On English Dental Fricatives

David Rosewarne[*]
Oxford University
Reino Unido

Roxana Beatriz Basso[**]
UNSAM
Argentina

Resumen
En este artículo, se lleva a cabo un análisis de las fricativas dentales inglesas. Nos llama la atención que estas consonantes no gozan de estabilidad en ciertos contextos, por ello los nativos de habla inglesa a veces seleccionan el fonema sordo y otras el sonoro. Además, se abordan los procesos fonológicos de elisión y variación y finalmente, se hacen algunos comentarios sobre la enseñanza y aprendizaje de estas fricativas.

Palabras clave: fonematización, procesos fonológicos, enseñanza, aprendizaje.

Abstract
In this article, the set of English dental fricatives is analysed. Dentals seem to be unstable and, in some contexts, native speakers may select either the unvoiced or the voiced phoneme. This also includes some discussion of phonological processes, such as the elision and variation of dentals. Finally, some comments on the teaching and learning of the pair are made.

Keywords: *phonematization, phonological processes, teaching, learning.*

Fecha de recepción: 21-10-2017. **Fecha de aceptación**: 01-12-2017.

* Magíster por la Universidad de Oxford. Correo electrónico: rosewarned@googlemail.com
** Magíster en Enseñanza del Idioma Inglés y Lingüística Aplicada por *King's College*, Universidad de Londres. Correo electrónico: roxbasso@gmail.com
Ideas, III, 3 (2017), pp. 161-177

Introduction

Twelve of the hundred most frequent words in English are almost always function or grammatical words containing an initial voiced dental fricative /ð/. In the first place on the list is 'the' ranked in frequency order, the other eleven are, *that* (9), *with* (17), *the* (19), *this* (23), *there* (41), *their* (49), *other* (53), *then* (57), *them* (58), *these* (59), *than* (82). The /θ/ symbol appears almost always in lexical items as in *thanks* and *thunder.* When Gimson (1980, p. 217) discusses the frequency of occurrence of consonants, he states that "as a class, the alveolar phonemes emerge as those which occur most frequently in English." Table 1 illustrates the order of frequency of occurrence of the twenty-four consonantal phonemes analysed by Fry (1947), presented in Gimson's book (1980):

Table 1. ORDER OF FREQUENCY OF OCCURRENCE OF ENGLISH CONSONANTS					
1	/n/	9	/k/	17	/ŋ/
2	/t/	10	/w/	18	/g/
3	/d/	11	/z/	19	/ʃ/
4	/s/	12	/v/	20	/j/
5	/l/	13	/b/	21	/ʤ/
6	/ð/	14	/f/	22	/ʧ/
7	/r/	15	/p/	23	/θ/
8	/m/	16	/h/	24	/ʒ/

The sixth most frequent consonant is the dental fricative /ð/, while the unvoiced counterpart /θ/ has rare occurrence and is penultimate in the list above. Later in his manual, Gimson (1980, p. 291) analyses the place assimilation of alveolar consonants. As these have a "relatively high frequency of occurrence" and tend to occur in final position in the word, he mentions that they are subject to neutralization 'as redundant opposition' in very rapid speech. However, as both the frequent dental /ð/ and the infrequent /θ/ may be assimilated, we think this is indicative of the fact that there is no absolute correlation between rate of occurrence and the phonological process of assimilation.

To embark on a study of the pronunciation of dental fricatives in General British English (hence GBE), we consider it essential to deal with: their historical context, their phonemic status and neutralization, their

place of articulation, their phonemic and allophonic variation, phonemic elision and finally, the learning and teaching of GBE dental fricatives.

For this analysis, we consider it necessary to discuss the phonematization and neutralization of these sounds.

The Phonemic Status of Dental Fricative Consonants. Neutralization

Freeborn (1992, p. 21) holds that the runic letter *thorn* <Þ> was pronounced either /θ/ or /ð/ and the letter *eth* <ð> may have been pronounced /θ/ or /ð/. In Icelandic, /ð/ represents a voiced dental fricative, as the IPA symbol does. This could suggest that these two sounds were used interchangeably, that is, apparently, there was no opposition between the voiced or the unvoiced consonant in the orthography of Old English. Paucity of historical linguistic data, however, renders much of this discussion speculative.

Gimson (1980, p. 75) suggests that in Middle English, a very noticeable distributional change occurred in which the Old English allophone [ð] acquired phonemic status, henceforth having contrastive significance with the phoneme /θ/. He holds (1980, p 185) that /ð/ occurs in contexts of voicing due to lack of stress. Examples of this are the grammatical words with initial /ð/, such as *this, they, the, then, there, though* high frequency lexical items with medial /ð/, such as *brother, leather, father*, *mother*, etc.

Owing to a lack of symbols in the Latin alphabet, the IPA drew on the symbol of the Greek letter *theta* to symbolize the unvoiced dental phoneme /θ/ and on the slightly modified *eth* letter for the voiced dental /ð/. As mentioned, these symbols, /θ/ and /ð/, are still used in Greek and Icelandic to represent the voiceless and voiced dental fricatives, respectively.

In the context of orthographic representations of dentals, it is interesting to note that Welsh uses the letters <dd> to represent both /d/ and /ð/ sounds. In Castilian and other varieties of peninsular Spanish, /θ/ is the realization of <z>, and <c> before the vowel letters <e> or <i> in the orthography.

Given that [θ] and [ð] may have been interchangeable sounds in the distant past of the English language, there are some remnants with phonemic neutralization and no meaning distinctions in GBE. A case worth analyzing is that of singular words ending in /θ/. Daniel Jones (1969, pp. 182-183) points out some basic rules for the plurals of these words:

1) A long vowel or diphthong determines a voiced cluster /ðz/ in *paths* /pɑ:ðz/.
2) Some exceptions are heaths /hi:θs/, faiths /feɪθs/ and growths /grəʊθs/. We think this is possible because the second vocalic elements of the diphthongs preceding the plural cluster /θs/ are high, although phoneme alternation is heard in the unvoiced or voiced dental cluster in *oaths* /əʊθs /, /əʊðz/.
3) A short vowel before the plural determines a voiceless cluster in *myths* /mɪθs/, and we think that a vowel before /r/ has a voiceless cluster in *births* /bɜ:θs/ because in the past the vowel was short /bɪrθs/.

Tables 2.1, 2.2, show alternation between the unvoiced and voiced dentals. In table 2.1 the first pronunciation in Wells' dictionary (2008) includes the voiceless dental, whereas the first in 2.2 involves the voiced dental.

Table 2. 1. /θ-ð/ Alternation in GBE		
Earthen	'ɜ:θn	'ɜ:ðn
Southall	'saʊθɔ:l place in London	'saʊðɔ:l 'sʌðɔ:l family name
Table 2. 2. /ð-θ/ Alternation in GBE		
Arthington	'ɑ:ðɪŋtən	'ɑ:θɪŋtən American English
Hotham	'hʌðəm	'hɒθəm
Mather	'meɪðə 'mæðə	'meɪθə
Smythe	'smaɪð	'smaɪθ

By contrast, in table 3 below, two sets of homographs are found, in which neutralization does not occur. Here a change in voice entails a semantic modification. The contexts of these terms differ. The short form of thousand, *thou*, is used in informal style, while the archaic personal pronoun *thou* is unlikely to be heard in everyday speech. Similarly, *Eth* is a biblical name, heard in the context of Bible reading probably, whereas the letter *eth* may be used in discussions on history, or history of the language.

Table 3. Change of meaning	
Thou /θaʊ/ (Thousand)	Thou /ðaʊ/ (pronoun)
Eth /eθ/ (name)	Eth /eð/ (name of Anglo-Saxon letter)

We know of two words that contain both dental fricatives, although they are not very colloquial ones, the following is an example: Therewith and thenceforth, he gave up eating garlic.

In the next section, we will outline the position of articulation of these sounds.

Place of Articulation

Two different phonetic realizations of /θ/ and /ð/ are the dental and interdental places of articulation. For the former, the tip of the tongue lies behind the upper incisors, the airflow passes between the flat surface of the tongue and the upper teeth with turbulence, as for most speakers of GBE. For the latter, the tip of the tongue protrudes slightly between the upper and lower teeth, there being turbulence between the tip and/or blade and the upper teeth. According to Ladefoged and Maddieson (1996, p. 143), interdentals are symbolized with a cross under the characters [θ̪ , ð̪], and occur in the pronunciation of Californian English.

David Rosewarne (1984, 1994, 2009) has examined a popular accent, which he called Estuary English (due to its southern English origin), now spreading to the North. He reports the vocalization of the lateral consonant in milk [mɪwk] and cases of intervocalic glottaling of the alveolar plosive /t/ in *city* ['sɪʔɪ], among other changes. Some of these speakers do not use the dental fricatives /θ/ or /ð/ but select the labiodental fricatives [f], or [v], respectively. Thus, they pronounce *thick* as [fik] and *mother* as ['mʌvə].

Bearing in mind the different articulations of dental fricatives, we have noticed two other important changes of pronunciation in connected speech: the phonemic and allophonic variation, and elision of the English dental fricatives.

Phonemic and Allophonic Variation

In this section, we discuss different types of variation: a) phonemic variation of place; b) the phonemic and allophonic variation of fortis/lenis

dental fricatives, also called voiced/voiceless variation; and c) progressive variation of manner of /ð/, phonemic and allophonic modifications.

a. Phonemic variation of place: /ð/

Gimson (1980, p. 291) holds that final /ð/ may change its place of articulation and may assimilate to /z/ or /s/, before /s,z/, in fast speech. In the first sentence, he provides the example of regressive variation from /ð/ to /z/ before /s/. In the second and third, *the* may assimilate to /s,z/ after /s,z/, this is progressive variation. However, we have not found any instances of /ð/ changing into /s/.

1. I loathe singing. /aɪ 'ləʊz ˌsɪŋɪŋ/
2. What's the time? /'wɒts zə ˌtaɪm/
3. Has the post come? /'hæz zə ˌpəʊst kʌm/

b. Phonemic and allophonic variation of fortis/lenis dental fricatives, also called voiceless/voiced variation

According to Gimson (1980, pp. 287-289), words ending in lenis fricatives followed by fortis consonants are liable to undergo two processes: either a) an allophonic or b) a phonemic change in close-knit phrases, as seen in 4 a, and 4 b below. Example 4 a. has a partial allophonic modification, with devoicing of [ð̬], while example 4 b. presents a more complete process of phonemic regressive lenis-fortis variation, given the fact that /ð/ changes into its fortis counterpart /θ/. As a result, phonetically, a long continuant is heard, with clipping of the vowel that precedes it.

4. With thanks a. wɪð θæŋks [wɪð̬ `θæŋks]
b. wɪð θæŋks /wɪθ `θæŋks/

Gimson (1980, p. 289) states that variation from fortis to lenis sounds is practically non-existent in GBE. However, we have recorded a number of instances of the voiceless dental /θ/ assimilating to a voiced /ð/ between voiced sounds.

5. I think / aɪ 'ðɪŋk/
6. South Africa / saʊð 'æfrɪkə/
7. South East / saʊð 'i:st/
8. Everything / 'evrɪðɪŋ/
9. Nothing / 'nʌðɪŋ/
10. Something / 'sʌmðɪŋ/

The organs of speech are relaxed for the pronunciation of collocations or words often used in 5, 6, and 7, at word boundaries and in 8, 9 and 10, at morpheme boundaries. A lenition and approximation process occurs, since the main body of the tongue is in a relatively open or mid position for the articulation of the vowels that precede the dental sounds. However, it seems that in *North East* /nɔːθ ˈiːst/ the intervocalic dental remains fortis because the vowel in *North* is both back and high, making the whole process more complex.

Examples 5 to 10 cannot be accounted for as either regressive, or progressive variations, since the processes occur in either initial /aɪ ˈðɪŋk/, or final position /saʊð ˈæfrɪkə/, /saʊð ˈiːst/ in the word, in unstressed morpheme initial position /ˈevrɪðɪŋ/, or in unstressed morpheme final position as in /ˈnʌðɪŋ/. This process involves the co-articulation of the voiced dental phoneme in intervocalic position in examples 5 to 9 and between voiced sounds in example 10.

A dilemma arises with reference to terminology. It would be preferable to use the labels *fortis/lenis*, in that order, to refer to the lenition process by which /θ/ moves in the direction of /ð/. On the other hand, it would be equally useful to show a *voiceless* to *voiced* modification of dental phonemes since they are in phonetic intervocalic contexts. To take this into account, we have determined to use both labels: this is *fortis/lenis - voiceless/voiced* variation of dentals. It must be borne in mind that Gimson (1980, p. 289) and Cruttenden (2001, p. 310) were both analyzing a different direction of change, namely from lenis to fortis or voiced to voiceless phonemes.

c. Progressive variation of manner of /ð/, phonemic and allophonic modifications

Gimson (1980, p. 292) mentions that variation of manner is heard in very rapid speech, a popular pronunciation not being acceptable in GBE. Below are his examples of progressive assimilation of the voiced dental becoming an alveolar nasal phoneme:

11. He wasn't there /hi ˈwɒnn(t) ˌneə/
12. To win the race /tə ˈwɪn nə ˌreɪs/

Example 11 above presents several modifications: the voiced alveolar fricative /z/ changes into an alveolar nasal /n/, this is regressive manner of assimilation. There is a possible elision of final /t/, and progressive assimilation of manner and place of stressed initial /ð/ to /n/. Example 12, by contrast, has two changes: /ð/ assimilates to /n/, changing manner and place of articulation

in unstressed position. Consequently, as fewer modifications occur in 12, we think this appears to be more acceptable in GBE than 11.

According to Roach (2000, p. 140), progressive variation of manner is found in rapid and casual GBE. He considers that less obstruction to the flow of air is found, if a plosive or nasal precedes a word initial /ð/. This means that the initial consonant often becomes a dental allophone, identical in manner to the final consonant as seen below.

13. In the	/ɪn ðə/	[ɪn n̪ə]
14. Get them	/get ðəm/	['get t̪əm]
15. Read these	/ri:d ði:z /	['ri:d d̪i:z]

Our view is that this type of variation should no longer be stigmatized in casual GBE.

The analysis of these three instances shows that what used to be the progressive dentalization of alveolars is now changing into a more complete allophonic variation of the voiced dental, having a progressive plosive articulation. We have recorded two other instances of the said allophonic variation:

16. …but the flags	[bət d̪ə ˈflægz]
17. I need those books	[aɪ ˋni:d d̪əʊz bʊks]

Roach (2000, p. 140) also mentions that a final plosive may become a fricative or nasal, whereas a final fricative does not change into a plosive. We deem it necessary to add that, in final position, a plosive may change into a continuant because the organs of speech relax, while a fricative cannot become a stop at the end of an intonation phrase, by the same argument.

However, unlike the cases of variation outlined above, we have observed a change of manner of /ð/ into a dental plosive allophone [d̪] if initial /ð/ is preceded by pause in an intonation phrase. This modification of /ð/ can occur both in initial stressed (see examples 18 and 19 below) or unstressed positions preceded by silence (see examples 20 and 21).

18. This is what I need	['d̪ɪs ɪz wɒt aɪ ˋni:d]
19. That's interesting	['d̪æts ˋɪntrəstɪŋ]
20. There's something	[d̪əz >sʌmθɪŋ]
21. The story	[d̪ə ˇstɔ:ri]

As modifications do not occur in interconsonantal contexts in 18 to 21 above, a more general label *variation of manner* rather than *assimilation* is preferred in this analysis, in order to cover both more traditional assimilations and other variations of a consonant preceded by pause.

Lastly, not only phonemic and allophonic variation but also elision of /θ/ and /ð/, we consider to be another pertinent point for further discussion in the following section.

Elision of /θ/ and /ð/

a. Elision of /θ/

Gimson (1980, p. 234) holds that, as native speakers wish to simplify the articulation of complex clusters, they often drop alveolar plosives in the middle of a sequence of three consonants since meaning is fully understood in a discoursal context. It is worthy of comment that both dentals are apt to be dropped, as well. It should be noticed that despite its infrequent occurrence, /θ/ is elided in a greater number of contexts than /ð/. For example, /θ/ may be dropped in the phrase *something else:* ['sɐ̃mĩŋ `els], with strong nasalization of the two vowels [ɐ̃, ĩ].

According to Gimson (1980, p. 236) elision of /θ/ in inter-consonantal position in words of Greek origin can be observed in the sequence of phonemes /-sθm-/ in *asthma* /'æsmə/ and *isthmus* /'ɪsməs/ and in the sequence /-nθs-/ in the plural of the Anglo-Saxon word *months* /mʌns/. There is also an alternative pronunciation of two of these words with elision of /θ/ and inclusion of /t/ in /'ɪstməs/ and /mʌnts/. It is interesting that it is /s/, not /θ/, in the voiceless fricative sequence /sθ/ in *anaesthetist* /ə'ni:(s)θətɪst/ that disappears, due to the noise components and proximity of these continuants.

Wells' dictionary (2008) describes the pronunciation of some ordinal numbers, which are worthy of attention; see column 2 in table 4 below. As shown in column 3, these possess complex clusters with /θ/, liable to elision in three examples. In very casual speech, as in the word *sixths,* there is a very long final sequence of four consonants, the cluster /θs/ can be dropped or can undergo elision of /θ/ and/or inclusion of /t/. In column 4, inclusion of /t/ is seen in three words. In column 5, elision of a consonant other than /θ/ is also possible. Here, the pronunciation of the word *sixths* has been asterisked since, according to Wells, this as an instance of non-

native speaker error, Argentinian EFL learners being a case in point. He also shows that the word *eighths* may have elision of /t/ in General American.

Table 4. Elision					
	1. Spelling	**2. Full Pronunciation**	**3. Elision of /θ,s/**	**4. Inclusion of /t/**	**5. Elision of /t,f/**
1	**Fifths**	**fɪfθs**	**fɪfs**	**fɪftθs**	**fɪθs**
2	**Sixths**	**sɪksθs**	**sɪks, sɪkst**	**sɪkstθs**	*** sɪkθs**
3	**Twelfths**	**twelfθs**			**Twelθs**
4	**Eighths**	**eɪtθs**			**eɪθs GA**
5	**Tenths**	**tenθs**	**tens, tents**	**tentθs**	

In *thank you*, Jones (1962, p. 245) explains that it is not necessary for a native speaker of English to utter the complete first syllable of the expression *thank you*. When /k'kju:/ is heard, the stress of the first syllable before the voiceless velar plosive plus the objective pronoun *you* may be interpreted as an acknowledgement of receipt of information. We have also noted the elision of /θ/ in initial position in the word *thanks* [æ̃ŋks], even when preceded by pause, there being considerable nasalization of the vowel. Another recurring instance of elision of /θ/ we have noticed when giving an opinion is that of *I think,* [aɪ̃ŋk], it is always produced with strong nasalization of the vowel and where, as mentioned above, it is also possible to use a lenis approximant instead of elision.

b. Elision of /ð/

Some cases of elision of /ð/ are heard on account of a clear linguistic and pragmatic context. Only one lexical item *clothes* is mentioned by Gimson (1980, p. 184). For example, worried mother could say that her child '*has no warm clothes on'*, /hæz 'nəʊ wɔ:m `kləʊz ɒn/.

We have noticed that grammatical items may sometimes exhibit elision of /ð/ when preceded by consonant. In the weak form of the object pronoun *them*, for example, /ð/ may be dropped in '*bring them quickly*' /brɪŋ əm `wɪkli/. Besides, the demonstrative pronoun *that,* always realized with a strong vowel, may have a loss of initial /ð/ in stressed position, preceded by consonant:

22. In that case /ɪn ˇæt keɪs/

23. How's that? /ˈhaʊz `æt/
24. Is that what you want? /ˈɪz ´æt wɒt ju wɒnt/

Here, /ð/ may undergo assimilation of manner as well, as seen in section 5 c. above, which shows the change of /ð/ into a dental nasal [n̪], in example 22 and into a alveolar fricative [z] in examples 23 and 24. In cricket, the cry of *How's that?*, when calling a batsman out is often written *How zat?*

Cruttenden (2014, p. 320) states that 'in casual speech there may be assimilations of manner or unpredictable elisions of /ð/ and /l/ as in *well that's all right* /we ˈæts ɔ: `raɪt/', where /ð/ is surprisingly in an intervocalic context.

In General American the item *than* may be liable to elision of /ð/ between /r/ and /n/, namely, in 'I'm better than them' /aɪm ˈbetər ən`ðem/. Despite being a non-rhotic accent, GBE permits the pronunciation of the final linking /r/ in the above utterance, since *linking r* is a historical vestige difficult to account for in this case.

We have examined the distribution, neutralization, place of articulation and the phonological processes of dental fricatives, because we think they are essential for the production and teaching of dental fricatives.

The Learning and Teaching of Dental Fricatives

In the following paragraphs, some general comments on the teaching of dental fricatives will be made. These arise from the observation of some difficulties River Plate Spanish Speakers encounter. However, first we consider it necessary to discuss dental fricatives with respect to the inventory of sounds taught in the EFL classroom.

Jennifer Jenkins (2000) discusses the intelligibility of English as a *lingua franca*. As it is complex to teach and learn English pronunciation, she believes that teachers should focus on a core of certain features of pronunciation on account of what can be learned effectively. Dental fricatives are not included in Jennifer Jenkins' Lingua Franca Core (LFC) list of phonemes to be used for English as an International Language (EIL) communication. The LFC excludes dental fricatives "as not being necessary to safeguard EIL phonological intelligibility" (Jenkins 2000: 138). Jenkins weighs the merits of such substitutions as /f/ and /v/, /t/ and

/d/ and /s/ and /z/, but does not stipulate what should replace the dental fricative pair in the LFC.

If the LFC were to become established without dental fricatives in its consonant inventory, mother tongue speakers of English who were engaged in international communication in the language could find themselves in a difficult position. They would be expected to replace their dental fricatives with the consonants used by their EIL interlocutors. "In these areas, it is L1speakers who will be obliged to make productive and receptive adjustments if they, too, wish to interact in English internationally" (2000, p. 135). If these productive adjustments include suppressing their use of dental fricatives, it is not clear which of the alternative sound pairs /f/ and /v/, /t/ and /d/, /s/ and /z/, the L1 speaker should choose.

Jenkins claims that dental fricatives are among those "sounds which are likely to prove especially difficult for learners," but does not claim they are unteachable. "Indeed, it may turn out to be precisely the 'exotic' nature of certain sounds for L2 learners which sometimes makes them amenable to classroom teaching/learning" (2000, p. 134; emphasis in original). There is a suggestion that dental fricatives could receive pedagogical attention "in the spoken in receptive pronunciation work, without focusing on these features in productive work" (2000, p. 133).

Jenkins' argument for the exclusion of /θ/ and /ð/ is difficult to support. She overlooks that dental and interdental fricatives are found in some languages spoken by a great number of speakers such as Spanish. Furthermore, it is paradoxical that despite her aim of avoiding prescriptiveness, Jenkins appears to have taken it upon herself to decide for non-mother tongue learners that it is best for them not to have /θ/ in their inventory of English sounds.

Non-native learners of English often experience difficulty in making the distinctions between "south/north" with voiceless dental fricatives and "southern/southerly, northern/northerly," which contain the voiced counterpart. With reference to muscular effort, it is important to stress that the fortis/lenis opposition between /θ/ and /ð/ is part of the pronunciation system that pertains to the English language itself. In general, the Latin-American Spanish system does not present such noticeable distinction. Thus, for the production of the eight pairs of obstruents, EFL learners must be aware of the fortis/lenis opposition existing between these sounds in English. EFL pupils need to be able to shorten or lengthen the vowel of

a syllable closed by a fortis or lenis dental, accordingly. In intermediate level groups, teachers could introduce cases of neutralization of singular nouns ending in /θ/, where the three basic rules of the pronunciation of plurals could be used to practise the fortis/lenis opposition.

In a comparison between English and River Plate Spanish, what needs highlighting is that for the articulation of most voiceless and voiced Spanish consonants, less effort is needed. A Spanish speaker in the process of learning English pronunciation may go through two main stages: a first stage, where s/he makes a considerable effort for the production of most English consonants. Once s/he has acquired this skill, s/he may embark on attaining a more accurate distinction between fortis and lenis sounds in English, which involves the fortis/lenis dentals, as well.

We must point out a remarkable coincidence between English children learning their mother tongue and River Plate Spanish-speaking children attempting to utter their first words in English. These children generally substitute initial /θ/ for [f] in the word *three* [fri:], as stated in 3 above. This is also the sound used by some speakers of Estuary English in Southern England. It must be borne in mind that a) the unvoiced dental is not a phoneme in River Plate Spanish, and b) /θ/ and [f] are low intensity fricatives in English, which are voiceless and therefore more difficult to hear in discourse, especially if the places of articulation of these consonants are very close.

To avoid such problems in the EFL classroom, some Phonetics lecturers and EFL teachers believe that it is much simpler to teach the interdental version of the pair of fricatives in question. Trainees are instructed to follow this tradition, since, apparently, it is easier to check up on the pronunciation of this set. On seeing that their pupils thrust their tongues forward, teachers take for granted that /ð/ learning is taking place. They tend to forget, perhaps, naively, that background noise in the classroom may not allow them to listen for what may be really occurring. Sometimes, pupils make such an effort that only undesirable plosion is heard, in spite of the perfect interdental articulation.

Two other disadvantages of the interdental articulation of fricatives follow below:

a. If children, or sometimes adults, are told to protrude the tip of the tongue, to a degree unnatural in a mother-tongue English speaker, the place of articulation is distorted. This may also lead to the expulsion of saliva,

a process not normally associated with the native-speaker production of the sound.
b. Fluency may be lost for the pronunciation of the following sequences of sounds in connected fast speech, /θs/, /θd /, /ðz/, /ðd/, /vð/, /ðd/, /sθs/, among others.

Therefore, articulating the tongue behind the upper teeth may be much simpler in the long run, as the old adage holds: *practice makes perfect.*

At times, learners cannot cope with the complex consonant clusters of English, since Spanish has a much simpler combination of sounds, where a vowel may be preceded or followed by one and, sometimes, two consonants. Thus, in *sixth division*, /'sıks dı`vıʒn/ English allows simplification towards elision, but EFL learners may utter unexpected elisions such as /*'sık dı`vıʒn/. In the classroom, teachers need to work on the elision and variation of voice, manner and place mentioned in 4 above. Listening tasks with these simplifications could be introduced to provide the learners with the opportunity to become aware of variation first and to imitate such pronunciation, bearing in mind that pronunciation taught in context is likelier to be acquired. It would be contrary to the professional role of the language teacher if s/he were to set limits on the full development of the phonological talents of learners. It would be more professionally questionable for the teacher to prevent the learner with a good ear for phonemes from producing accurate dental fricatives in English. The risk may be that a teacher with an unquestioning reading of Jenkins could often oblige his or her students to produce [f] and [v] in place of the English /θ/ and /ð/.

Common errors are heard in learner's renderings, where the voiceless dental is near a voiceless alveolar fricative /s/. Sometimes, the error consists of changing the place of articulation of /θ/ to /s/, as in *from synthetic speech*, /*frm sın'setık ´spi:ʧ/, something /*'sʌmsıŋ/, or /s/ to /θ/, as in *this thing* /*`ðıθ θıŋ/. Here it is important not to produce a lisp, or a voiceless alveolar altogether. Both the dental and the alveolar places of articulation should be produced accurately and slowly. It is necessary to produce these with no vowel in between /sθ - sθ - sθ/.

If the exercise were too complex, to produce clusters involving /s/ and /θ/, it would be useful to start with the following task. Students could

attempt to utter a very strong /s/ by putting a finger on the distal part of the sternum. They would need to press it down intermittently while producing /s/. For this, they could picture the image of an old bicycle pump. The second stage would consist of producing the cluster /θs/, where a dental and an alveolar fricative are involved, by trying to press down the finger repeatedly without thrusting the tongue forward.

Two other difficult sequences are /ðd/ in *birthday* and /vð/ in *of that*, *of those*, *of the*, etc. For the articulation of the first cluster, the dental sound could be produced with the tip of the tongue against the upper teeth and the alveolar with the blade against the teeth ridge, while a very short and quick movement takes place between them, trying to avoid displacing the tongue from its position. In the second sequence, the upper teeth articulate with the lower lip, whereas the tongue-tip should move fast towards the lower teeth first, and as soon as the labiodental stricture is released, the tip is quickly placed in the corresponding dental articulation.

Another error involves substituting the voiced dental fricative for other consonants in phrases where /ð/ is near an alveolar plosive as in *the time*, *the day*. To correct such an error, learners could try to produce the two sounds in a sequence where no vowel is involved between these, as in /ð'də- ð'də- ð'də/ and then another sequence of sounds such as /'dəðə-'dəðə-'dəðə-'dəðə/. For the accurate rendering of these, it is necessary to stress the consonants as shown and to utter the sounds without protrusion of the tongue.

On the other hand, learners trying to utter the affrication of /t/ and /d/ may inadvertently transfer it to the preceding dental /ð/, which, as mentioned above, is an allophone of /d/ in Spanish. As a result, a very affricated voiced alveolar plosive may be heard in the pronunciation of the article *the* instead of a fricative. If a native speaker heard this affrication s/he could take a certain time to understand the nature of the error, with the risk of a breakdown of communication ensuing. However, as pointed out in 4 c above, a voiced dental plosive may be produced instead of a dental fricative. Possibly, with the new developments in the language, at some time in the future, it will not be inappropriate to find a frequent initial dental plosive [d̪] in an utterance such as *this is a beautiful day*

['d̪ɪs ɪz ə `bju:tɪfl deɪ].

Conclusion

As the result of the analysis of dental fricatives, the following has been touched on: First, as the pair of dental fricatives were probably allophones of the same phoneme in Old English, or Old Norse, they are found in contexts of neutralization in current English as, for example, in the plurals of words such as *paths* /pɑːðz/. This lack of opposition in the distant past may now allow dentals to undergo phonological processes different from those of alveolars.

Second, Gimson's frequency argument dealing with alveolars occurring in final position in the word, thus rendering them liable to phonological modifications needs to be restated. Although infrequent, /θ/ may suffer processes of variation and elision, as well as the frequent phoneme /ð/.

Third, initial /ð/ may be very flexible. Variation of manner can occur after a consonant in stressed or unstressed position, or when preceded by pause.

Fourth, unlike most alveolars, which tend to undergo regressive assimilation, the dental fricative /ð/ is generally involved in changes of a progressive nature.

Fifth, with reference to degree of force, /θ/ may be involved in an intervocalic lenition process. As a result, /θ/ may also undergo a change into a more open stricture of approximation.

Sixth, the stopping of dentals in GBE may need to be welcomed, if used with prudence. /ð/ may be involved in a change from a fricative to a plosive articulation, in which the organs of speech have a total closure in readiness for the energetic beginning of an utterance, or when preceded by alveolar plosives.

Seventh, both dental fricatives may undergo elision, /θ/ in medial or final position in the word, while /ð/ may be dropped in post-consonantal position, if initial, in the weak and strong forms of some grammatical words.

Eighth, no affrication of dentals should be accepted. Such errors may not be interpreted as a dental articulation by native speakers and due to likely high frequency of error, misunderstanding of the message may ensue. It should not be the role of the language teacher to prescribe

phonemes in a living language, nor to set arbitrary upper limits on the phonological performance of learners of English.

To conclude, in view of what has been said above, contrary to what Jenkins suggests, we think the dental fricatives should remain in the inventory of phonemes to be taught in the EFL classroom. It would be unwise to exclude the voiceless dentals from the pronunciation inventory.

References

Cruttenden, A. (2014). *Gimson's pronunciation of English*. 8th ed. London and NY: Routledge.

Freeborn, D. (1992). *From old English to Standard English*. England: The Macmillan Press.

Fry, D. B. (1947). The frequency of occurrence of speech sounds in Southern English. *Archives Néerlandaises de Phonétique Expérimentale*, vol. xx

Gimson, A. C. (1980). *An introduction to the pronunciation of English*. 3rd ed. London: Edward Arnold.

Jenkins, J. (2000). *The Phonology of English as an International Language*. New Models, New Norms, New Goals. Oxford: Oxford University Press.

Jones, D. (1969). *An Outline of English Phonetics*. 9th ed. Cambridge: Heffer.

Jones, D. & Roach, P. (2006). *English Pronouncing Dictionary*. 16th Ed. Cambridge: CUP.

Ladefoged, P. & Madieson, I. (1996). *The sounds of the world's languages*. Oxford: Blackwell.

Laver, J. (1994). *Principles of phonetics*. Cambridge: CUP.

Roach, P. (2000). *English phonetics and phonology*, 3rd ed. Cambridge: CUP.

Rosewarne, D. (1984). Estuary English, *Times educational supplement*, 19 http: //www.phon.ucl.ac.uk/home/estuary/

(1994) Estuary English – tomorrow's RP? *English Today* 37, Vol. 10, No. 1, pp. 3-8. http://www.res.co.uk/David Rosewarne/ 13 November 2009

Wells, J. (2008). *Longman pronunciation dictionary*, 3rd ed. Harlow: Longman.