The English Sound System vs. The Thai Sound System : Some Comparisons and Pedagogical Implications For the Thai EFL/ESL Learners[1]

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Contrastive linguistics [or contrastive analysis] is a procedure for comparing two languages [L1 vs L2] , the first language [L1] of students who are learning the target language [L2]. The objective of comparison is to find out the differences and similarities between the two language systems. The results of such comparisons have pedagogical implications for the teaching and learning of English as a foreign language [EFL] and English as a second language [ESL].

In contrastive linguistics, it is assumed that learners would find similar sounds easier to learn and master than different sounds or "foreign sounds", sounds which only existed in the target language [L2 or TL] but not in the native language [L1], or sounds which exist in both languages but have "different distributions" [they occur in different places].

It is also assumed that students subconsciously "substitute" similar sounds from their native language for "similar" sounds in the target language. Moreover, it is assumed that the students' native language [L1] would tend to influence the learning of the target language through "linguistic interference".

In this article, I shall be comparing and contrasting some of the English sounds with the Thai sounds, namely, the segmental sounds of English [L2] and Thai [L1] at the sound level.

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[1]This article is part of a research project conducted by the author, comparing the English and Thai sound systems in a contrastive analysis framework.

Linguists classify all sound systems as composed of two parts, an "etic" part and an "emic" part. "Etic sounds" [non-distinctive sounds] concern detailed sounds which do not necessarily have differences in meaning. For example, an American would pronounce the word "car" as [kar] in contrast to the Englishman who would pronounce it as [ka]. Yet, both have the same meaning. Such differences are "etic" in nature.

"Emic sounds" [or distinctive sounds], on the other hand, relate to meaningful significant sounds. Emic sounds are sounds which can change meaning such as in "minimal pairs". An example is the minimal pair "pat" /paet/ vs. "bat" /baet/, where the distinguishing minimal difference is only between the two sounds /p/ and /b/ which change one word [pat] into another [bat] with consequential changes in meanings also.

Etic sounds, [or non-distinctive sounds] therefore, do not change the word or meaning. Such etic sounds are non-distinctive or non-meaningful. An example is the same word "pat" in the example above but pronounced differently with a stronger aspiration ie. {phaet} ie. with a more pronounced aspiration {h} vs the more usual pronounce of "pat" {paet} ie. with out the stronger aspiration. Both pronunciations have the same meaning. However, each language has its own distinctive and non-distinctive sounds. The distributions of similar segmental sounds may also vary from one language [English] to another language [Thai].

2.0. Research Objectives of the Study

The objectives of this contrastive study is a pedagogical one: to identify the phonemic sounds of English [L2]; to identify the phonemic sounds of Thai [L1]; to compare and contrast such sounds so as to identify and analyze the differences and similarities between the two sound systems; to use such identification as the basis for further study and/or practice in order to overcome learning difficulties arising from such differences. The study is in 2 parts. This article is Part 1 of the study.

2.1. Research Methodology Used

In such a contrastive study, linguists use the corpus available: L2 [English] as spoken by the American English native speaker; and, L1 [Thai] as spoken by the Thai native speaker. Since the researcher [writer] is a bilingual, speaking both American English and Thai fluently, however, it is linguistically acceptable to use the writer's speech as corpus for both American English and Thai. [The writer has been a bilingual since the age of five.] The sounds of English and Thai are independently identified and then compared and contrasted to bring out the similarities [positive interference] and the differences [negative interference] between L1 and L2.

3.0 Segmental Sounds and Suprasegmental Sounds

Speech sounds can be categorized into segmental sounds and supra-segmental sounds. Segmental sounds include consonants and vowels. Supra-segmental sounds include such features of speech as stress; pitch; tones depending on the particular language.

Although I have identified the segmental /emic sounds of both English [L2] and Thai [L1], it is not my intention to attempt to compare and contrast all of the contrastive sounds. Rather, some of the more troublesome [for Thais learning English] sounds will be emphasized.

3.1. The American English Sound System:

3.1.1. English Consonants

Linguists classify meaningful "phonemic" or "emic" English speech sounds into 3 main types: Stop sounds [also called plosives]; fricative sounds [also called spirants]; and sonorants [which include sounds such as vowels, semi-vowels, nasals, and laterals]. All three types of such sounds have "voiced" and "voiceless" variants, depending on whether or not there is significant vibration in the vocal bands. Additionally, there are two other English speech sounds, "flaps" and "trills" but these are minor sound types.

For a complete representation of American English consonant sounds, refer to Table 1.0 American English Consonants below. Linguists categorize the major segmental sound types of American English as follows.

3.1.2. Emic Stop Sounds in American English

There are 3 pairs of voiced/voiceless stops plus a single glottal stop. These are symbolized as follows with their corresponding English examples of occurrence.

-2 bilabial stops [p] as in "pill" and [b] as in "bill."
-2 apico-alveolar stops [t] as in "till" and [d] as in "dill."
-2 doral-velar stops [k] as in "kill" and [g] as in "Gil"
-1 glottal stop [?] which rarely occurs in American English but appears in "stressed utterances" such as in the phrase "This is" where the word "is" is glottalic in nature.

3.1.3. Fricative Sounds in American English.

English has a large number of fricative sounds, numbering ten in all. Like stop sounds, fricative sounds also have voiced and voiceless pairs.

-2 labio-dental fricatives, a voiceless [f] as in "feel" and a voiced [v] as in "veal"
-2 apico-dental fricatives, a voiceless [0] as in "ether" and a voiced [d] as in "either"
-2 apico-alveolar sibilants, a voiceless [s] as in "sue" and a voiced [z] as in "zoo"
-2 fronto-palatal sibilants, a voiceless [s] as in "shoe" and a voiced [z] as in "pleasure"
-2 glottal fricatives, a voiceless [h] as in "hat" and a voiced [h] as in "ahead"

There are also two important speech sounds in English which are half-way between stop sounds and fricative sounds, namely, "affricates". Linguistically, an affricate sound is a kind of combination of the two sounds, a fricative and a stop. It is a stop initially but is followed by a slow release that is slow enough to produce a momentary fricative effect prior to the next sound. It is important that we can recognize and can identify affricates since they can differentiate meaning as in the following examples: the first is a stop + a fricative , namely, "hatshop" [haet + shop] ; the second is an affricate "hatchet" [haetchit].

3.1.4. Nasal Sounds in American English

In American English, there are three nasal sounds: a bilabial [m] as in "man"; an apico-alveolar [n] as in "non", and a dorso-velar [ng] or velar [ng] as in "going". All nasal sounds are voiced.

3.1.5. Lateral sounds in English

There are four types of lateral sounds in American English: the voiced apico-alveolar laterals [l] as in "labor", the voiceless apico-alveolar lateral [l̥] as in "please", the lateral with dorso-velar articulation [ɬ] or "dark l" as in "fill", and the voiced dorso-velar lateral [L] as in "milk".

3.1.6. Semi-vowels in American English

Semi-vowels [also called "glides"], unlike vowels, occur in consonantal positions.They occur in the same syllable with a real vowel which is the nucleus [the crest or center of the syllable]. Therefore, where there's a vowel, there's also [and always] a syllable. The opposite, however, is not true. Where there is a syllable, there's not necessarily a vowel. This is because of the existence in American English of "syllabic consonants" such as in the phrase "drop 'em" {casual speech for "drop them"} where the [m] sound is syllabic.

There are five important semi-vowels in American English: a voiced labio-velar semivowel [w]; a voiceless labio-velar semivowel [w]; a voiced apico-alveolar retroflex semivowel [r]; a voiced fronto-palatal semivowel [j]; a flap [r] and a trill [r].

These thirty-two consonant sounds of American English are summarized in Table.1.0. below.

	BILA-BIAL	LABIO-DENTAL	APICO DENTAL	APICO-ALVEOLAR	FRONTO-PALATAL	DORSO-VELAR	UVULAR	GLOTTAL
STOPS	p b		t d			k g		?
FRICA-TIVES		f v		Ø ð				h ɦ
SIBIL-ANTS				s z	Š ž			
AFFRI-CATES				č ĵ				

FLAPS & TRILLS			[ɾ́] [Ŕ]		
NASALS	m	m	n		ŋ
LATE-RALS			l ɬ		L
SEMI-VO-WELS		ŵ w	r	j	

Table 1.0: American English Consonants

Note: In the above phonetic chart, the symbols are arranged in rows according to the type of articulation and in columns according to the type of articulator used and the point of articulation involved. Sounds enclosed in brackets [ ] in the table are sounds which are not normal [unusual] in American English.

Summary of Consonant Phonemes of American English

The total membership of English consonant phonemes can be summarized as follows:

6 STOPS:	/ voiceless p, t, k ; voiced b, d, g/
2 AFFRICATES:	/ voiceless č, ; ĵ /
4 FRICATIVES:	/voiceless f, θ; voiced v đ/
4 SIBILANTS:	/voiceless s and š ; voiced z and ž/
3 NASALS:	/voiced m, n, ŋ {all nasal sounds are usually voiced}/
1 LATERAL:	/voiceless l {the lateral sound is usually voliceless} /
4 SEMIVOWELS:	/r, w, y, h {semi-vowels are sometimes called "glides"/

These 24 emic consonant phonemes cover all American dialects used in American English. Any variations which exist are minor and involve the distribution of certain allophones of the above 24 consonant phonemes.

4.0. The American English Vowel System: Vowels

Linguists define "vowels" as speech sounds with certain qualities: they are produced without any stoppage of the oral cavity or any constriction. They are also "syllabic" or "nuclear".

In a syllable, therefore, the vowel is the most prominent sound. Therefore, where there is a vowel, there will also be a syllable. However, the reverse of this is not true. This is due to the existence of "syllabic consonants". For example, the word "button" when pronounced quickly, contains the "syllabic n" [n̩].

Another characteristic of a vowel is that there are no clear cut distinctions between vowels, The transitions between vowels are gradual and vowels, threrefor, tend to "blend" into one another like the colors of a rainbow.

Phonetically, American English has been identified with at least 18 vowel sounds. Phonemically, however, it is possible to limit the number of vowel phonemes to only 9 phonemes, depending on the dialect involved. One of the more popular and accepted American English vowel system is the Trager-Smith vowel system [also known as the 3 x 3 or 9 vowel system].[Refer to Trager and Smith , An Outline of English Structure.]

We can represent this 3 by 3 vowel system as follows:

FRONT	CENTRAL	BACK	
HIGH	i	i	u
MID	e	∂	0
LOW	ae	a	ɔ

Table 2.0: American English Vowels

In American English, the syllabic nuclei of most dialects consist of allophones of the above 9 vowels either by themselves or in combination with the semivowel phonemes.

5.0. The Thai Sound System

It is possible to categorize the Thai vowel system as composed of nine positions of vowel phonemes, with short and long versions. Since length is phonemic in Thai, there are in fact eighteen distinct vowel phonemes.

This is represented in Table 3.0

FRONT (unround)			CENTRAL (unround)		BACK (round)	
CLOSE	i	i:	ɨ	ɨ:	u	u:
MID	e	e:	ɘ	ɘ:	o	o:
OPEN	ɛ	ɛ:	a	a	ɔ	ɔ:

Table 3.0: Thai Vowels

The three pairs of high vowels, three long and three short, can combine with /a/ to produce dipthongs: /ia, ɨa, ua, and i:a, ɨ:a, u:a/.

Thai consonant phonemes are categorized in Table: 4.0 below.

	Bilabial	Labio-Dental	Alveolar	Palatal	Velar	Glottal
Stops						
vl.unasp	p		t	c	k	?
vl.asp	ph		th	ch	kh	
vd	b		d			
Nasals	m		n		ŋ	
Fricatives	f		s			h
Semi-vowels	w		l		j	r

Table 4.0:Thai Sonsonants

6.0. Differences Between English and Thai Consonants

The consonant chart above Table 1.0 identifies the 32 consonant sounds of American English. As mentioned in the introduction of this paper, I have indicated that it is not practical to be comparing all of the English sounds with Thai sounds. Rather, since the purpose of this contrastive study is to be pedagogically instructive, I have chosen as points of comparisons, firstly fricative sounds; and secondly, stop sounds of L2 and L1 to be contrasted.

6.0.1.English Fricative Sounds vs. Thai Fricative Sounds.
Fricative sounds in American English have a fairly large membership. Altogether, there are 10 fricative sounds present in American English. Phonetically [etic], these fricative sounds consist of 2 labio-dentals [f, v]; 2 apico-dentals [0 , d]; 2 apico-alveolars [s, z]; 2 fronto-palatals [s {sh}, z {zh}; and 2 glottals [h, ɦ]. Such fricative sounds occur in voiced [vd] and voiceless [vl] pairs. Normally, linguists list the first sound as voiceless and the second as voiced. ie. [s, z].

In a direct comparison of English fricative sounds with Thai fricative sounds, it may not be obvious at first why certain English fricative sounds should prove troublesome to Thais learning English. After all, several of the English fricative sounds such as [s, f,, etc] are also present in the Thai sound system.

However, linguistic difficulties do arise from two major factors. The first type of problem stems from sounds which are present in English but are absent in Thai. Such sounds, /z, dz, th, etc/ do not normally occur in the Thai sound system.

The second type of problem stems from sounds which, although present in both the Thai and English sound systems, occur at different places [word initial, word medial, or word final positions]. That is, the sounds have different distributions. It is towards such "problem sounds" of English that causes learning problems, both in their production [speaking] and their reception [listening].

6.0.2. The voiceless/ voiced labio-dental fricative sounds [f, v]
Thais generally have no problem with the first member of this fricative pair [s] since it occurs in both English and Thai with similar distributions. The voiced version [z], however, is another matter and causes quite a lot of pronunciation problems, since the Thai language does not have this sound. Consequently, Thais tend to not distinguish between the 2 English minimal pair [sue] and [zoo] and pronounce both words as [sue]. Such learning problems occur in both the production and reception of words containing the sound [z].

The voiced labio-dental fricative [v] has a wide distribution in American English and has a fairly high "load-factor". This sound occurs initially [in initial position] in American English in words such as "van, vain, volume, value, valve, vacate". However, this sound also occurs in medial position in words such as "over, oven, avenue, overt". It is also used in final position in words such as " save, slave, brave, give, live, leave".

The production of this sound [v] is similar to the production of its voiceless counterpart [f]. To produce the sound [v], the speaker must move the lower lip upwards against the edge of the upper teeth in such a manner that the air passing through may be heard and there is voicing [there is significant vibration of the vocal chords].

Recognition [reception/listening] problems encountered by Thai native speakers stem from English minimal pairs such as "fain/vain, fast/vast, safer/ saver, safe/ save". Such learning problems can be overcome to a large extent through practice with minimum-pair drills.

6.0.3. The voiceless / voiced apico-dental [inter-dental] fricative [Ø , đ]
This pair of inter-dental fricative sounds has proved to be very troublesome for Thai learners of English since neither the voiceless [Ø] nor the voiced version [đ] is present in the Thai sound system.

The voiceless inter-dental fricative [Ø] sound derives its name from the production of the sound whereby the tongue is usually placed between the upper and the lower teeth. Although this sound has a low "load-factor", nevertheless, it is important in distinguishing between such words as "thin/tin" in initial position. It occurs in final position in "path" and in medial position in "ether" [a kind of medical gas used to render a patient unconscious.]

Although Thais often have problems producing this sound correctly, it is not a major problem due to its low load factor in American English. However, both production and recognition problems exists.

3.0.2. English Stop Sounds vs. Thai Stop Sounds
The most striking differences between English and Thai stop sounds are that there are aspirated stops in Thai whereas in English there are none that is phonemic. Therefore, in Thai, there is a difference in meaning between /ta/ meaning "eye" and /tha/ meaning "to paste or to paint" something. Similarly, there is a meaningful distinction between /kan/ , meaning to "guard against" and /khan/ , meaning "itchy". In English, such distinctions in meaning based solely upon aspiration and the lack of aspiration do not exist. This is not to say that aspiration does not exist in English but that such aspirations which do occur

are non-phonemic [not meaningful]. Therefore, if one pronounces the word "take" /tek/ with exaggerated aspiration /thek/, there would be no change in meaning whatsoever.

Because of the existence of phonemic aspirated stop sounds in Thai, there are many more stop sounds in Thai than in English which does not have phonemic aspirated stops..

Learning Problem: Thai ESL students do not have a problem in pronouncing English stop sounds. However, this is not the case with "consonant clusters". Thai has fewer consonant clusters than English. Therefore, Thai ESL students find it difficult to pronounce English consonant clusters which occur initially such as in the words "triple;

Thai Tones
Tones are phonemic in Thai of which there are five:

1.mid-tone - /na/ meaning a "rice field"
2.low-tone - /naa/ an expression to urge someone
3.falling-tone - /naa/ meaning "face"
4.high-tone - /naa/ meaning "aunt"
5.rising-tone - /naa/ meaning "thick"

4.0. Suprasegmental Sounds in English.

Stress

Stress, unlike in English, is non-phonemic in Thai. An emphatic sound can be employed in Thai but it is not phonemic in the sense that it does not distinguish meaning, but rather an indication of emotion. An especially high and longer sound can be used to modify the usual high tone in emotional or emphatic exclamations.

In English, however, stress is phonemic [meaningful] and plays a very important6 role in conveying meaning and also in distinguishing distinctive sounds. There are 4 levels of stress, with each one having allophones, the various minute gradations noticeable in actual speech.

The strongest stress in English is called "primary stress" . The next strongest stress in English is called "secondary stress". Next comes the "tertiary stress". The weakest stress mark or sound in English is called "weak accent" or "zero stress". [See Phinit-Akson, Linguistic Structure of English, 1994 for more details on English "stress".]

Linguists often use the following 4 syllable sentence to illustrate all 4 types of sentence stress: "Tell me the time."

Indeed, the use of different stress in English can differentiate between two different meanings:

/ay skriym / "I <u>scream</u>".

/ays kriym / "<u>Ice</u> cream".

In "I scream", the primary [strongest] stress falls on the final syllable. In "Ice scream", however, the primary stress falls on the first syllable.

In contrast, Thai makes no such phonemic distinctions. Therefore, no matter how the speaker "emphasizes" [stresses] the Thai syllable, the meaning always remains the same:

/<u>Suchada</u> pai rongrian/ [Suchada go to school!] – with emphasis on "Suchada"

/Suchada pai <u>rongrian</u>/ [Suchada go to school!] - with emphasis on "Rongrian"

[In Part 2, we shall contrast and compare the differences of other segmentals and supra-segmentals between English and Thai.]

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