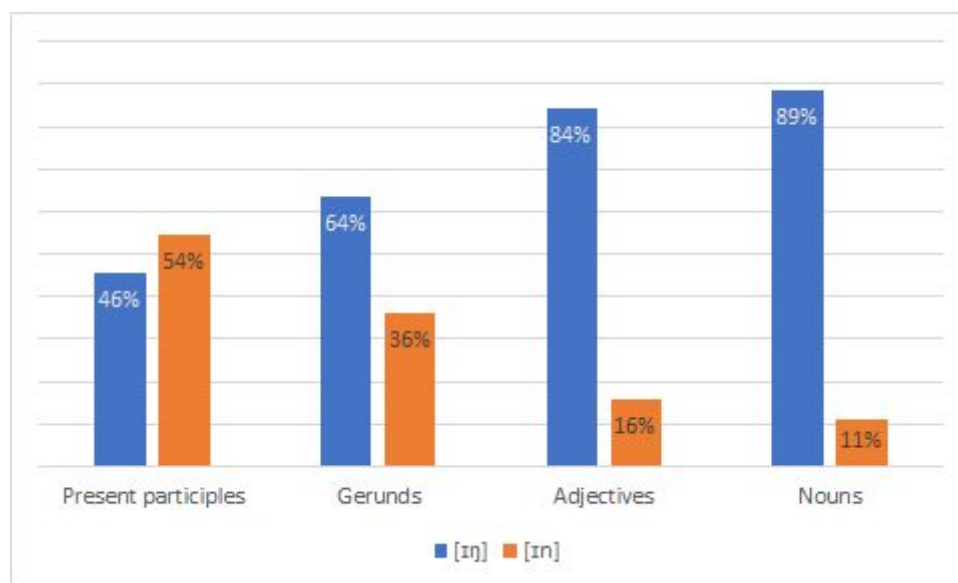


Figure 1. Rate of [ɪŋ] and [ɪn] according to word class

4.2 Sociolinguistic conditioning

The results of the analysis of sociolinguistic conditioning are summarised in Table 2 and Figure 2. For each grammatical category, they show the absolute number of tokens of [ɪŋ] and [ɪn], and also the corresponding percentage of the total. The results for gender appear to contradict Trudgill (1974), as men favour the velar variant: they have N = 66/99 (67%) for [ɪŋ] versus 33/99 (33%) for [ɪn], while women have N = 109/201 (54%) for [ɪŋ] versus N = 92/201 (46%) for [ɪn]. The difference between the use of [ɪŋ] by men and the use of the same variant by women is statistically significant ($\chi^2 = 4.222$, $p < 0.05$).

As for age, the results show that old speakers use the velar variant more often than young speakers. The old speakers have $N = 72/92$ (78%) for [ɪŋ] and $N = 20/92$ (22%) for [ɪn], while young speakers have $N = 103/208$ (50%) for [ɪŋ] and $N = 105/208$ (50%) for [ɪn]. There is a statistically significant difference between the use of the velar variant by the old speakers and its use by young speakers ($\chi^2 = 21.679$, $p < 0.0001$).

Speakers from Montana favour the coronal variant, having $N = 17/69$ (25%) for [ɪŋ] versus $N = 52/69$ (75%) for [ɪn]. This is in contrast with speakers from both Los Angeles and Boston, who favour the velar variant to a similar degree, compared to each other: the former have $N = 89/142$ (63%) for [ɪŋ] versus $N = 53/142$ for [ɪn], while the latter have $N = 69/89$ (78%) for [ɪŋ] and $N = 20/89$ (22%) for [ɪn]. The difference between the occurrence of the coronal variant in Boston compared to its use in Los Angeles and Boston is statistically significant ($\chi^2 = 41.86$, $p < 0.0001$).

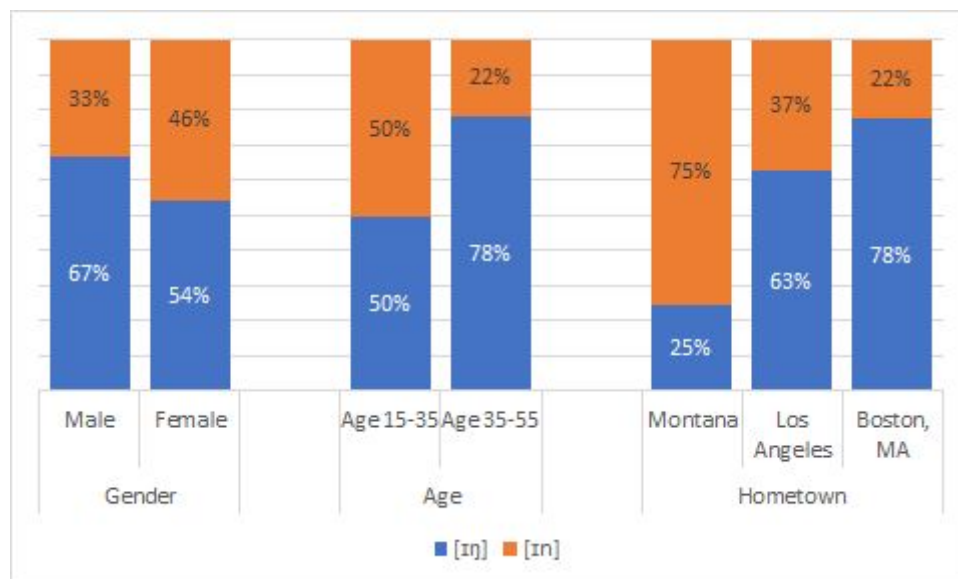


Figure 2. Rate of [ɪŋ] and [ɪn] according to gender, age and hometown

Table 2. *Effect of sociolinguistic conditioning on the realisation of the (ING) variable*

	[ɪŋ] N/Total (%)	[ɪn] N/Total (%)
Male	66/99 (67%)	33/99 (33%)
Female	109/201 (54%)	92/201 (46%)
Age 15-35	103/208 (50%)	105/208 (50%)
Age 35-55	72/92 (78%)	20/92 (22%)
Montana	17/69 (25%)	52/69 (75%)
Los Angeles, CA	89/142 (63%)	53/142 (37%)
Boston, MA	69/89 (78%)	20/89 (22%)

4.3 Interaction between grammatical and sociolinguistic conditioning

Having tested for the effects of grammatical and sociolinguistic conditioning separately, the different types of conditioning were tested simultaneously.

4.3.1 Gender

The results show a marked difference in grammatical conditioning of (ING) variation between females and males. The female results are very similar to the overall results for grammatical conditioning that were discussed in section 4.1, in that there seems to be the same cline with present participles favoring [ɪn] and nouns favoring [ɪŋ]. This is visible in Table 3 and Figure 3, which show the percentage of [ɪŋ] and [ɪn] for males and females in each grammatical category. For females, present participles have $N = 40/113$ (35%) for [ɪŋ] and $N = 73/113$ (65%) for [ɪn], gerunds have $N = 18/31$ (58%) for [ɪŋ] and $13/31$ (42%) for [ɪn], adjectives have $N = 13/16$ (81%) for [ɪŋ] and $N = 3/16$ (19%) for [ɪn], and finally nouns have $N = 38/41$ (93%) for [ɪŋ] and $N = 3/41$ (7%) for [ɪn].

The male results differ to a large degree. Present participles have $N = 44/71$ (62%) for [ɪŋ] and $N = 27/71$ (38%) for [ɪn], contrasting with the overall results for grammatical conditioning in Figure 1 and the female results, where the percentage of [ɪn] was actually higher than the percentage for [ɪŋ]. Statistical analysis shows that the difference between men's use of the velar variant in present participle compared to women's use of the same variant in the same context is significant ($\chi^2 = 12.41$, $p < 0.001$). This could explain the previous finding that women prefer the coronal variant more than men in the context of sociolinguistic conditioning, as the present participle accounts for the largest number of tokens. Gerunds have $N = 10/13$ (77%) for [ɪŋ] versus $N = 3/13$ (23%) for [ɪn]. Adjectives have categorical [ɪŋ], although it should be noted that only three adjective tokens were recorded for males. Nouns have $N = 9/12$ (75%) for [ɪŋ] versus $N = 3/12$ (25%) for [ɪn].

Table 3. *Number of tokens with percentages for [ɪŋ] and [ɪn] according to gender and word class*

		[ɪŋ] N/Total (%)	[ɪn] N/Total (%)
Female	Present participles	40/113 (35%)	73/113 (65%)
	Gerunds	18/31 (58%)	13/31 (42%)
	Adjectives	13/16 (81%)	3/16 (19%)
	Nouns	38/41 (93%)	3/41 (7%)
Male	Present participles	44/71 (62%)	27/71 (38%)
	Gerunds	10/13 (77%)	3/13 (23%)
	Adjectives	3/3 (100%)	0/3 (0%)
	Nouns	9/12 (75%)	3/12 (25%)

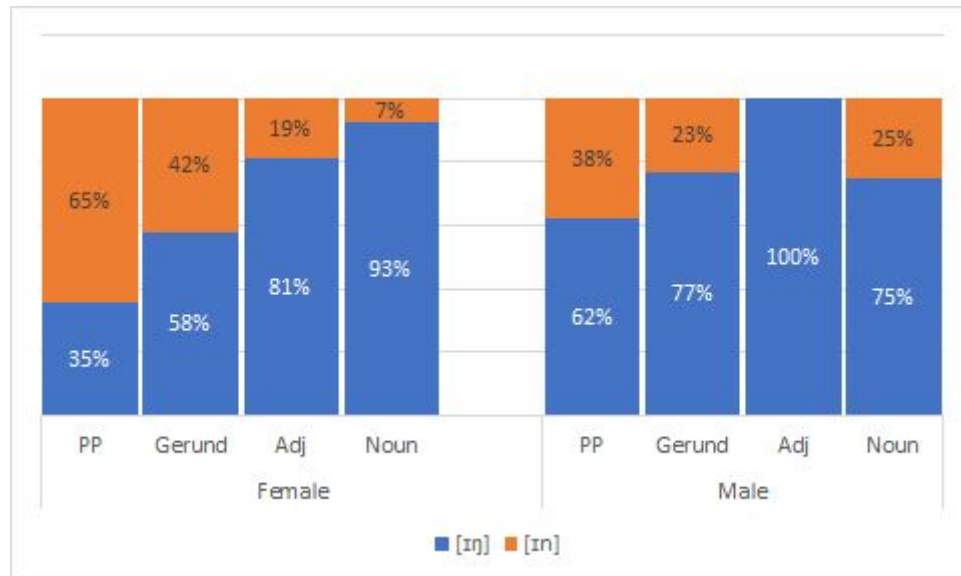


Figure 3. Rate of [ɪŋ] and [ɪn] according to gender and word class

4.3.2 Age

Results indicate a slight difference in the degree of grammatical conditioning between younger and older speakers. The results for both age groups are summarised in Table 4 and Figure 4, which show the percentage of [ɪŋ] and [ɪn] used by the young and the old speakers per grammatical category. The results for the young speakers are similar to the overall results for grammatical conditioning except for the nouns. Present participles have $N = 61/146$ (42%) for [ɪŋ] and $N = 85/146$ (58%) for [ɪn]. With gerunds, the percentages are mirrored exactly: $N = 18/31$ (58%) for [ɪŋ] versus $N = 13/31$ (42%) for [ɪn]. Adjectives have $N = 13/16$ (81%) for [ɪŋ] and $N = 3/16$ (19%) for [ɪn]. Nouns have $N = 11/15$ (73%) for [ɪŋ] versus $N = 4/15$ (27%) for [ɪn].

The results for the old age group show they prefer the velar variant even with present participles. Present participles have $N = 23/38$ (61%) for [ɪŋ] and $N = 15/38$ (39%) for [ɪn]. There is a statistically significant difference between the use of the velar variant with the present participle by old speakers and the occurrence of the same variant with the same word class in young speakers ($\chi^2 = 4.27$, $p < 0.05$). Gerunds have $N = 10/13$ (77%) [ɪŋ] and $N =$

3/13 (23%) for [ɪn]. Adjectives have [ɪŋ] categorically, again due to the small number of adjective tokens. Nouns have $N = 36/38$ (95%) for [ɪŋ] and $N = 2/38$ (5%) for [ɪn].

Table 4. Number of tokens with percentages for [ɪŋ] and [ɪn] according to age and word class

		[ɪŋ] N/Total (%)	[ɪn] N/Total (%)
Age 15-35	Present participles	61/146 (42%)	85/146 (58%)
	Gerunds	18/31 (58%)	13/31 (42%)
	Adjectives	13/16 (81%)	3/16 (19%)
	Nouns	11/15 (73%)	4/15 (27%)
Age 35-55	Present participles	23/38 (61%)	15/38 (39%)
	Gerunds	10/13 (77%)	3/13 (23%)
	Adjectives	3/3 (100%)	0/3 (0%)
	Nouns	36/38 (95%)	2/38 (5%)

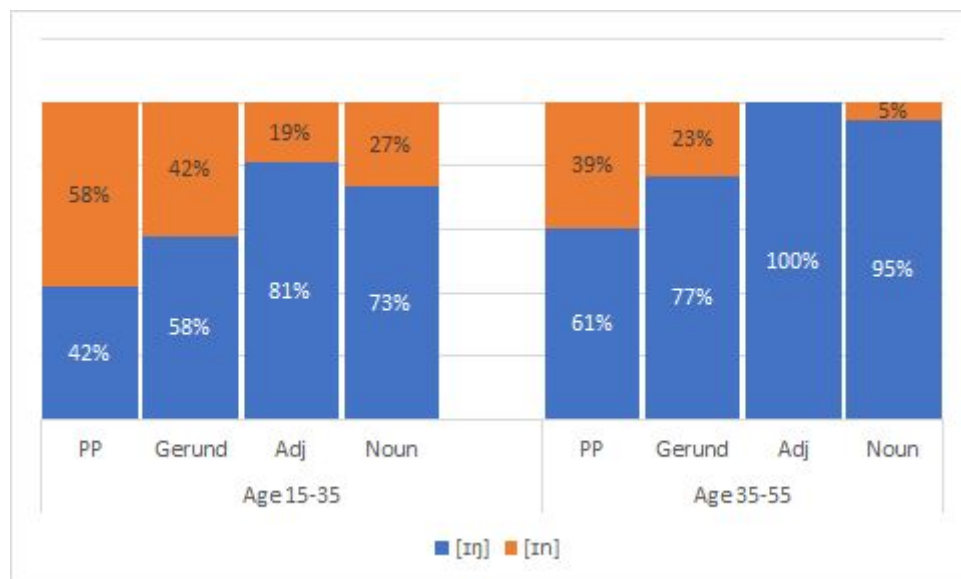


Figure 4. Rate of [ɪŋ] and [ɪn] according to age and word class.

4.3.3 Hometown & home state

The results show some evidence of the grammatical conditioning of the (ING) variable differing in speakers of the different regions tested, specifically rural Montana, Los Angeles, California, and Boston, Massachusetts . Table 5 and Figure 5 summarise the results obtained from speakers hailing from these regions. Specifically, they show the percentages of [ɪŋ] and [ɪn] used in each grammatical category. For the speakers of rural Montana, present participles have a very low frequency of [ɪŋ], at $N = 5/45$ (11%), while [ɪn] has $N = 40/45$ (89%). Gerunds display a similarly extreme ratio, which is unexpected: [ɪŋ] has $N = 2/11$ (18%), while [ɪn] has $N = 9/11$ (82%) . The difference between the use of the coronal variant with gerunds by speakers from Montana and the use of the same variant with the gerund by speakers from Boston is statistically significant ($\chi^2 = 8.224$, $p < 0.005$). For adjectives and nouns the ratios are reversed: adjectives have $N = 3/4$ (75%) for [ɪŋ] and $N = 1/4$ (25%) for [ɪn], while nouns have $N = 7/9$ (78%) for [ɪŋ] and $N = 2/9$ (22%) for [ɪn].

The results for Los Angeles show that three of the four categories behave very similarly to each other. For present participles, the proportion of [ɪŋ] versus [ɪn] is much more balanced compared to Montana: $N = 56/101$ (55%) for [ɪŋ] and $N = 45/101$ (45%) for [ɪn] respectively. The percentages of [ɪŋ] and [ɪn] in gerunds, adjectives and nouns are very similar, as mentioned before, which is remarkable because a lower percentage of [ɪŋ] with gerunds compared to adjectives and nouns was expected. Gerunds have $N = 16/20$ (80%) for [ɪŋ] and $N = 4/20$ (20%) for [ɪn], adjectives have $N = 10/12$ (83%) for [ɪŋ] and $N = 2/12$ (17%) for [ɪn], and finally, nouns have $N = 7/9$ (78%) for [ɪŋ] and $N = 2/9$ (22%) for [ɪn]. No statistically significant difference was found between the use of the velar variant with gerunds by speakers from Los Angeles compared to the same conditions in speakers from Boston ($\chi^2 = 0.045$, $p > 0.05$)

In contrast, the results for Boston, Massachusetts are very similar to the overall results for grammatical conditioning in section 4.1, showing a decline in the percentage of [1n] and an increase in the percentage of [1η] when moving from verbal grammatical categories to nominal grammatical categories. Present participles have $N = 23/38$ (61%) for [1η] versus $N = 15/38$ (39%) for [1n], while gerunds have $N = 10/13$ (77%) for [1η] and $N = 3/13$ (23%) for [1n]. Adjectives have [1η] categorically, which one again is a consequence of the small number of adjective tokens. Nouns have $N = 33/35$ (94%) for [1η] and $N = 2/35$ (6%) [1n].

Table 5. *Number of tokens with percentages for [1η] and [1n] according to hometown, home state and word class*

		[1η] N/Total (%)	[1n] N/Total (%)
Rural Montana	Present participles	5/45 (11%)	40/45 (91%)
	Gerunds	2/11 (18%)	9/11 (82%)
	Adjectives	3/4 (75%)	1/4 (25%)
	Nouns	7/9 (78%)	2/9 (22%)
Los Angeles, California	Present participles	56/101 (55%)	45/101 (45%)
	Gerunds	16/20 (80%)	4/20 (20%)
	Adjectives	10/12 (83%)	2/12 (17%)
	Nouns	7/9 (78%)	2/9 (22%)
Boston, Massachusetts	Present participles	23/38 (61%)	15/38 (39%)
	Gerunds	10/13 (77%)	3/13 (23%)
	Adjectives	3/3 (100%)	0/3 (0%)
	Nouns	33/35 (94%)	2/35 (6%)

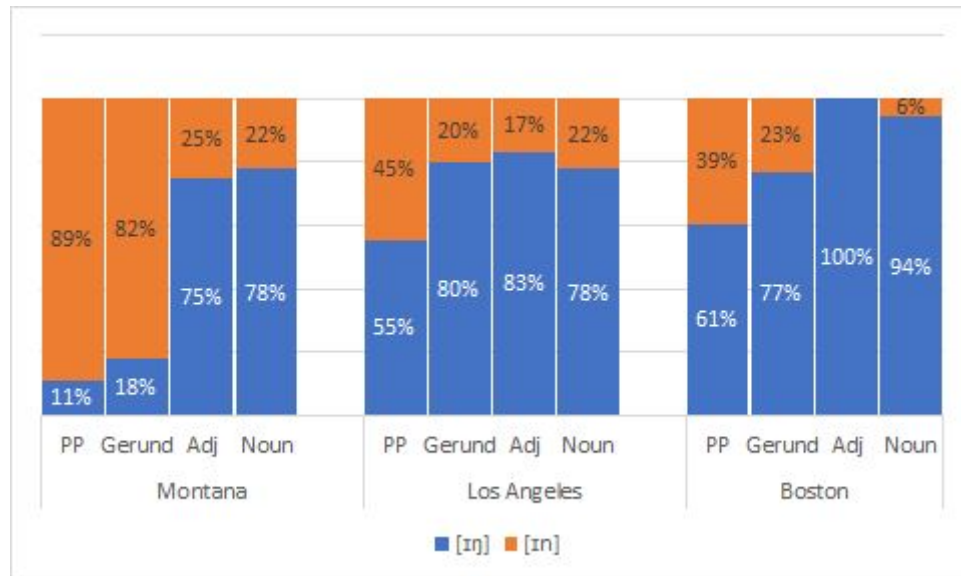


Figure 5. Rate of [ɪŋ] and [ɪn] according to age and word class.

5. Discussion

With regard to grammatical conditioning of (ING) variation, the results seem to agree with Labov (1989) and the results of Houston (1985): the findings show an increase in the usage of the velar variant and a decrease in the usage of the coronal variant, going from verbal to nominal categories. The results militate in favour of Labov's (1989) hypothesis on the historical development that led to the modern pattern of (ING) variation, but the limited size of the dataset makes them inconclusive.

The results of the present study seem to suggest that men are actually less likely to use [In] than women. This is because the data showed that women had a higher percentage of the coronal variant than males in every grammatical category except nouns, though it must be noted that the result for the adjective category is very likely to be inaccurate, due to the very low number of tokens. This tentative result contradicts earlier findings, because Fischer (1958) and Trudgill (1974) actually found that women used the coronal variant less often than men.

With regards to age, the results imply that older people use the coronal variant less often than younger people. This might be evidence for age-grading effect on (ING) variation. A higher percentage of coronal variant usage was found in the 15-35 age group compared to the 35-55 age group. Furthermore, some interaction between age and grammatical conditioning was found: old speakers appear to prefer the velar variant even with present participles, while normally the coronal variant would be expected with the present participle. As far as the present author is aware no study to date tests for the effect of age on the grammatical conditioning of the variation of (ING), so it is difficult to place these tentative results in any existing context.

Finally, the results showed that for the three regions that were examined in the present study the effect of grammatical conditioning on (ING) variation varies according to region. While previous research has found that (ING) variation is presents in a variety of different regions in the English-speaking world, such as New England (Fischer, 1958), Norwich, England (Trudgill 1974), Northern Ireland (Douglas-Cowie, 1978), Australia (Shopen & Wald, 1981) and Philadelphia (Labov, 1989), no research to date has shown that (ING) variation across regions differs with regard to the effects of grammatical conditioning, as the current research has done, albeit not conclusively.

6. Conclusion

In summary, the current thesis posed two questions. The first was whether Labov's hypothesis of grammatical conditioning of the (ING) variable holds more extensively for American English. This hypothesis states the velar variant of the (ING) variable occurs more often with adjectives and nouns, while the coronal variant occurs more often with present participles and gerunds. The present study found evidence that there is in fact more extensive support for Labov's (1989) hypothesis in American English.

Apart from grammatical conditioning, the present study also found some effects of sociolinguistic conditioning on the grammatical conditioning of the (ING) variable. Most notably, it found that women preferred the coronal variant, while men preferred the velar variant, which contradicts previous research (Trudgill, 1974). Furthermore, it found that old speakers favour the velar variant more often than young speakers, which could be evidence for an age-grading effect on (ING) variation. Finally, speakers from rural Montana use the coronal variant more often compared to both speakers from Los Angeles and speakers from Boston.

The second question was whether sociolinguistic conditioning and grammatical conditioning interact, and if so, how. The present study found some evidence that could confirm this question. The results showed a significant difference between the use of the velar variant with present participles by women compared to the use of the same variant with present participles by men. Also, the difference between the occurrence of the velar variant with present participles in old speakers and its occurrence in young speakers was statistically significant. Furthermore, the results showed that speakers from Montana used the coronal variant significantly more with gerunds than speakers from Boston. The current research may

have shed new light on the nature of the differences in the way grammatical conditioning of the (ING) variable is realised in different varieties of English.

The present study is far from conclusive in that it is limited in scope and relies on a small data set. Nonetheless, the findings indicate directions that could be taken up by future research. First and foremost, a future study could collect a larger, more representative, data set which would permit the use of statistical multivariate analysis and therefore guarantee more robust conclusions. Additionally, future research could focus on aspects that the current research did not focus on. For example, it could focus on the effect of socioeconomic status on the grammatical conditioning of the (ING) variable, or it could research how two or more sociolinguistic factors affect grammatical conditioning *together*. Finally, while the current research has shed some preliminary light on the different regional effects of grammatical conditioning on the (ING) variable, future research could not only consolidate these findings, but also research the underlying mechanisms that cause grammatical conditioning to be implemented differently in different regions.

References

- Baayen, R. H. (2008). *Analyzing linguistic data: A practical introduction to statistics using R*. Cambridge, England: Cambridge University Press.
- Douglas-Cowie, E. (1978). Linguistic code-switching in a Northern Irish Village: social interaction and social ambition. In P. Trudgill (Ed.), *Sociolinguistic patterns in British English* (pp. 37-51). London, England: Edward Arnold.
- Du Bois, J. W., Chafe, W. L., Meyer, C., Thompson, S. A., Englebretson, R., & Martey, N. (2000-2005). *Santa Barbara Corpus of Spoken American English, Parts 1-4*. Philadelphia, PA: Linguistic Data Consortium. Accesible at <http://www.linguistics.ucsb.edu/research/santa-barbara-corpus>
- Fischer, J. L. (1958). Social influences on the choice of a linguistic variant. *Word*, 14(1), 47-56. doi:10.1080/00437956.1958.11659655
- Hazen, K. (2006). IN/ING Variable. In K. Brown (Ed.), *Encyclopedia of Language & Linguistics, Vol. 5* (2nd ed., pp. 581-584). Oxford, England: Elsevier.
- Houston, A. C. (1985). *Continuity and change in English morphology: The variable (ING)*. PhD dissertation, University of Pennsylvania.
- Irwin, B. (1967). *The development of the -ing ending of the verbal noun and the present participle from c.700 to c.1400*. PhD dissertation, University of Wisconsin.
- Jespersen, O.A. (1909). *A modern English grammar on historical principles* (Vol. 1). Heidelberg, Germany: Winter.
- Johnston, W. (1772). *A pronouncing and spelling dictionary. To which is now added, a short, and plain grammar of the English language*. London, England: (n.p.).

- Labov, W. (1989). The child as linguistic historian. *Language Variation and Change*, 1, 85-97. doi:10.1017/S0954394500000120
- Ross, A.S.C. (1954). Linguistic class indicators in present-day English. *Neuphilologische Mitteilungen*, 55, 20-56.
- Shopen, T., & Wald, B. (1981). A researcher's guide to the sociolinguistic variable (ING). In T. Shopen, & J. M. Williams (Eds.), *Style and variables in English* (pp. 219-249). Cambridge, MA: Winthrop.
- Trudgill, P. (1972). Sex, covert prestige and linguistic change in the urban British English of Norwich. *Language in Society*, 1(02), 179-195.
- Trudgill, P. (1974). *The social differentiation of English in Norwich*. Cambridge, England: Cambridge University Press.
- Walker, J. (1802). *A critical pronouncing dictionary and expositor of the English language* (3rd ed.). London, England: Wilson & Co.
- Wright, J. (1905). *The English dialect grammar*. Oxford, England: Henry Frowde.