Voiceless interdental fricative in Singapore English*

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Kim, Chonghyuck. "Voiceless interdental fricative in Singapore English." *Studies in English Language & Literature* **44.4 (2018): 47-65.** This paper investigates the patterns of use of the voiceless interdental fricative /Ɵ/ by Singapore English speakers. Previous studies have successfully shown that the sound is realized in various forms in the language, but they remain silent on what percentage of speakers use a particular form of the sound. This is due to the fact that the studies are based on the impressionistic judgments of the researchers, or on the basis of a small number of speakers. In this article, we have interviewed 122 male university students and examined their pronunciations of the sound in word initial, medial and final positions. Our findings are, roughly, as follows: (i) 70 speakers (53%) use nonstandard forms [t,t,f], (ii) 23 speakers (19%) use the standard pronunciation in all three positions, (iii) 29 speakers (24%) use both standard and nonstandard pronunciations. These findings, together with other findings introduced in the text, will serve as a yardstick against which the future evolution of Singapore English can be measured. (Chonbuk National University)

Key Words: Singapore, English, interdental fricative, contact language, variation,

I. Introduction

Singapore English (SE) is a variety of English found in Singapore, with roughly 3.8 million native speakers (Singapore Population Census, 2010). As a contact language, it was born out of intense contact with local languages such as Chinese dialects−Hokkien and Cantonese−and Malay (Gupta 1994, Turnbull 1996, among others). In this contact variety of English, many constraints or rules that are strictly observed in Standard Modern English (StdE) are either absent or maintained in a much less strict form.

As Jekiel (2012) notes, interdental fricatives, /ð/ and /Ɵ/, are rare sounds, appearing in only 43 out of UPSID (UCLA Phonological Segment Inventory Database) 566 languages. As rare sounds, their pronunciations are often not uniform across a speech community. Wells (1982) reports that Londoners often use [f] and [v] in place of [Ɵ] and [ð] and that a number of speakers in New York use [t] and [d]. In the United States, for instance, a vernacular variant of the word *think* might be pronounced as [fɪŋk], where /Ɵ/ has been substituted with [f] (Wolfram & Schilling-Estes, 1998). These sounds have a range of attested variants in pronunciation by L2 speakers as well. In Japan, Germany, or China, *think* tends to be pronounced [sɪŋk], where /Ɵ/ is substituted with [s] (Rau, Chang & Tarone, 2009). In South East Asian countries such as Malaysia and Thailand, *think* tends to be pronounced [tɪŋk], where /Ɵ/ is realized as [t] (Baskaran, 2004). SE is of no exception in this regard. Many studies in the SE literature have made the observation that interdental fricatives /Ɵ/ and /ð/ are generally avoided and replaced instead by the corresponding alveolar plosives /t/ and /d/ in word initial positions (Platt & Weber 1980, Tongue 1979, Deterding & Hvitfeldt 1994); and in word final positions by a labiodental fricative, /f/ or /v/ (Bao 1998, Deterding & Poedjoseodarmo 1998).

While the literature on SE has proven that SE interdental sounds are realized in various forms just like other varieties of English, there is one question that still

needs to be addressed. SE is a language at young stage, a creole language, growing and changing fast. Its native speakers have diverse linguistic backgrounds, and no two groups of speakers speak the same language. In this language, there are virtually no grammatical phenomena that have no variant realizations, though variant realizations can be graded as major or minor by the number of their speakers. Hence, to accurately describe SE, it is as important to address the question of what percentage of SE speakers uses a particular variant as to address what variants are available in the language. Addressing the former question would not only provide us a more accurate picture of the current state of SE, but it will also give us an insight on the direction of change SE is going to take over the coming years. In this study, We aim to address this question.

Previous studies on SE interdental fricatives have been based on the impressionistic judgments of the researchers, or on the basis of a small number of speakers (Moorthy and Deterding 2000). Consequently, they fail to show what variants of interdental sounds are available within a large group of speakers and how they are distributed within that group. In this study, we describe SE interdental fricatives through a large-scale investigation of the sounds. In fact, of the two interdental sounds, we will focus on the voiceless version, partly because it removes possible complications that come from a large-scale investigation and partly because of the reasons to be discussed in section 2.4.

II. Method

The present study analyzes variable patterns of production of the voiceless interdental fricative /Ө/ by male university students from Singapore. We did not use any special statistical software to handle the data; and simply relied on basic spreadsheets and calculations.

2.1 Participants

Data have been elicited from a total of 441 subjects in 2014. They were all National University of Singapore students taking an introductory linguistics course offered by the author, with ages ranging from 18 to the early 20s. Data was collected from the subjects in the form of a term assignment, where they were asked for their pronunciations of certain words. Of the 441 subjects, there were 316 females and 125 males. 21 non-local subjects were taken out of consideration right off the bat, as they did not fulfil the criteria of being native SE speakers. The remaining subjects were native SE speakers, who have spent a minimum of 10 years in the Singapore education system. There are no discernible regional differences in SE speakers' pronunciations, as Singapore is a very small country. Subjects were also asked for their Mother Tongue, the language(s) spoken at home, and the language that they used most often. A vast majority of the subjects had Chinese as their Mother Tongue.

2.2 Data Elicitation

The subjects were asked to provide their pronunciations of a list of words as part of a term assignment. They were instructed to pronounce these words as they would in a naturally occurring conversation; no restriction was made on whether they had to pronounce the words in isolation or in a sentence. Subjects worked on this assignment in groups of sizes ranging from 3 to 6 people. The way each subject pronounces the words were then transcribed using the International Phonetic Alphabet (IPA) by one of their peers within their respective groups. All the subjects had learned how to phonetically transcribe words using the IPA. To ensure that there were no mistakes in the transcriptions, each set of transcriptions were later verified by a trained teaching assistant, in the presence of the respective subject. Each of the 441 subjects would read from the word list again, and any mistake in

transcription was then corrected by the teaching assistant, who is also a SE speaker. Mistakes in the original transcription were minimal, in any case.

There were a total of 69 words in the word list. This meant that 69 data points were extracted from each subject. These words were divided into 6 categories, along the variables of voicing and word position. The 6 categories were: voiceless interdental fricative in a word-initial position, voiced interdental fricative in a word-initial position, voiceless interdental fricative in a word-medial position, voiced interdental fricative in a word-medial position, voiceless interdental fricative in a word-final position, and voiced interdental fricative in a word-final position. The original form used to elicit data from the subjects will be provided below together with the data.

2.3 Coding

The process of coding the data collected was relatively straightforward. For each word in the list, only the target allophone was coded. Take the word *think* from the voiceless interdental fricative in word-initial position category for instance. If a subject reports a transcription of [Θɪŋk], the sound [Θ] would be coded; if the subject reports a transcription of [tɪŋk], [t] would be coded. In cases where the target sound is deleted, that word would be coded as a 'Ø'. The entire range of coded data is provided in the next section.

2.4 Data for Analysis

It was decided that our analysis should only include instances of the voiceless dental fricative /Θ/. The voiced dental fricative /ð/ was excluded from consideration because of several reasons. Firstly, it has been mentioned in the literature that the /ð/ sound often has so little of the acoustic properties of a fricative, both in terms of its manner and place of articulation, that it sounds more like a stop (Zhao 2010).

This brings into question its classification as a fricative. This is clearly borne out in our data, as an overwhelming majority of the subjects replace the target /ð/ sound with 'd', the corresponding alveolar stop. Secondly, the /ð/ sound usually occurs at the start of function words such as *the* and *that*. These function words are usually spoken quickly, and as a result, are unstressed. This makes it even more difficult for the subjects and the researchers alike to determine the exact nature of the sound (Moorthy & Deterding, 2000). Based on these reasons, we decided to omit all data with the voiced interdental fricative /ð/ as a target, from the data set.

Subsequently, a decision was made to exclude the female subjects from the final data set, because the elicited data was too large for us to analyze and comparing the data from females with the data from males goes beyond the scope of this paper. Therefore, the final data set used for the purposes of the present study was based on the pronunciations of the voiceless interdental fricative /Ө/ of local, male subjects. This meant a total of 122 subjects, which provided more than enough data points for us to conduct a comprehensive study. Of course, future research can be conducted on the remainder of our data set, to uncover even more general patterns of use of the interdental fricative in CSE.

III. Results and Discussion

In this section, we describe the general pattern of allophonic variation of the voiceless interdental fricative /Ө/ displayed by Singaporean male subjects. We compare our findings with those from previous research that were based on impressionistic judgments and smaller scale studies. We then look at some tendencies that emerge from the patterns of allophonic variation of /Ө/, and predict the general sequence of variation for /Ө/.

3.1 Word Initial Position

The words used to test /Ө/ in word initial position are the following: *thing*, *thorn*, *thought*, *think*, *thank*, *thick*, *theoretical*, *throw*, *thrive* and *three*. The results in this category are displayed in Table 1.

Table 1. Allophonic Variation of /θ/ in Word Initial Position

	Thing	Thorn	Thought	Think	Thank	Thick	Theoret-ical	Throw	Thrive	Three
[t]	67	57	66	68	68	60	69	27	28	30
[tʰ]	16	20	16	15	13	15	14	14	15	13
[Ө]	36	43	38	36	39	46	37	29	27	32
[ð]	2	2	2	2	1	1	2	0	0	0
[ʧ]	0	0	0	0	1	0	0	52	52	47
[d]	1	0	0	1	0	0	0	0	0	0
total	122	122	122	122	122	122	122	122	122	122

In the 10 words in this category, 7 contain /Ө/ in a simple onset, and 3 contain /Ө/ in a complex onset. About 30% of the subjects pronounced the sound in the standard form when the sound is in a simple onset. But the standard form occurs less in a complex onset, about 24% of the time (*throw*, *thrive*, *three*). There are five variant forms of the interdental sound attested in our data − [t], [tʰ], [ð], [ʧ], [d]. One notable pattern that emerges here is the strong tendency for SE speakers to produce [t] in place of [Ө], when /Ө/ is in a simple onset and [ʧ] in place of [Ө] when it is in a complex onset composed of /Ө/ and /r/ sounds. The production of [ʧ] in a word like *three* is not surprising at all, as noted by Detering (2007), because [t] is naturally palatalized before [r]. What is interesting, and not reported in the literature, is that [t] and [ʧ] coexist in the onset of /Өr/, though [ʧ] is preferred. Similarly, in a simple onset, [t] and [tʰ] coexist. Furthermore, the presence of the aspirated /tʰ/ in our data set is also something that has hitherto not appeared in any previous descriptions of the interdental fricative in SE. An /s/ sound, which is well

documented to be the most common substitution in varieties of English found in China, Taiwan, and Germany (Rau, Chang & Tarone, 2009) were not found at all in the SE data.

Therefore, while we confirm previous findings that [t] is generally substituted for the target [Ө] at the beginning of the word, we also find that about 30% of the subjects use the standard form, about 50% use [t], and about 10% use [tʰ]. While /t/ in Standard and Singapore English as in *time* is aspirated in word-initial position, the allophonic variant of /Ө/ tends to be unaspirated in the same position.[1]

3.2 Word Medial Position

The words used to test /Ө/ in word-medial position are the following: *sympathy*, *mathematics*, *author*, *healthy*, *wealthy*, *Cynthia*, *Dorothy*, *Timothy*, *something*, *nothing*, *strengthen* and *lengthen*. The results in this category are displayed in Table 2.

Table 2. Allophonic Variation of /*θ* / in Word Medial Position

	sympathy	mathematics	author	healthy	wealthy	Cynthia
[t]	89	76	70	81	82	85
[tʰ]	1	1	2	0	0	2
[Ө]	31	38	49	41	40	33
[ð]	1	2	1	0	0	1
[d]	0	5	0	0	0	1
	Dorothy	Timothy	something	nothing	strengthen	lengthen
[t]	91	93	86	81	79	78
[tʰ]	1	2	2	2	2	2
[Ө]	28	26	33	37	39	40
[ð]	2	1	1	1	1	1
[d]	0	0	0	1	1	1

The 12 words in this category all display generally the same pattern of variation

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[1] A peculiar fact about Singapore English is that the number of variant forms of /Ө/ is quite large compared to other dialects of English where there exist only a couple of variant forms. It is unclear to me why such a situation holds in SE. Presumably, this is due to the fact that SE is a creole language.

as the words in table 1. A significantly larger number of subjects produce [t] in place of [Ө] when the target sound is found word medially, which was also observed independently by Bao (1998). Disappearance of [ʧ] and the near nonoccurrence of [tʰ] in word-medial position are not surprising: [ʧ] does not occur due to the lack of onset cluster composed of [tr], and [t] is not aspirated in word medial position. In sum, /Ө/ is pronounced in the standard form by 21-40% of the subjects and it is pronounced as [t] by 57-76% of the subjects.

3.3 Word Final Position

The words used to test /Ө/ in word final position are the following: *with*, *fourth*, *fifth*, *sixth*, *seventh*, *eighth*, *length*, *lengths*, *wealth*, *health*, *moth*, *myth*, *growth*, *growths*, *teeth*, *bath* and *breath*. In the words *lengths* and *growths*, /Ө/ does not occupy the end position. They are, however, included to see how the plural morpheme affects the pronunciation of /Ө/. The results in this category are shown in Table 3.

Table 3. Allophonic Variation of /θ / in Word Final Position

	seventh	eighth	fifth	sixth	lengths	length
[t]	7	1	3	6	5	5
[tʰ]	3	3	0	3	0	0
[Ө]	67	71	28	30	38	59
[ð]	0	0	0	0	0	0
[d]	0	1	0	0	0	0
[v]	0	0	0	0	1	0
[f]	34	32	25	13	20	41
[s]	2	1	0	0	0	0
[k]	0	0	0	0	5	0
Ø	9	13	66	70	53	17
	with	fourth	wealth	moth	myth	growth
[t]	1	2	2	1	1	1
[tʰ]	0	0	0	0	0	0

[Θ]	31	29	33	31	31	31
[ð]	1	0	0	0	0	0
[d]	0	0	0	0	0	0
[v]	0	0	0	0	0	0
[f]	89	89	87	90	90	90
[s]	0	0	0	0	0	0
[k]	0	0	0	0	0	0
Ø	1	2	0	0	0	0
	teeth	bath	breath	health	growths	
[t]	1	1	1	1	3	
[tʰ]	0	0	0	0	0	
[Θ]	31	29	35	33	31	
[ð]	0	0	0	0	0	
[d]	0	0	0	0	0	
[v]	0	0	1	0	2	
[f]	89	92	85	88	82	
[s]	0	0	0	0	0	
[k]	0	0	0	0	0	
Ø	1	0	0	0	4	

There are 3 general patterns found in the 17 words in this category. Firstly, 11 of the words − *with, fourth, wealth, moth, myth, growth, teeth, bath, breath, health, growths* − show a strong tendency for /Θ/ to be realized as [f]: More than 70% of the subjects show this pattern and about 25% use the standard pronunciation. This substitution is widely attested to in the literature on SE interdental fricatives (Bao 1998, Deterding 2007, Deterding & Poedjosoedarmo 1998). Our data confirm this observation.

Secondly, there is a rather unexpected tendency displayed by 2 of the words, *seventh* and *eighth*. The pronunciations of these words have been kept quite close to their standard forms − the [Θ] sound appears 67 and 71 times respectively, which is more than half the total number of occurrences. In contrast, the [Θ] form only appears roughly a quarter of the time in the other words in the category. There does not seem to be a principled explanation for this unexpected tendency. In fact, the target sound is present in a complex coda - [sɛvənΘ], and [ejtΘ] - which is where

substitution, or simplification/deletion processes usually take place; also, the words are considered low frequency words, which are more likely to retain standard pronunciations.

The third pattern that can be found in this category is the tendency for /Ө/ to be deleted in words such as *fifth*, *sixth*, and *lengths*, on average, at least half the time. This might not strike one as surprising, given that these words all contain complex codas, which, as mentioned earlier, is where deletion of sounds occurs regularly in SE. However, consider the fact that there are other words in the category with complex codas (e.g. *growths*, *length*, *seventh*, *eighth*) - yet deletion is not as regular in those words. It is unclear to me what causes /Ө/ to delete in these special cases. One last interesting, though minor, observation in this category is the substitution of [k], a seemingly unrelated speech sound for /Ө/. This was exhibited by 5 subjects in the word *lengths*. Instead of substituting [f] or the zero-variant, they assimilated /Ө/ to the preceding speech sound [ŋ], and produced a voiceless, velar, plosive [k] ([lɛŋks]).

3.4 Individual Variations

In the previous section, we described allophonic variations of /Ө/ in different positions of a word, paying attention to the number of speakers producing a particular form of variant in each position. It was found that [t] and [f] are the variant forms that are used by most speakers in word intial and final positions, respectively. Our description, however, and in fact all the previous descriptions of SE interdental sounds, misses one important aspect of variation − variation on an individual level. Not all speakers who produce [t] in word initial position does not produced [f] in word final position. Conversely, not all speakers who produce [Ө] in one position do it across the board. It is therefore necessary to examine individual variations in order to characterize variations of /Ө/ in SE properly.

It is commonly acknowledged in the literature that SE exists in a diglossic

relationship (Wolfram 1986) as the Low variety, or the basilect; and Singapore Standard English (SSE) as the High variety, or the acrolect (Gupta 1994). Singaporeans could thus be positioned at any point in this lectal continuum. To further complicate matters, many Singaporeans are able to code-switch between the Low and the High variety, if they are proficient in both. Therefore, to avoid using any terms that might have any further implications, let us simply classify SE speakers into 2 groups: 'strict' and 'sloppy'. A 'strict' speaker is defined as one who would produce speech sounds in their standard forms most of the time, without recourse to substitution or deletion processes. Conversely, a 'sloppy' speaker is defined as a person who regularly relies on both substitution and deletion processes when producing speech sounds in SE.[2] We can then give these two groups a proxy representation for /θ/ in each of the above categories (i.e. word-initial, word-medial & word-final positions), as in (1).

(1) Categorization of SE speakers based on their production of /θ/
       Word Initial   –   Strict ([θ]), Sloppy ([t])
       Word Medial   –   Strict ([θ]), Sloppy ([t])
       Word Final   –   Strict ([θ]), Sloppy ([f])

The representations for the 2 groups across the different categories are motivated from the forms observed in other studies, and corroborated by our own data, to be the most common substitutions of /θ/. The strict group would produce [θ] in all positions rather straightforwardly. The sloppy group would produce [t] in word-initial and word-medial positions, and [f] in word-final position. However, to be able to neatly classify speakers according to their behaviour, we need to reduce the variability of substitution of /θ/ within each category. For instance, a speaker might

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[2] There is no theoretical meaning attached to the terms *strict/sloppy*. I just use the terms for convenience to divide the students into two groups. Those whose pronunciation is close to the standard pronunciation is called *strict* and those whose pronunciation deviates from the standard pronunciation is called *sloppy*. They should not be understood in the sense of strict/sloppy readings as used in semantics.

produce the pattern in (2) for /Ө/ in word initial position:

(2) Pronunciations of /Ө/ in word initial position by Speaker X

thing	thorn	thought	think	thank	thick	theoretical	throw	thrive	three
[t]	[t]	[t]	[t]	[t]	[t]	[t]	[Ө]	[Ө]	[Ө]

In a hypothetical situation in (2), we see that [t] is used for /Ө/ in 7 out of 10 words and [Ө] is used three times. In a case like this, we will take the allophone that is produced the most number of times out of all variants as a proxy for Speaker X's behaviour. Thus, we will say that Speaker X has the tendency to produce [t] as an allophone of /Ө/, and exhibits behaviour characteristic of a sloppy speaker. If we do this process for all 122 subjects in our data set, we can derive interesting patterns of SE speakers' behaviour in table 4.

Table 4. CSE Speaker Patterns for Voiceless Interdental Fricative

	Word intial	Word medial	Word final	N. of subjects
Sloppy	[t]	[t]	[f]	70
Group A	[t]	[t]	[Ө]	6
Group B	[t]	[Ө]	[f]	3
Group C	[Ө]	[t]	[f]	10
Group D	[t]	[Ө]	[Ө]	0
Group E	[Ө]	[t]	[Ө]	3
Group F	[Ө]	[Ө]	[f]	7
Strict	[Ө]	[Ө]	[Ө]	23

Table 4 summarizes the behaviour of 122 subjects in terms of the allophone they each prefer to use in each category. In a sense, these 122 subjects, while small in number and certainly not wholly representative of all SE speakers, might give us a good idea of the speech behaviour of SE speakers in general.

In the first row of the table, we get the group of sloppy speakers who have the tendency to produce non-standard forms at every word-position: [t] word initially, [t]

word medially, and [f] word finally. There are 70 subjects belonging to this group. At the other end of the spectrum, we get the group of strict speakers who always tend to produce the standard form [Ө] at every position. There are 23 subjects belonging to this group. In between the two ends of the scale are 29 speakers who have variable or 'unstable' pronunciations of /Ө/. For instance, 10 speakers (characterised in Group C) would tend to produce the standard form only in word-initial position, but non-standard forms in word-medial and final positions.

There are many ways we can interpret the data in Table 4. We present one possible interpretation in the next section.
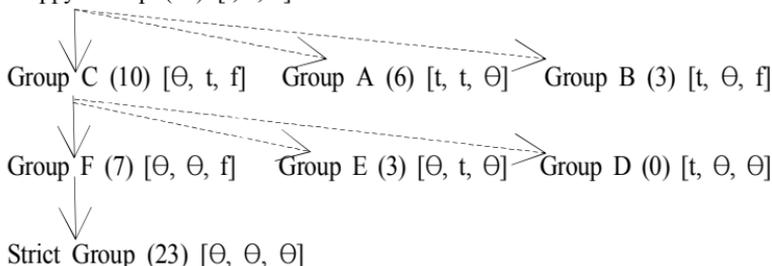
3.5 Possible Directions of Development of /Ө/ in SE

Table 1 clearly shows that SE is currently dominated by sloppy (young) speakers (57%) but it also shows that SE has a sizable number of strict speakers (about 19%). It difficult to predict from the data whether these speakers will continue to maintain their speech forms throughout their lives. It is feasible that they may develop from sloppy to strict speakers or the other way around. Indeed, table 1 also clearly shows that there are a nontrivial number of speakers (about 24%) who have already opted to change by adopting standard or nonstandard forms in their speech. Now, if we assume that SE will some day become a homogeneous language at its final stage and that it does so by following the patterns that the majority of the speakers between strict and sloppy speakers (speakers in Group A to F) show, we can draw two possible scenarios of development.

Let us begin by taking the group of sloppy speakers as a starting point. There are 70 speakers in this group. These speakers tend to use non-standard forms of /Ө/ in all 3 word positions. The next possible stages of development for this group of speakers are illustrated in (3).

(3) Development of /Ɵ/ from a sloppy speaker

Sloppy Group (70) [t, t, f]

Group C (10) [Ɵ, t, f]   Group A (6) [t, t, Ɵ]   Group B (3) [t, Ɵ, f]

Group F (7) [Ɵ, Ɵ, f]   Group E (3) [Ɵ, t, Ɵ]   Group D (0) [t, Ɵ, Ɵ]
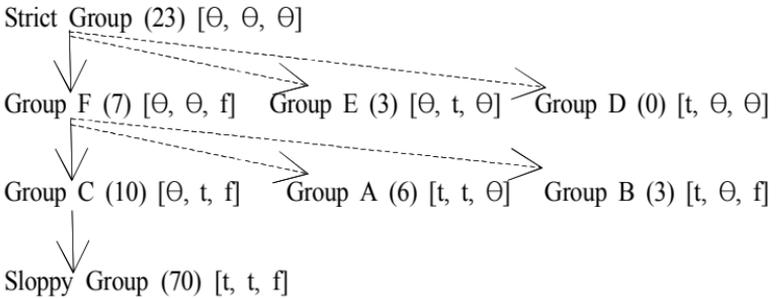
Strict Group (23) [Ɵ, Ɵ, Ɵ]

Starting from a sloppy speaker's point of view, the next most probable pattern of pronunciation that would be exhibited would be that of Group C; that is, to start producing the standard form in word initial position, while maintaining nonstandard forms in word-medial and word final positions. This is because there are more speakers in C (10) than in the two other possible patterns A (6) and B (3). From C, the next two possible stages would be either F or E. We see that F is more likely, as it has 7 speakers compared to E's 3 speakers. Therefore, a speaker in Group F would tend to retain nonstandard forms for word final positions only, while producing standard forms in word initial and word medial positions. Finally, the pattern changes to fit that of a strict SE speaker. The main implications behind this path of change are summarized in (4).

(4) a. Speech sounds found in word final positions are the most resistant to phonological change when one moves up the diglossic scale of Singapore English.

b. Speech sounds found in word initial positions are the most susceptible to phonological change when one moves up the diglossic scale of Singapore English.

Now, if we take the perspective that SE speakers change from strict to sloppy speakers, we can envisage the scenario in (5).

(5) Development of /Θ/ from a strict speaker

Strict Group (23) [Θ, Θ, Θ]

Group F (7) [Θ, Θ, f]   Group E (3) [Θ, t, Θ]   Group D (0) [t, Θ, Θ]

Group C (10) [Θ, t, f]   Group A (6) [t, t, Θ]   Group B (3) [t, Θ, f]

Sloppy Group (70) [t, t, f]

From a strict speaker's point of view, the next most probable patterns of pronunciation that would be exhibited would be that of Group F; that is, to start producing the nonstandard form in word final position, while maintaining standard forms in word initial and word medial positions. This is because there are more speakers in F (7) than in the two other possible patterns E (3) and D (0). The fact that there are no speakers exhibiting the pattern in D is very telling: it shows that it is highly unlikely for an SE speaker to produce a nonstandard form in word initial position and yet retain a standard form in other positions. From F, the next two possible stages would be A, B or C. We see that C is more likely, as it has 10 speakers. Therefore, a speaker in Group C would tend to retain standard forms for word initial positions only, while producing nonstandard forms in word medial and word final positions. Finally, the pattern changes to fit that of a sloppy SE speaker. The main implications behind this path of change are given in (6):

(6) a. Speech sounds found in word initial positions are the most resistant to phonological change when one moves down the diglossic scale of Singapore English.

b. Speech sounds found in word final positions are the most susceptible to phonological change when one moves down the diglossic scale of Singapore English.

To summarize, SE speakers tend to produce consistently (non)standard forms of the voiceless interdental sound, regardless of the position it might appear in a word. Strict and sloppy speakers are 70 and 23, respectively. The remaining 29 speakers use both standard and nonstardard forms in their speech. Of these 29 speakers, 19 speakers use nonstandard forms and 9 speakers use standard forms in two positions. The speakers who use nonstandard forms in two positions tend to maintain the standard form in word intial position. By contrast, the speakers who use the standard form more often tend to keep nonstandard forms in word final position.

V. Conclusion

For reasons explained above, the current study is limited to the production of /Ɵ/ by 122 male SE speakers. Surely, it needs to be augmented with further research of the SE interdental fricative paradigm in terms of its voiced counterpart, including female SE speakers, in order to provide a more comprehensive picture of the usage of the sound. However, even within the limited scope of our study, we managed to make a few interesting observations. Firstly, in addition to confirming the previous observation that the SE interdental fricative is realized in various forms, we were able to show how the variant sounds are distributed. At the beginning of a word, about 30% of our speakers use the standard form, about 50% use [t], and about 10% use [t^h]. While /t/ in Standard and Singapore English as in *time* is aspirated in word initial position, the allophonic variant of /Ɵ/ tends to be unaspirated in the same position. In word final position, more than 70% of our subjects use the nonstandard form [f] and about 25% of our subjects use the standard form, though the results are subject to change depending on the words the sound appears in. Secondly, we have also revealed the patterns of use of the interdental fricative by individual speakers in word initial, medial and final positions. 57% of our subjects (70 sloppy speakers) employ the typical nonstandard forms, regardless of the

position /Ɵ/ might appear in a word. By contrast, 19% of the subjects (23 strict speakers) use the standard pronunciation consistently. So, at the current stage of SE, there are more than twice as many nonstandard speakers as standard speakers.

It is clear that one day SE is going to be a homogeneous language, particularly so given the small size of the country. It is unclear, however, what the direction of change will be. Is it from sloppy to strict? Or, the other way around? We have found that a sizable number of speakers (29 speakers − 24% of the subjects) have already opted to change, using both standard and nonstandard forms in their speech. Of the 29 speakers, 19 speakers use nonstandard forms and 9 speakers use standard forms in two positions. The speakers who use nonstandard forms in two positions tend to maintain the standard form in word intial position. By contrast, the speakers who use the standard form more often tend to keep nonstandard forms in word final position.

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