

REDEFINING THE VARIABLE CONTEXT(S) FOR ENGLISH (T/D)-DELETION

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ABSTRACT

The variable deletion of /t,d/ in word-final consonant clusters (T/D) is a ubiquitous feature of spoken English that is conditioned by a number of social and linguistic factors. Phoneticians dispute characterising the process as deletion and prefer gestural overlap or masking with a following consonant. This concern raises the question of whether (T/D) is a single variable or multiple variables. Using spontaneous English data collected in two locales, this paper examines the linguistic conditioning of (T/D) with each following context (consonant, vowel, pause). Multivariate analysis reveals some commonalities across the three contexts, suggesting an underlying shared basis for the variable. Differences across contexts can be explained by the nature of following consonants and effects of frequent lexical items in some contexts.

Keywords: English, deletion, consonants, variation.

1. INTRODUCTION

The variable deletion of underlying /t/ and /d/ in word-final consonant clusters, (t/d-deletion) or (T/D), is considered a ‘showcase’ variable of variationist sociolinguistics [1]. This variable occurs in all varieties of spoken English, has been studied in a number of locales and has been shown to be conditioned by an array of social and linguistic factors [1,2,3,4,5,6,7,8,9].

Phoneticians have objected to using the term ‘deletion’ for this variable, as it implies a complete absence of articulatory gesture [10]. Instead, they suggest that it is better characterised as an overlap or masking of one articulatory gesture by another, especially when the following sound is a consonant. Even without a following consonant, gestural traces may remain, although they are not easy to detect without laboratory methods [11,12].

Until now, (T/D) has been considered as a unitary variable process, but the abovementioned concerns raised by phoneticians suggest that we consider the possibility that it represents different articulatory processes with a similar perceptual output. This paper takes this possibility into consideration by re-analysing data collected in two widely separated

cities (Toronto and Melbourne) to test for the effect of locale, dividing the data into three contexts: before consonants, before vowels and before a pause.

2. DATA AND METHODS

The data on which this study is based are taken from two corpora of sociolinguistic interviews conducted in different cities: Toronto, Canada, and Melbourne, Australia. From 27 recordings of conversational interaction with speakers of British/Irish background (15 in Toronto, 12 in Melbourne, evenly balanced for sex), 2,494 tokens of (T/D) were extracted and coded impressionistically as deleted or not deleted (on the basis of any audible occlusion) by two coders in each location.

Each token was additionally coded for social factors (individual speaker, location and speaker sex) and for a series of linguistic factors shown to be relevant in previous studies:

- whether the /t,d/ shared voicing with the preceding segment (*sand, kept*) or not (*went*) [6];
- whether the /t,d/ shared its place of articulation (coronal) and manner of articulation (non-sonorant) with the preceding sound [6];
- whether the following sound was a consonant, a vowel or a pause;
- if the following sound was a consonant, whether the /t,d/ shared its voicing, place of articulation and manner of articulation with that consonant [6];
- whether the /t,d/ was part of the root morpheme (monomorphemic: *mist, past*), indicated past tense (*missed, passed*), indicated past tense along with a root vowel change (semiweak: *kept, left, told*) or whether it was ambiguous as to its morphological function (*went, built*) [2,3];
- the individual lexical item in which the /t,d/ occurred; and,
- the frequency of that lexical item in each dataset [7,9].

3. RESULTS

A mixed-effects logistic regression analysis of the effects of the above factors on deletion (with speaker

and lexical item as random effects) showed that the effect of the following segment outranked those of all other linguistic and social effects, which provided further justification for conducting separate analyses for each following context.

Table 1 shows the results of three mixed-effects logistic regression analyses for each of the following contexts (logodds values were calculated using sum contrasts, with values centred on 0).

	Following Context					
	Consonant		Vowel		Pause	
	Logodds	N	Logodds	N	logodds	N
Location						
Melbourne	.403	424	---	---	---	---
Toronto	-.403	633	---	---	---	---
Voicing						
Same	-.346	810	-.95	822	-.342	235
Different	.346	247	.95	259	.342	121
Preceding Place						
+coronal	.509	881	.902	820	---	---
-coronal	-.509	176	-.902	261	---	---
Preceding Manner						
+sonorant	---	---	---	---	.529	247
-sonorant	---	---	---	---	-.529	109
Following Place						
+coronal	-.372	355	---	---	---	---
-coronal	.372	702	---	---	---	---
Following Manner						
+sonorant	.373	220	---	---	---	---
-sonorant	-.373	837	---	---	---	---
Morphological Structure						
Monomorph	---	---	1.211	561	---	---
Past	---	---	-.127	404	---	---
Semiweak	---	---	-.509	34	---	---
Ambiguous	---	---	-.576	82	---	---
Frequency						
+1	---	---	.041	---	---	---

Table 1: Factors selected as significant to (t/d)-deletion by following segment.

These analyses reveal a number of differences in the conditioning of (T/D) across following context. Location is selected as significant only with following consonants, with deletion favoured more in Melbourne than in Toronto. The manner of the preceding segment is selected as significant only for following pause, with preceding sonorants favouring deletion. The manner and place of the following consonant are selected as significant, with non-coronal and sonorant consonants favouring deletion. Morphological status is selected as significant only for following vowels, with monomorphemic forms favouring deletion over all past-tense forms (including semiweak and ambiguous forms). Frequency is selected as significant only for following vowels.

There are some consistent effects across contexts. Preceding place is significant across both following consonants and following vowels, with a consistent

favouring effect of coronals, and shared voicing is significant across all contexts, with a favouring effect of different voicing.

Taken together, these results provide some justification for separating the three following contexts. Despite the similarity in the effects of the preceding segment across most or all contexts, variability in deletion is conditioned by different linguistic and social factors. However, these differences do not have ready explanations from a purely phonetic perspective. While the effects of the preceding and following segments may reflect gestural overlap (or differentiation), the morphological and frequency effects require further exploration.

Although the mixed-effects regression models take into consideration the overall rate of deletion of individual lexical items, the underlying assumption is that all lexical items have an equal opportunity of occurring in each context. Figures 1-3, which plot the occurrence of lexical items by their frequency in the dataset and their overall rate of deletion, show that the lexical composition of each context is different.

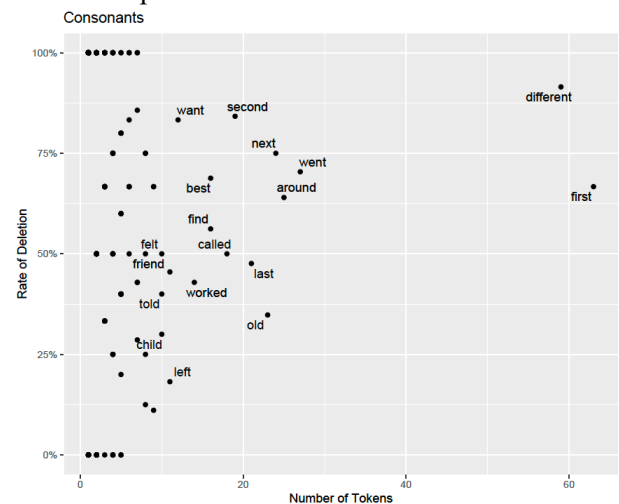


Figure 1: Distribution of lexical items by frequency and rate of deletion before consonants.

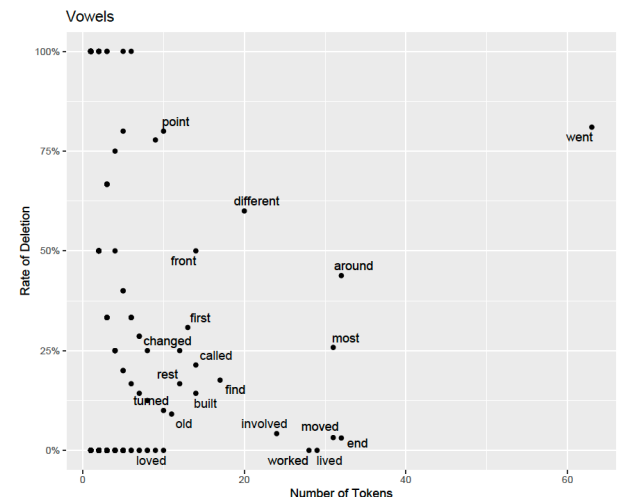


Figure 2: Distribution of lexical items by frequency and rate of deletion before vowels.

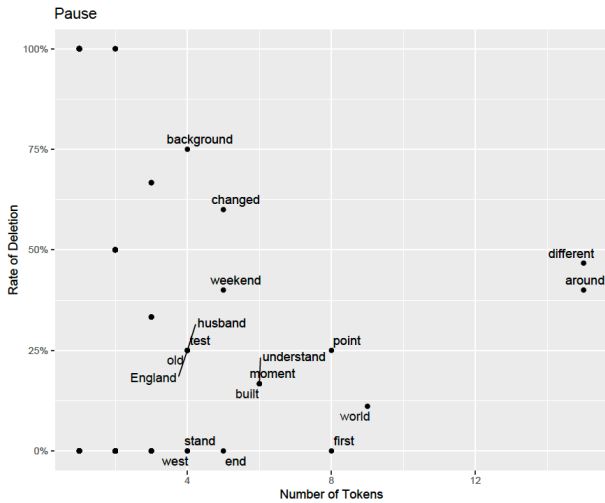


Figure 3: Distribution of lexical items by frequency and rate of deletion before a pause.

In particular, the most frequent lexical items for following consonant and pause are *different* and *first* (consonant) or *around* (pause), which are monomorphemic forms, whereas the most frequent lexical item before vowels is *went*, an ambiguous form. The frequency of each item within each context is not correlated with the rate of deletion: while *went* (before a vowel) shows a relatively high rate of deletion, the rates for *different* differ depending on whether the following context is a consonant or pause.

The interaction between following context and morphological structure becomes even more apparent when the rate of deletion is plotted separately for each location and combination of linguistic factors, as shown in Figure 4.



Figure 4: Rate of deletion by location, following context and morphological structure.

The results shown in Figure 4 are largely consistent for location (with higher rates of deletion in Melbourne) and for some aspects of morphological structure (with monomorphemic forms showing higher rates of deletion). However, the other morphological categories are not consistent across location or following context. Ambiguous forms before a consonant or before a vowel show high rates of deletion but much lower rates of deletion with following pause. Semiweak forms show completely different effects by location and following context: higher deletion before a pause in Toronto but before a consonant in Melbourne. However, a re-examination of the distribution of lexical items (Figures 1-3) suggests that these effects have less to do with phonological and morphological considerations and more to do with the effect of the individual lexical items that make up the ambiguous (*went*) and semiweak (*left*, *kept*, *told*) categories.

4. CONCLUSION

Concerns about the phonetic characterisation of (T/D) prompted conducting separate analyses of the variation by following context. These analyses revealed differences in the morphological conditioning of the variation in different locations, but these differences can largely be traced to the effects of individual lexical items, which show different distributions and rates of deletion in each context. Phonological conditioning by the preceding segment is shared across the three contexts, suggesting that deletion is a unitary phonological process in which differences can be attributed to non-phonological considerations. The effects of following consonants on deletion merits further consideration, although the inability of acoustic methods to detect gestural overlap in conversational data would require innovative methods that combine sociolinguistic data collection with more detailed laboratory analysis [8,9].

5. REFERENCES

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