Segment Substitution and Its Variation in Philippine English: General Speakers vs. English Teachers

Chunhong Liao[1] Mingxing Li[2] Pengfei Liu[3] Kun Li[3] Helen Meng[4]

([1]Shenzhen Fuqiao Senior School; [2]Department of English Language and Literature, Hong Kong Baptist University; [3]SpeechX Limited; [4]Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong)

Abstract: Philippine English (PE) is extending its influence globally with the development of internet communication. This study investigates the segments of PE, focusing on: (i) the variations in segment productions with reference to General American English (GA), and (ii) the sociophonetic difference in PE, e.g., the pronunciations by professional English speakers, as represented by Filipino English teachers, vs. pronunciations by non-professional users. The data from 177 Filipino English teachers and 47 general PE speakers showed that (i) both groups have a high degree of variation in producing consonants and vowels; and (ii) in general, the pronunciations of Filipino English teachers resemble those by native GA speakers more closely than the non-professional users.

Keywords: Philippine English; segment substitution; variation; consonant; vowel

1 Introduction

As an international language, English is a global lingua franca with various varieties (Anderson-Hsieh *et al*. 1992; Magen 1998). Philippine English (PE) is often regarded as one of the varieties of General American English (Tayao 2004, 2008). PE is the official language in the Philippines, widely adopted in education, trade and everyday use. Along with the rapid developments of online learning, the influence of PE is expanding beyond the Philippines. For example, Filipino teachers constitute an increasing proportion of online English teachers particularly for English learners in mainland China.

1.1 Phonological properties of PE

As is true of most varieties of English, PE is influenced by the first language of its speakers and thus has accent properties that make it different from American English (Tayao 2004, 2008; Lourdes *et al.* 2006; Regala-Flores 2014;

Lesho 2018). As an official language in the Philippines aside from English, for example, Tagalog has a relatively simple consonant inventory [p t k ʔ b d ɡ m n ŋ s ʃ h tʃ dʒ l ɾ w j] as well as a relatively simple vowel inventory [i u e o a ɪʊ ʊɪ aɪ aʊ] (Llamzon 1966, 1969, 1997; Wolff 2008). As compared with General American English (GA), PE has been observed to have various properties, for example, the absence of schwa, the absence of aspiration in stops, vowel substitution (e.g., [a] for [æ]), consonant substitution (e.g., [s] for [z]), the simplification of consonant clusters, in terms of segmental properties, and syllable-timed rhythm and the shift in stress placement in terms of suprasegmental properties (Regala-Flores 2014).

Variation widely exists in the sound patterns of human languages (Coetzee & Kawahara 2011, Chambers & Schilling 2013, among others), and the same sound category may be produced differently in different phonetic

contexts, for different lexical items, and by different speakers. For consonants and vowels in PE, cross-speaker variation was acknowledged in previous studies, such as (Tayao 2004, 2008), yet there have been relatively few studies providing details on the degrees of variations. This study focuses on the variation in PE segments, and the first research question is: what is the potential variation in the production of English consonants and vowels by PE speakers?

1.2 Sociophonetic difference in PE

For speakers of the same language, socioeconomic differences often lead to pronunciation differences in consonants and vowels (Labov 1994) and the same is true for Philippine English (PE) speakers (Tayao 2004, 2008; Gonzalez 2006). As observed in Tayao (2004, 2008), PE speakers who use English professionally in their work resemble closer in their pronunciation to native English speakers, as compared with PE speakers who do not use English professionally. For consonants, the non-professional users are characterized by variable deviations of [θ] into [t], [ð] into [d], and [z ʃ ʒ] into [s]; the non-professional users typically lack segments such as [v f θ ð z ʃ ʒ] in their production and substitute [tʃ dʒ] with [ts dj] respectively. For vowels, the professional users are found to have difficulty producing the lax vowels (e.g., [ɪ ʊ ɔ ə æ]) and replace the vowel [e] with [ɛ]; the non-professional users' vowel inventory is limited to [i a u] (Tayao 2004, 2008).

While previous studies have described the difference qualitatively, there have been relatively few studies providing quantified measurements of the differences between professional vs. non-professional users of PE. Therefore, the second research question of this study is: what is the potential difference in producing PE segments between professional English users and professional English users?

Regarding the difference between PE speaker groups (Tayao 2004, 2008), Filipino English teachers fall into professional users, whose pronunciations are also expected to influence those of the learners. Therefore, an investigation of the pronunciations by Filipino English teachers would provide empirical data of English pronunciations for a substantial portion of online English teachers for English learners in mainland China.

2 Method

2.1 Participants

Two groups of speakers were recruited online: Group 1 included 47 non-professional PE users who work as Filipino maids, housewives, customer service staff, and other non-professionals. Group 2 included 177 Filipino teachers, representing the professional PE users, who are teaching English to Chinese students online. No participants reported speech or hearing impairment.

2.2 Materials

The recording materials included 10 sentences such as those from AESOP's Fable: "*The North Wind and the Sun were disputing which was the stronger, when a traveler came along wrapped in a warm cloak*". A complete list of the sentences used in the recording is provided in the Appendix.

2.3 Procedure

The recording was conducted through a mobile phone application. The recruited speakers were asked to find a quiet place at their convenience to do the recording. Each speaker read 3 to 10 sentences using their mobile phone directly, which was recorded at a sampling rate of 16,000 Hz. While a higher sampling rate is usually adopted for acoustic analysis, the current sampling rate is sufficient for the identification of consonants and vowels by human annotators. The audio sounds were

stored in *.wav format for implementing machine recognition. All data were submitted online to cloud storage for further processing.

2.4 Annotation

The recognized consonants and vowels in the target words in the recording were first automatically labelled by a Mispronunciation Detection and Diagnosis (MDD) model trained on English speech by native speakers of American English and Chinese learners of English. Then the results of the automatic labelling were manually checked by three trained annotators using the software Praat (Boersma & Weenink 2018). The annotators listened to the recordings and checked the MDD-generated annotation; they changed an MDD-generated label of a segment when it was inaccurate. While the three annotators' first language is Mandarin, they have all received training in phonetics and have achieved high proficiency in English. The annotators worked independently in general and when they encounter ambiguous cases, they would discuss and make a group decision together.

3 Results - PE Consonants

Two analyses were performed on the annotation results after being checked by the annotators: (i) For each target segment, a '**deviation rate**' was calculated, for which the numerator is the number of deviant productions referring to General American English (GA) and the denominator is the total number of a target segment across all speakers. (ii) For each target segment, a '**speaker rate**' was also calculated as the proportion of speakers who produced a specific type of deviant segment in the professional or non-professional group, regardless of the number of tokens s/he produced.

3.1 General PE speakers

The General PE speakers recorded a total of 1,832 tokens of consonants whose pronunciations deviate from General American English (GA), 23.7% of the total 7,734. Table 1 presents the 9 English consonants whose deviation rates were among the highest across the 47 general PE speakers. For each target segment, the main PE forms are listed in an order of decreasing deviation rate; an asterisk marks a deviation that was not well documented in the literature.

As shown in Table 1, the major patterns in general PE speakers' production of consonants include:

[1] The voiced fricatives [z ʒ v] and the voiced affricate [dʒ] were variably pronounced as their voiceless counterparts, e.g., [v] → [f] (5.3%), [z] → [s] (58.7%), [ʒ] → [ʃ] (43.5%), [dʒ] → [tʃ] (11.1%). For [z ʒ], over half of the productions deviated from the targets in GA;

[2] The interdental fricatives [θ] and [ð] were sometimes pronounced as dental/alveolar stops respectively, e.g., [θ] → [t] (17.1%) and [ð] → [d] (16.6%);

[3] The voiceless stops [p t k] were sometimes produced as their voiced counterparts, e.g., [p] → [b] (16.4%), [t] → [d] (13.4%), [k] → [g] (13.7%).

3.2 Filipino English teachers

The Filipino teachers produced 1,856 tokens of consonants deviating from the GA pronunciation, which constitutes 13.5% of the total number of consonants (13,757). For ease of comparison, Table 2 presents the deviation rates of all consonants in Table 1 across the entire group of the 177 Filipino teachers. Generally, the patterns observed from the non-teachers are applicable to the teachers:

[1] Some [v z ʒ] and [dʒ] were variably pronounced as their voiceless counterparts [f] (10.0%), [s] (54.4%), [ʃ] (33.0%), and [tʃ] (11.7%) respectively;

[2] The interdental fricatives [θ] and [ð] were sometimes produced as the stops [t] (20.5%) and [d] (10.1%) respectively;

[3] The stops [p t k] were variably produced as [b] (2.5%), [d] (2.1%), and [g] (1.8%) respectively.

Compared with Table 1, Table 2 shows that the Filipino teachers generally have lower deviation rates than the non-teachers, except for the pronunciation of [v] as [f].

Table 1 General PE speakers – deviation rates for consonants

English target	Total #of targets	Overall deviation rate	Main PE forms	% of different PE forms	Example words
v	756	9.0%	*f	5.3%	of/traveler
			b	2.4%	traveler/villagers
z	1,302	**59.0%**	s	58.7%	zoo/his/as
ʒ	92	**58.0%**	ʃ	43.5%	pleasure/usual
			s	12.0%	usual
dʒ	162	**15.0%**	tʃ	11.1%	change/villagers
θ	170	**34.0%**	*t	17.1%	north/thought
			*d	10.6%	north/third
ð	1,959	**18.0%**	d	16.6%	the/that
p	537	**20.0%**	b	16.4%	plain/pleasure
t	1,832	**15.0%**	d	13.4%	to/attempt/told
k	924	**15.0%**	g	13.7%	cloak/closely

Note: In this table, boldfacing marks targets whose overall deviation rates were no lower than 15%; an asterisk marks a deviation that was not well documented in the literature. The same convention applies to other tables below.

Table 2 Filipino English teachers – deviation rates for consonants

English target	Total #of targets	Overall deviation rate	Main PE forms	% of different PE forms	Example words
v	1,321	11.0%	*f	10.0%	of/traveler
z	1,750	**55.0%**	s	54.4%	zoo/his/as
ʒ	109	**39.0%**	ʃ	33.0%	pleasure/usual
dʒ	309	13.0%	tʃ	11.7%	change/villagers
θ	351	**27.0%**	*t	20.5%	north/thought
			*d	1.7%	north/third
ð	3,204	11.0%	d	10.1%	the/that
p	883	6.0%	b	2.5%	plain/pleasure
			f	2.8%	shepherd/up
t	3,716	4.0%	d	2.1%	to/attempt/told
k	2,114	2.0%	g	1.8%	cloak/closely

Figure 1 presents the 'speaker rates', i.e., the proportion of speakers, for each consonant across the 47 general PE speakers (dark bars) and 177 Filipino teachers (white bars). For general PE speakers, Figure 1 shows that (i) the deviation of [z ʒ θ ð p t k] occurred in more than 60% of the speakers, consistent with the observation in Table 1; (ii) the deviation of [v dʒ] occurred in around 30% to 40% of the speakers, indicating cross-speaker variation in PE. For Filipino teachers, Figure 1 shows that: (i) the deviation of [z ð] occurred for more than 70% of the teachers, a proportion which is similar to non-teachers; (ii) the deviation of other consonants occurred in less than 30% of the teachers, indicating that their pronunciations bear a closer resemblance to those of GA speakers, as compared with the general PE speaker.
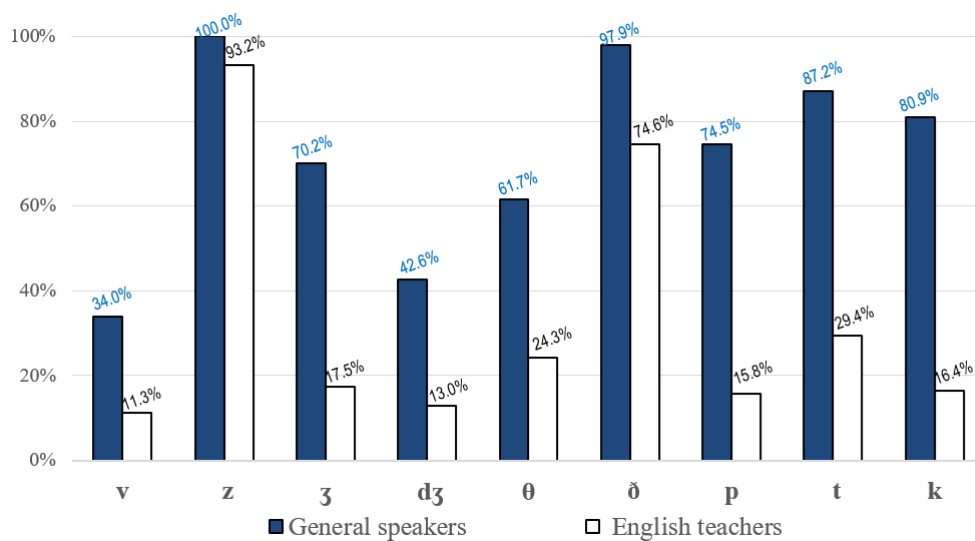
Figure 1 The speaker rate of consonant deviation across the 47 general speakers (blue bars) and the 177 Filipino teachers (white bars)

4 Results - PE Vowels

4.1 General PE speakers

The General PE speakers recorded a total of 1,185 tokens of vowels whose pronunciations deviate from GA, which constitutes 10.8% of the total number of vowel tokens (10,955). Table 3 presents the 10 English vowels whose deviation rates were among the highest across the 47 general PE speakers. For each target segment, the PE forms are listed in an order of decreasing deviation rate.

Table 3 reveals the following patterns:

[1] The lax vowels [ɪ ʊ ə ʌ ɛ æ] were variably pronounced in diverse forms, e.g., [ɪ] as [i ɛ], etc. each taking up a relatively low portion;

[2] The low vowel [æ] was variably produced as [ɑ ʌ] (22.0%);

[3] The diphthongs [eɪ] [oʊ] and [aʊ] were sometimes reduced to monophthongs, e.g., [eɪ] → [i] (7.9%), [oʊ] → [ɔ] (10.5%), and [aʊ] → [ɑ] (1.9%).

Table 3 General PE speakers – deviation rates for vowels

English target	Total # of targets	Overall deviation rate	Main PE forms	% of different PE forms	Example words
ɪ	2,105	7.2%	i	3.1%	his/looking
			*ɛ	2.4%	forest/wind
ʊ	241	**19.5%**	ɔ	9.1%	wolf/looked
			u	8.7%	foot/poor/should
ə	4,213	6.6%	ʌ	2.7%	succeeded
ʌ	656	7.8%	ɑ	3.0%	up/sun
ɛ	886	6.8%	*i	3.0%	pebbles/shepherd
æ	932	**22.0%**	ɑ	16.1%	traveler/wrapped
			ʌ	4.4%	traveler/ran/began
ɑ	485	**47.4%**	ɔ	38.1%	hot/not/flocks
			ʌ	7.2%	hot/bother/watch
eɪ	569	12.0%	i	7.9%	change/came
			ɛ	1.8%	escaped/came
oʊ	599	14.0%	ɔ	10.5%	cloak/fold/told
aʊ	269	4.8%	*ɑ	1.9%	mountain

In addition, the low vowel [ɑ] was variably produced as [ɔ] (38.1%) in words such as 'hot' and 'not'. Referring to the pronunciations in GA, [ɑ] → [ɔ] is a deviation; yet for the relevant words, the pronounced forms such as [hɔt] and [nɔt] are consistent with their pronunciations in British English.

4.2 Filipino English Teachers

The Filipino English teachers gave a total of 1,403 tokens of vowels whose pronunciations deviate from GA, constituting 7.5% of the total number of vowel tokens at 18,593. For ease of comparison, Table 4 presents the deviation rates of all the vowels in Table 3 across the 177 Filipino teachers. Generally, the patterns in the teachers were similar to those in the non-teachers, although the teachers usually have a

lower deviation rate than the non-teachers except for a few exceptional cases:

[1] The lax vowels [ɪ ʌ ə ʌ ɛ æ] were variably replaced with diverse forms, e.g., [ɪ] as [i] or [ɛ], etc.;

[2] The low vowel [æ] was variably produced as [ɑ ʌ] (13.0%);

[3] The diphthongs [eɪ] [əʊ] and [aʊ] were variably reduced to the monophthongs [i] (2.1%), [ɔ] (7.0%), and [ɑ] (1.9%), respectively.

Similar to the general PE speakers, the teachers also gave a relatively high rate of [ɑ] produced as [ɔ] (46.9%), which was even 8.8% higher than the non-teachers. The pronunciations of 'hot' as [hɔt] and 'not' as [nɔt] happen to be consistent with British English.

Table 4 Filipino English teachers – deviation rates for vowels

English target	Total # of targets	Overall deviation rate	Main PE forms	% of different PE forms	Example words
ɪ	3,727	3.6%	i	1.5%	his/looking
			*ɛ	0.9%	forest/wind
ʊ	665	12.0%	ɔ	5.0%	wolf/looked
			u	3.8%	foot/poor/should
ə	6,819	6.2%	ʌ	3.0%	succeeded
ʌ	1,363	3.3%	ɑ	1.4%	up/sun
ɛ	1,155	4.8%	*i	0.4%	pebbles/shepherd
æ	1,710	13.0%	ɑ	10.1%	traveler/wrapped
			ʌ	1.9%	traveler/ran/began
ɑ	535	**52.9%**	ɔ	46.9%	hot/not/flocks
			ʌ	3.2%	hot/bother/watch
eɪ	1,169	4.8%	i	2.1%	change/came
			ɛ	0.7%	escaped/came
oʊ	813	10.1%	ɔ	7.0%	cloak/fold/told
aʊ	637	3.0%	*ɑ	1.9%	mountain

Figure 2 presents the speaker rates, i.e., the proportions of speakers having a deviation, across the 47 general PE speakers (dark bars) and the 177 Filipino teachers (white bars). We observe that: (i) the deviation of [ə æ ɑ] occurred almost in all the speakers; (ii) the deviation of [ɪ ʊ ʌ ɛ eɪ oʊ] occurred in 50% to 80% of the speakers, indicating cross-speaker variation; (iii) the deviation of [aʊ] is limited to less than 1/5 of the speakers. In particular, for the Filipino teachers, Figure 2 shows: (i) the

deviation of [ə] occurred for over 94% of the teachers, similar to the rate in the non-teachers; (ii) the deviation of [ɪ ʌ æ ɑ] occurred for around 35% to 80% of the teachers, indicating cross-speaker variation; (iii) the deviation of [ʊ ɛ eɪ oʊ aʊ] occurred for less than 25% of the Filipino teachers, again, indicating a closer resemblance of their pronunciations to those of native American English speakers than the non-teachers.
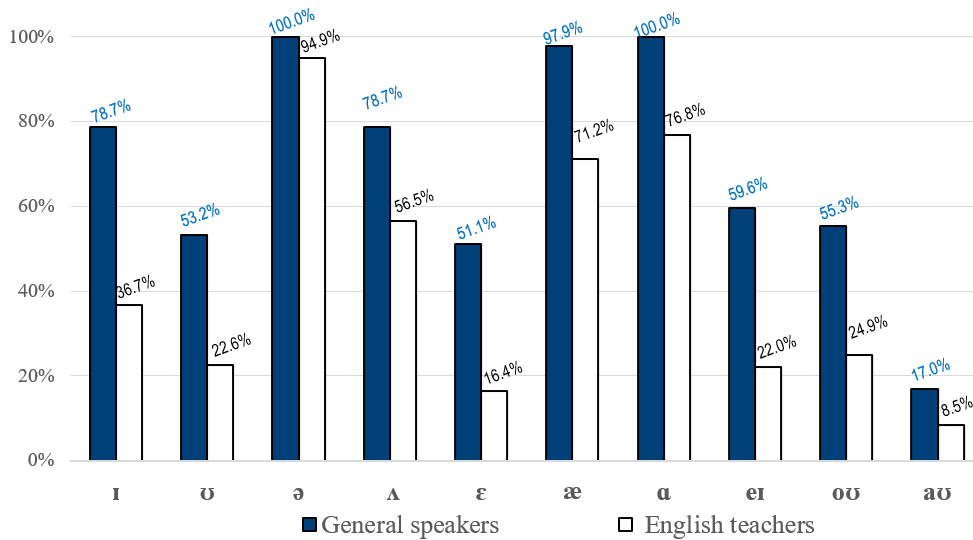
Figure 2 The speaker rate of vowel deviation across the 47 general speakers
(dark bars) and the 177 Filipino teachers (white bars)

A comparison of the major segment deviations in the productions by the teachers vs. the non-teachers is summarized schematically in Figure 3, focusing on the target segments whose deviation rates across speakers were at 15% or above, i.e., those highlighted in Tables 1 to 4. We observe that the teachers generally have lower rates of segment substitution, suggesting their pronunciations to be generally closer to the GA speakers, especially for the consonants such as [dʒ ð p t k] and the vowels such as [ʊ æ].
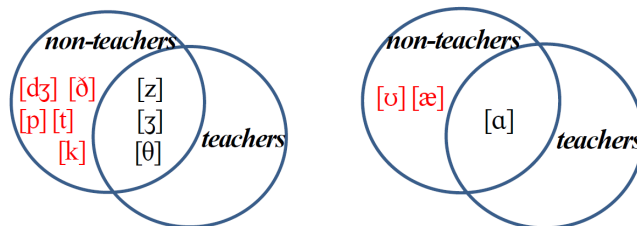

Figure 3 Major deviations of consonants (left) and vowels (right)
by non-teachers vs. teachers with PE accent.

5 Discussions

When producing L2 sound categories absent from L1, a speaker may render an L2 sound into an L1 sound. According to the Perceptual Assimilation Model (PAM) (Best 1994), for example, L2 listeners perceive non-native sound categories in terms of their articulatory similarities/dissimilarities to their native phonemes and contrasts. The segment substitutions in PE in relation to GA, as observed in this study, generally support this position. English contrasts voiceless vs. voiced consonants, e.g., fricatives [f s] vs. [v z] and stops [p t] vs. [b d] and the relevant contrasts are realized differently in PE: for fricatives/affricates, the voiced consonants were variably replaced with their voiceless counterparts, e.g., [z] → [s], [dʒ] → [tʃ], [ʒ] → [ʃ], and [v] → [f]. This is likely to be caused by the lack of corresponding segments in the speakers' native language. Similarly, English consonants such as [θ ð] are largely absent in languages such as Tagalog, and they were variably rendered into stops in PE, e.g., [θ] → [t/d] and [ð] → [d], across teachers and non-teachers alike. In addition, various proportions of the English consonants [p t k] were realized

7

as [b d g], which is likely rooted in the phonetic properties of the speakers' first languages such as Tagalog: the voicing contrast in Tagalog is usually realized as a long negative Voice Onset Time (VOT) for voiced stops (e.g., [b]) and a short positive VOT for voiceless stops (e.g., [p]) (Kang *et al.* 2016). The use of a short positive VOT for English voiceless stops [p t k] might have led to the phonetic equivalents of their voiced counterparts [b d g], in particular when the stops appear in word-initial positions.

In terms of segment substitution, the results in the current study confirm various patterns in PE consonants and vowels as reported in the literature (Tayao 2004, 2008; Lourdes *et al.* 2006; Regala-Flores 2014, Lesho 2018), as detailed above in the observations for the non-professional users (Table 1 and 3) and the professional users, as represented by the Filipino English teachers (Table 2 and 4). In addition, a few deviant patterns which have not been well documented in the literature were also observed, i.e., the patterns marked with an asterisk in Table 1 through 4. In terms of consonants (Table 1 and 2), the deviation [v] → [f] (e.g., 'of') and [θ] → [t] (e.g., 'north') both have their rates ranging from 5% to 20.5% across general PE speakers and the teachers; in terms of vowels (Table 3 and 4), the deviations [ɪ] → [ɛ] (e.g., 'forest'), [ɛ] → [i] (e.g., 'shepherd'), and [aʊ] → [ɑ] (e.g., 'mountain') have their rates ranging from 0.5% to 3%. It awaits further exploration as to why such patterns emerged in the results of the current study. In general, it is meaningful to recognize that more diverse patterns of substitutions exist in PE, for consonants and vowels alike and across different groups of speakers.

Variation is a common property of speech sounds of languages (Wang 1969, Labov 1994, Pierrehumbert 2002). For Philippine English, while previous studies usually acknowledge the existence of variation among its speakers, there have been relatively few studies providing quantified measurements of the variations. Based on the moderately large amount of data collected from non-professional users and professional users, represented by the Filipino English teachers, we observed various degrees of variabilities in the productions of consonants (Tables 1 and 2) and vowels (Tables 3 and 4). For a particular consonant/vowel, there seems to be never a unified substitution, which holds within the non-professional users and the professional English users. The detailed mechanism of the variation and its causes await further exploration.

Previous studies in PE recognized the difference in producing consonants and vowels by different social groups (Tayao 2004, 2008; Gonzalez 2006). The results of the non-professional users and the professional English users generally confirm that the use of English for a professional purpose, e.g., that by the Filipino English teachers, tends to be correlated to a closer resemblance to the pronunciations of native GA speakers. It needs to be noted that the Filipino English teachers should have a better linguistic training professionally and their pronunciations are closer to GA in deviating less from it in terms of types and tokens, when compared with the general PE speakers.

For the general PE speakers, the deviations patterns as in Table 1 and 3 can serve as a reference in the teaching of English learners in the Philippines, which may help the instructors to focus on the more challenging consonants and vowels for the learners, such as [θ ð z ʒ æ oʊ]. For the Filipino English teachers, the patterns in Table 2 and 3 could be adopted, for example, when evaluating the qualification of an English teacher, to ensure proper pronunciation input to the online English learners when native English pronunciation is the learning target.

6 Conclusions

With empirical data, this study examined the consonants and vowels in Philippine English. The results in general verified the patterns reported in the literature and further revealed various detailed variations. While generally confirming previous studies, this research provided quantified measurements of the variation in PE consonants and vowels as well as the difference between professional PE users and non-professional PE users. The data and observations are expected to deepen the understanding of PE regarding its general speakers and Filipino English teachers.

Appendix: Recording materials

The recording materials are the following 10 sentences:

[1] The North Wind and the Sun were disputing which was the stronger, when a traveler came along wrapped in a warm cloak.

[2] Then the North Wind blew as hard as he could, but the more he blew the more closely did the traveler fold his cloak around him. And at last, the North Wind gave up the attempt.

[3] There was once a poor shepherd boy who used to watch his flocks in the fields next to a dark forest near the foot of a mountain.

[4] The plain was rich with crops. There were many orchards of fruit trees and beyond the plain, the mountains were brown and bare.

[5] This gave the boy so much pleasure that a few days later he tried exactly the same trick again, and once more he was successful.

[6] However, not long after, a wolf that had just escaped from the zoo was looking for a change from its usual diet of chicken and duck.

[7] So, overcoming its fear of being shot, it actually did come out from the forest and began to threaten the sheep.

[8] Unfortunately, as all the villagers were convinced that he was trying to fool them a third time, they told him, "Go away and don't bother us again." And so the wolf had a feast.

[9] In the bed of the river, there were pebbles and boulders, dry and white in the sun, and the water was clear and swiftly moving and blue in the channels.

[10] The trunks of the trees too were dusty and the leaves fell early that year and we saw the troops marching along the road and the dust rising and leaves, stirred by the breeze, falling and the soldiers marching and afterward the road bare and white except for the leaves.

References

Anderson-Hsieh, J., Johnson, R., & Koehler, K. 1992. The relationship between native speaker judgments of nonnative pronunciation and deviance in segmental, prosody, and syllable structure. *Language Learning*, vol. 42, no. 4, pp. 529–555.

Best, C. T. 1994. Learning to perceive the sound pattern of English. In C. Rovee-Collier & L. Lipsitt (eds.), *Advances in Infancy Research* (Vol. 8). Norwood, NJ: Ablex.

Lourdes, M., Bautista, S., & Gonzalez, A. B. Southeast Asian Englishes. 2006. In B. B. Kachru, Y. Kachru, & C. L. Nelson (eds.) *The Handbook of World Englishes*, pp.130–144. Wiley-Blackwell.

Boersma, P. & Weenink, D. 2018. Praat: doing phonetics by computer [Computer program]. Version 6.0.37, retrieved 14 March 2018 from http://www.praat.org/

Chambers, J. K., & Schilling, N. 2013. *The Handbook of Language Variation and Change* (2nd edition). Malden, MA: Blackwell Publishers.

Coetzee, A. W. & Pater, J. 2011. The place of variation in phonological theory. In Goldsmith, J., Riggle, J. & Yu, A. (eds.) *The Handbook of Phonological*

Theory (2nd ed). Malden, Mass. & Oxford: Wiley-Blackwell. 401–434.

Eckman, F., Iverson, G., & Song, J. 2013. The role of hypercorrection in the acquisition of L2 phonemic contrasts. *Second Language Research*, vol. 29, no. 3, pp. 257–283.

Gonzalez, A. 2004. The social dimensions of Philippine English. *World Englishes*, vol. 23, no. 1, pp.7–16.

Kang, Y., George, S., & Soo, R. 2016. Cross-language influence of stop voicing contrast in Heritage Tagalog. *Heritage Language Journal*, 13(2), 184–218.

Labov, W. 1994. *Principles of Linguistic Change*. Oxford, UK: Blackwell.

Lesho, M. 2018. Philippine English (Metro Manila acrolect). *Journal of the International Phonetic Association*, vol. 48, no. 3. pp. 357 – 370.

Llamzon, T. A. 1966. Tagalog phonology. *Anthropological Linguistic*, vol. 8, no. 1, pp. 30-39.

Llamzon, T. A. 1969. *Standard Filipino English*. Ateneo University Press.

Llamzon, T. A. 1997. The phonology of Philippine English. *English is an Asian Language: The Philippine Context*, pp. 41–48.

Magen, H. S. 1998. The perception of foreign-accented speech. *Journal of Phonetics*, vol. 26, no. 4, pp. 381–400.

Pierrehumbert, J. B. 2002. Word-specific phonetics. In C. Gussenhoven, & N. Warner (eds.), *Laboratory Phonology 7: Phonology and Phonetics*, pp. 101–139. Berlin, Germany: Mouton de Gruyter.

Regala-Flores, E. 2014. Phonological features of basilectal Philippine English: An exploratory study. *International Journal of English and Literature*, vol. 5, no. 6, pp. 128–140.

Tayao, M. L. G. 2004. The evolving study of Philippine English phonology. *World Englishes*, vol. 23, no. 1, pp. 77–90.

Tayao, M. L. G. 2008. A lectal description of the phonological features of Philippine English. In M. A. L. S. Bautista & K. Bolton (eds.) *Philippine English: Linguistic and Literary*. Hong Kong Scholarship Online.

Wang, W. S-Y. 1969. Competing changes as a cause of residue. *Language*, vol. 45, no. 1, pp. 9–25.

Wolff, J U. 2008. Tagalog. In K. Brown & S. Ogilvie, (eds.) *Concise Encyclopedia of Languages of the World*. Elsevier Science, pp. 1035-1038.

菲律宾英语的音素替换和差异：对普通英语使用者和英语教师的研究

摘要： 菲律宾英语（PE）在互联网交流的推动下正在全球范围扩大影响。本文研究菲律宾英语音段的发音，主要关注两个方面：(i)相对于美国英语，菲律宾英语中音段发音的潜在差异；(ii)社会因素对使用者发音的影响，如菲律宾普通英语使用者和菲律宾英语教师之间的潜在差异。收集自 47 名菲律宾普通英语使用者和 177 名菲律宾英语教师的数据显示：(i)菲律宾英语元音和辅音的发音中存在着不同程度的差异；（ii）与普通英语使用者相比，菲律宾英语教师的发音更接近美式英语。

关键词： 菲律宾英语；音素替换；差异；辅音；元音