TEACHING ENGLISH PHONOLOGY TO SPEAKERS OF
THE FORMOSAN DIALECT OF CHINESE

by

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CHAPTER I
INTRODUCTION

1.1 "The linguist's first statement about language is that it is made up of sounds. Other symbolic systems—writing, Morse Code, even hieroglyphics—are secondary representations". In our own daily life, "we learned to speak before we learned to write, and we carry our daily affairs far more by means of speech than by writing."

1.2 Thus, "In learning a new language the chief problem is the mastering of the sound system—to understand the stream of speech, to hear the distinctive sound features and to approximate their production." It is an obvious fact that when learning a foreign language students tend to transfer their entire native language system in the process, including its phonemes and their variants, its stress and rhythm patterns, and its intonation patterns." When a Formosan speaker learns to speak English, he tends to transfer his Formosan habits which have been practiced since childhood, "---to transfer known elements of language from familiar situations to new situations or to create new utterances from familiar ones in a new situation."

1.3 The most basic elements in the expression system are the phonemes. No two languages have the same set of phonemes. Thus, the first thing in second language learning is to practice the "peculiar" sounds through the series of steps—recognition, imitation, repetition, variation and selection.
THE FORMOSAN DIALECT

1.4 The Formosan dialect is defined as the spoken language which is now used by the Formosan people who immigrated from the Hokkien Province of the China mainland to the Island of Formosa and the Pescadores about three centuries ago. From the traditional viewpoint, such a "Formosan dialect" may not exist because it might be regarded as the Hokkien dialect (or Amoy dialect) which spread through Formosa.

1.5 The Chinese language can roughly be classified into Mandarin, Soochow, Cantonese, Hakka and Hokkien dialects.

1.6 In this case, Hokkien dialect is often referred to as the Amoy dialect, which is used in the southern Hokkien Province. As far as the total population using the dialect is concerned, there are about 5 million people in the southeast of Hokkien, northeast of Canton, about 7 million in Formosa and about 3 million overseas speakers of Hokkien in South Pacific areas, i.e., the Philippines, Viet Nam, Thailand, etc. These groups total 15 million people who are using the Amoy dialect.

1.7 Yu-te Wang points out that the Formosan dialect should be distinguished from the Amoy dialect for a number of reasons. Languages constantly change. About a century before the American people won their independence from the British Empire, the Formosan people had already established their own area. For the most part, these Pilgrim Fathers crossed over from the southeastern part of Hokkien Province three centuries ago. Since then, the manners, customs, and the language have been forming their own peculiarities.
Of course, they constitute only a small part in the history of the Chinese race which has continued uninterrupted for four thousand years. This is one reason that research on the Formosan 11 dialect was considered of no importance. However, it is true that the Formosan dialect is not pure Amoy dialect just as American English is not exactly the same as the English spoken in England. A view of the internal structures of these two dialects shows they are different in: (1) phonemic differentiation; (2) the scope of vocabulary; due to the Japanese domination for 50 years (1895-1945) loanwards have been adopted, and under the effect of modern living, new vocabulary has been formed; (3) the differentiation of tones (pitches) and intonation.

PURPOSE AND PROCEDURES

1.8 This study is intended to help the Formosan speaker to learn English phonology, by demonstrating the methods advocated by linguists in approaching the problems of teaching English pronunciation to Formosan speakers.

1.9 Many western people consider that all of the oriental people, including Korean, Japanese, Thai and Mandarin, have general difficulty in producing and distinguishing English /l/ and /r/. If we make a closer observation, we find the difficulty is different from language to language. Taking Mandarin as an example: Mandarin has initial /l/ and /r/, but no initial /r/ or final /l/. Thus Mandarin speakers will have difficulty in producing /r/ in initial and /l/ in any other than initial position.
Formosan, on the other hand, does not have a phoneme /r/. Formosan speakers will have trouble in producing English /r/ in any position. Further, Formosans find difficulty in distinguishing English phonemes /l/ and /d/, since Formosan has no alveolar, voiced stop /d/, but has the liquid, alveolar, voiced /l/. This paper will explore these contrasts in detail.

1.10 The first step in the procedure is to contrast the phonemic inventories of the two languages. Second, the contrasts are explored in terms of phonetics and allophonics. Finally, on the basis of contrasts noted and interferences predicted, drills are suggested for meeting the problems that Formosan speakers may be expected to encounter in learning the pronunciation of English.

REVIEW OF LITERATURE

1.11 "The twenty years since the beginning of World War II have witnessed what amounts to a revolution in the teaching of language. The change consists largely of a growing recognition of the relevance of linguistics to language teaching, and the development of a methodology for the application of the findings of linguistic investigation to the teaching of language."

There are a number of books concerned with the contrastive analysis approach to language teaching.

1.12 Among the most significant contributions of the linguists are the presentations of linguistic analysis and how it relates to the problems of second language teaching. Jones presents the idea of phonemes as implicit in the work of all phoneticians
and orthographists who have employed broad transcriptions. Bloomfield presents the fullest introduction to linguistics and is regarded from a behaviorist viewpoint as an indispensable summary and guide. Prator provides a check list of categories in accordance with the international phonetic alphabetic systems of several languages. Gleason gives a clear description of present techniques of analysis. Francis discusses carefully the allophonic of English. Smith and Trager present the system of English phonemics used by linguists in the past few years. Thomas makes a more accurate analysis of consonants and vowels of American English. Wise uses diagrams in observing consonant and vowel systems for articulation training of students in English as a foreign language. Fries' study is concerned with teaching English in the most effective way—the teacher should know its sound system, its structural system and its vocabulary—from the point of view of a descriptive analysis in accord with modern linguistic science. Lado tries to relate the theory of descriptive linguistics to the problems of second-language teaching. He deals with the comparison of sound systems and points out the value of contrastive studies. Hill notes that, if scientific analysis of language produces results which are of use to the language teacher, and if linguistic scientists can state them in a usable form, these results should sooner or later reach the classroom. He strongly recommends that language teachers have as important a job as linguistic scientists in improving language teaching.
1.13 A review of the literature on Formosan dialect reveals only a few works in this field. Saunders outlines the phonological problems of the Hokkien speaker in learning English. Although the scope of his work is more limited than "Chinese language", yet from the discussion in 1.7 we know that it is still broader than the "Formosan dialect". Wang presents the system of Formosan phonemics most generally used by previous researchers. His work is considered the first book on the Formosan dialect written from a scientific rather than humanistic viewpoint. Ko and Tan's book is composed for American Catholic priests wishing to master spoken Formosan. Chen's study is based on the contrastive analysis of the allophonic of Formosan and English. From this she divides the English phoneme inventories in the following steps: (1) sounds which do not exist in Formosan; (2) sounds which are very similar, but slightly different. She also discusses in detail English consonant clusters which will trouble the Formosan speaker.

1.14 Besides the materials mentioned above, there are a number of contrastive studies done which have helped me in analysing and contrasting English and Formosan. The above studies are reliable sources and a great help to me in my study, but there is no doubt that further study on the Formosan dialect is needed.
CHAPTER 2

CONTRASTIVE ANALYSIS OF CONSONANTS
OF ENGLISH AND FORMOSAN

2.1 Contrastive Consonant Phoneme Inventory

As indicated by reference to the phoneme inventory for English presented by Trager and Smith and the inventory for Formosan presented by Yu-te Wang, the consonant systems of English and Formosan are somewhat different. English has a systematic arrangement of voiced and voiceless fricatives from dental to palatal, while in Formosan, the fricative series has only two phonemes /s h/. There are three phonemes /c' c j/ classified as sibilants. Third, in English, stops and fricatives are voiced and voiceless while in Formosan, voiceless stops and sibilants may be further classified as aspirate and non-aspirate. A further difference is that Formosan lacks the alveolar voiced stop /d/, the labio-dental fricatives /f v/, alveolar /z/, alveo-palatal /ʃ ʒ/, interdental fricatives /θ ʒ/ and retroflex /r/, but does have /p' t' k' c' c j/ lacking in English.

2.2 Articulation of English Consonants

The consonant phonemes in English which have counterparts in Formosan should not be difficult for the Formosan to produce in isolation. There are, of course, phonetic details which must be taken into account if the student is to achieve a mastery of the English sound system. Further, the Formosan speaker will have difficulty in producing English /d f v θ ʒ ʃ ʒ z/, which
have no counterparts in Formosan. The Formosan consonants lacking counterparts in English are relatively unimportant to the Formosan speaker who is learning English since he will not need them.

2.21 **Stops**

The Formosan learner can usually employ his Formosan articulation for the English stops /p b t k g/ with satisfactory results. The predictable problems of articulation and discrimination in the stop series are associated with /d/, for which the Formosan speaker will tend to substitute /l/. It is necessary for the Formosan speaker to distinguish consistently and accurately between English /d/ and /l/. Both /d/ and /l/ are made in the same place by putting the tip of the tongue on the alveolar ridge. However, the sound /d/ is a voiced stop, while in the case of /l/, air is permitted to escape around the sides of the tongue.

2.211 The /d/ phoneme in English contains several allophones. Wise describes its distribution as follows:

a. **Dental** /d/ , that is /d/ as in width /wIdo/. (Since _d_ is never pronounced with the tongue in the dental position except before th.)

b. **Unreleased** /d/ , as when mad /mæd/ is spoken without immediately moving the tongue from contact with the alveolar ridge.

c. **Alveolar** /d/ , which is regarded as the normal English pattern. It is made with the tongue in contact with the alveolar ridge.

d. /d/ with bilateral plosion, when followed by syllabic /l/ , as in riddle /ridl/.

e. /d/ with nasal plosion when followed by syllabic /n/ , as in ridden /ridn/.

f. **Medial** /d/ between pronounced vowels is often heard in standard American English as /l/ , as in ladder /lædə/.
2.212 The student may be given drills with /d/ in various positions.

made  do  riddle  ridden  ladder  

had  dime  bottle  sudden  leader  

paid  dear  noodle  garden  redder  

head  down  candle  harden  better  

2.22 Lateral

The English /l/ is typically produced with the tip of the tongue touching the alveolar ridge, the mid part curving downward and the back raised. The resulting schwa-colored /l/ causes any English vowel before /l/ to have an off-glide in the direction of mid-central.

2.221 There are four recognizable /l/ allophones in most dialects of American English. According to Francis these are the voiced and voiceless apico-alveolar laterals, the voiced apico-alveolar lateral with dorso-velar coarticulation, and the voiced dorso-velar lateral. Francis describes the distribution of /l/ allophones in English as follows:

a. The voiced apico-alveolar lateral, [l] the so-called "clear l". It occurs in initial position and between a voiced consonant and following vowel as in link [link], and glance [gläns].

b. The voiceless apico-alveolar lateral, [l] occurs often with voiceless consonants, as in flip [flip]. The sound is never heard initially.

c. The voiced apico-alveolar with dorso-velar coarticulation, [IPA], is the usual variety of so-called "dark l" found after vowels and as a syllabic nucleus in English. Examples of the usual position of this sound are gulf [gʌlf] and bottle [batl].

d. The voiced dorso-velar, [IPA] is an occasional dialectal or individual variant of [IPA], replacing it in some or all positions as in milk [milk], milk [mlk] and milk [mlk].
2.222 The Formosan /l/ is somewhat more sonant and is frequently pronounced much more rapidly than in English. Sometimes it sounds like /d/ to an English speaker. This is because the Formosan /l/ is a voiced alveolar stop. It is what is known technically as "flapped d".

2.223 Formosan /l/ occurs only in the initial pre-vocalic position. Thus, the predictable problems for Formosans in producing English /l/ come in post-vocalic position and after a voiceless consonant.

2.224 When Formosan speakers pronounce an /l/ in the preconsonantal position, they tend to pronounce it as an /o/. When /l/ comes after a back vowel and is followed by consonant, /l/ is omitted by the Formosan speaker. Thus, a drill of /-VlC/ is needed.

2.225 A drill like the following will be helpful in establishing the new habit.

<table>
<thead>
<tr>
<th>/lVl-/</th>
<th>/Cl-/</th>
<th>/ClV-/</th>
<th>/CVlC-/</th>
</tr>
</thead>
<tbody>
<tr>
<td>lily</td>
<td>play</td>
<td>dale</td>
<td>wolf</td>
</tr>
<tr>
<td>Leland</td>
<td>blow</td>
<td>fall</td>
<td>help</td>
</tr>
<tr>
<td>lowly</td>
<td>clay</td>
<td>real</td>
<td>false</td>
</tr>
</tbody>
</table>

2.226 The following phonology drills are designed to present systematically the pronunciation of English /d/ in contrasting with English /l/. These drills are limited to the alveolar /d/ in the initial position. Their trouble with /d/ in the medial and final positions will not be mentioned here, because in these cases, /d/ is replaced by /t/.
English /l/ is an alveolar lateral, with a relatively front vowel resonance, before vowel and /j/.

English /d/ is a voiced alveolar stop, produced in a manner paralleling that of /t/, with two exceptions: (1) the vocal bands are in vibration (2) there is no strong aspiration.

Drill 1. Imitation drill.

a. Put the tip of your tongue on the alveolar ridge, close velum, and let the vocalized breath stream come out over both sides of the tongue, say /l/.
Listen: /l/ /l,l/ /l,l,l/ /l,l,l,l/
Imitate: /l/ /l,l/ /l,l,l/ /l,l,l,l/

b. Now put the tip of your tongue at the same place as /l/, close velum and let the vocalized breath stream come out suddenly with a stopping sound, say /d/.
Listen: /d/ /d,d/ /d,d,d/ /d,d,d,d/
Imitate: /d/ /d,d/ /d,d,d/ /d,d,d,d/


Listen:  
late date  
lot dot  
lime dime  
line dine  

Repeat: 
late date  
lot dot  
lime dime  
line dine

Listen:
It's _late_.
It's a _date_.
There's quite a _lot_.
There's a _dot_.
It's a _lime_ tree.
It's a _dime_.

Repeat:
It's _late_.
It's a _date_.
There's quite a _lot_.
There's a _dot_.
It's a _lime_ tree.
It's a _dime_.
Let's _line_ up.
Let's _dine_ out.

It's a _lamp_.
It's _damp_.
I think I _like_.
I see the _dike_.

Drill 4. Repetition drill. English /d/ is an alveolar voiced stop.

Listen:
Dora has a _date_.
Dora has a _dime_.
Dora has a _dove_.
Dora has a _difficulty_.
Dora has a _dimple_.

lamp  damp
like  dike
love  dove
low  doe
Repeat: Dora has a date.
Dora has a dime.
Dora has a dove.
Dora has a dimple.
Dora has a difficulty.
Dora has a degree.
Dora has a dish.
Dora has a dream.
Dora has a drink.
Dora has a date.
Dora has a dime.

2.23 Fricatives

The predictable problems of discrimination and articulation in the fricative series are associated with /f v θ s z ŋ x/.

2.231 English /f/ is a voiceless labiodental fricative, /f/ occurs initially, medially and finally as in feed, coffee and half.

2.2311 The Formosan speaker uses a voiceless bilabial fricative /h/ for the English /f/ in the initial, medial and final position.

    Such as /hud/ for food,
    /koŋiy/ for coffee,
    /taŋu/ for tough.

Formosan students must, therefore, practice these sounds separately in the initial position, the medial position, and the final positions.
2.2312 A drill contrasting \( [\text{w}] \) with \( [\text{f}] \) in the initial position will help to establish \( [\text{f}] \) articulation.

<table>
<thead>
<tr>
<th>( [\text{w}] )</th>
<th>( [\text{f}] )</th>
</tr>
</thead>
<tbody>
<tr>
<td>wheel</td>
<td>feel</td>
</tr>
<tr>
<td>while</td>
<td>file</td>
</tr>
<tr>
<td>white</td>
<td>fight</td>
</tr>
<tr>
<td>whole</td>
<td>foal</td>
</tr>
<tr>
<td>why</td>
<td>fie</td>
</tr>
</tbody>
</table>

2.2313 The student may be given drills beginning with items with /f/ in initial position, thence to medial position and final position.

| feel    | coffee | tough |
| file    | dolphin| photograph |
| fight   | muffin | half |

2.232 English /v/ is the voiced counterpart of /f/. It is a voiced, fricative, labiodental continuant. It is made by resting the upper teeth lightly on the lower lip, closing the velum, and passing the voiced air stream through the constricted spaces between the lips and teeth.

2.2321 Since there is no counterpart to English /v/ in Formosan, the Formosan speaker tends to substitute his bilabial voiced stop /b/ for English /v/ in the initial, medial and the final positions. He tends to say /beli/ for very, /sabiys/ for service, /hæb/ for have.

2.2322 In order for the Formosan to avoid the substitution of /b/ for /v/, a drill contrasting English /b/ with /v/ will help
to establish the /v/ articulation.

<table>
<thead>
<tr>
<th>berry</th>
<th>very</th>
<th>harbored</th>
<th>Harvard</th>
<th>dub</th>
<th>dove</th>
</tr>
</thead>
<tbody>
<tr>
<td>bigger</td>
<td>vigour</td>
<td>cupboard</td>
<td>covered</td>
<td>robe</td>
<td>rove</td>
</tr>
<tr>
<td>bolt</td>
<td>volt</td>
<td>ribbon</td>
<td>riven</td>
<td>Serb</td>
<td>serve</td>
</tr>
</tbody>
</table>

2.233 English /θ/ is a voiceless, interdental, fricative, made by putting the tongue between the teeth and allowing the breath to escape with a hissing sound.

2.2331 The Formosan speaker substitutes the fricative /s/ for English /θ/ in the initial, medial and final position, such as

/s/ for **think**
/tuwselk/ for **toothache**
/tiys/ for **teeth**

Formosan students must, therefore, practice /θ/ separately in the initial position, the medial position and the final positions.

2.2332 A drill contrasting /s/ with /θ/ in the initial, and final position will help to establish /θ/ articulation. Since the /-s-, -θ-/ contrast carries such low functional load in medial position, the phonetic statement by the teacher should suffice when the discrimination problem is encountered in medial position.

<table>
<thead>
<tr>
<th>/s/-</th>
<th>/θ/-</th>
<th>/-s/</th>
<th>/-θ/</th>
</tr>
</thead>
<tbody>
<tr>
<td>sink</td>
<td>think</td>
<td>tease</td>
<td>teeth</td>
</tr>
<tr>
<td>sought</td>
<td>thought</td>
<td>face</td>
<td>faith</td>
</tr>
<tr>
<td>sing</td>
<td>thing</td>
<td>mouse</td>
<td>mouth</td>
</tr>
<tr>
<td>some</td>
<td>thumb</td>
<td>kiss</td>
<td>kith</td>
</tr>
</tbody>
</table>

2.234 English /ð/ is the voiced counterpart of /θ/. It is an interdental fricative, made by placing the tip of the tongue in
light contact with the back surfaces of the front teeth and passing a stream of vocalized air through the constricted spaces between the tongue and teeth. The velum is closed and the sides of the tongue are in contact with the upper molars. /з/ may occur initially, medially and finally, as in

there / ʦehr /
gather / ɡэ̆ʃə r /
bathe / bэ̆yд /

2.341 Formosan students tend to substitute /z/ for /з/ in all positions, but often substitute /l/ in initial and medial positions. In other words, we can predict that they will substitute /z/ for /з/ in final position, but that either /z/ or /l/ might be substituted for /з/ in initial and medial positions. Since these contrasts carry low functional load in initial and medial positions but relatively high functional load in final position, drill contrasting /z/ and /з/ in final position can be used to establish the discrimination. Thereafter, the phonetic statement by the teacher, with perhaps a brief drill using nonsense syllables to supplement the few available minimal pairs, should suffice if the student should say, for example, "uzzer" for "other". If the student should turn from /z/ to /l/ in the attempt at /з/ drill contrasting /z l ʒ/ should be employed.

Sue's - soothe razzer - rather Zen - then
rise - writhe Z - thee
sees - seethe breeze - breathe

close - clothe
/ʌ-  l-  ə/- 
Zen  Len  then
Z  Lee  thee

2.235  English /s/ is an alveolar fricative, made by putting the
tip of the tongue at or near the roof of the mouth behind
the tooth ridge and letting the breath escape with a hissing
sound. Formosan /s/ is a dental fricative. When it is followed
by /l/, the tongue moves backward making a palatalized /ʃ/,
but it is not English /ʃ/. The Formosan speaker does not have
trouble with /s/ in the final position. The predictable difficulty
with /s/ is in the initial and medial positions before /-l/
2.2351 A drill contrasting /sV-/ with /si-/ in the initial
position and /-sV/ with /-si-/ in the medial position will help
establish /si-/ and /-si-/ artuculations.

/sV-/   /si-/   /-sV-/   /-si-/  
saw  see   sensitive  sincere
sang  sing   answer  missing
sole  seal   exercise  voicing

2.236  English /ʃ/ is a voiceless palato-alveolar fricative
continuant. It is made by simultaneously blocking the nasal
passages with the velum and raising the tongue against the
lateral inner surfaces of the upper teeth with the tongue directed
toward a point just back of the alveolar ridge. The vocalized
breath stream is forced through the close stricture between the
blade of the tongue and the roof of the mouth.
2.2361 Since /ʃ/ does not occur in Formosan, students will need
to take particular care in pronouncing /ʃ/ as described above.
Particularly, Formosans will need to avoid substituting palatalized $\zeta$ for $\eta$.

2.2362 Drills contrasting /s/ and /z/ in the initial, medial and final positions will help establish articulation of /z/.

- seat - sheet
- missing - mission
- boss - bosh
- seep - sheep
- was - wash
- seen - sheen
- case - cash

2.237 English /z/ is the voiced counterpart of /s/. It is a voiced, fricative alveolar continuant. It is made by placing the tongue into occlusion with the inner surfaces of the upper teeth, except for a narrow passage over the tip of the tongue in front. The vocalized breath stream is passed through this constricted passage. English /z/ occurs initially, medially and finally.

2.2371 Chen says that there is no phoneme /z/ in the Formosan counterpart; it is simply an off-glide for /j/. The Formosan speaker does not have difficulty with /z/ in the initial position before any vowels other than /i/. The trouble lies in the initial, medial position before vowel /i/ and final position. This is because Formosans pronounce English /z/ as a voiced Formosan /s/; therefore, their trouble with /z/ parallels the trouble with /s/.

2.2372 Drills like the following are usually helpful in establishing the articulation of /z/.
2.238 English /\v/ is the voiced counterpart of /\z/. /\v/ is produced by raising the tongue against the lateral inner surfaces of the upper molars with the tip directed toward a point just back of the alveolar ridge and passing the vocalized breath stream through the close stricture between the blade of the tongue and the palate. English /\v/ occurs medially and finally.

2.2381 The sound /\v/ is the least frequently used of all the sounds of English. but Formosan does not have it at all. Thus, Formosan students will need to take particular care in pronouncing /\v/ as described above.

2.2382 Drill like the following is suggested to help establish the new articulation.

measure garage
pleasure rouge
vision beige
confusion liege

2.24 Retroflex

2.241 The consonant /r/ is a voiced retroflex alveolar continuant. /r/ is made by pointing the tongue toward the roof of the mouth at about the point where the palatal arch joins the gum ridge, and passing the vocalized breath through the aperture between the tongue and the hard palate. The velum is closed.
2.242 English /r/ is formed in various ways in different dialects and idiolects. It is usually accompanied by some slight "protrusion" of the lips, and it is generally frictionless. "Before vowels /r/ is a vowel-like glide. In postvocalic position we substitute either a vowel for the r, or delete it entirely."

2.243 As indicated in 2.1, Formosan has no such consonant as /r/ in English. Students tend to substitute /l/ for /r/ in the initial and post-consonantal positions. Hence, a drill contrasting /l/ with /r/ in initial and post-consonantal positions will help establish articulation of /r/.

```
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>/l-/</td>
<td>/r-/</td>
<td>/Cr-/</td>
<td>/Cr-/</td>
</tr>
<tr>
<td>light</td>
<td>right</td>
<td>play</td>
<td>pray</td>
</tr>
<tr>
<td>lane</td>
<td>rain</td>
<td>glad</td>
<td>grade</td>
</tr>
<tr>
<td>low</td>
<td>row</td>
<td>flight</td>
<td>fright</td>
</tr>
<tr>
<td>leap</td>
<td>reap</td>
<td>flame</td>
<td>frame</td>
</tr>
</tbody>
</table>
```

2.244 Further, a predictable problem for Formosan students is to distinguish among three allophones of the English /r/. Wise describes the distribution of the three /r/ allophones as follows:

These three sounds are [ɹ], [ɾ], and [r]. Fricative r tends to occur automatically after /t/ or /d/, as in try /tɹai/ and dry /dɹai/. Thrilled r occurs in standard English after /θ/, as in three /θ ri/. One tap trill r is regularly used intervocically in British English as in very /vɛɹi/, or at the end of a word as in "far away" /fɛɹweɪ/.

2.245 The Formosan student must, therefore, practice /r/ in the initial, post-consonant, intervocalic, and post-vocalic positions
2.25 The Formosan student should have no difficulty in the articulation of English nasals /m n y/ since they are essentially the same as their Formosan counterparts.

2.251 The Formosan's trouble with English nasals involves their distributions. English /m n/ may occur in the initial, medial and final positions. /y/ occurs only in the medial and final positions. The Formosan /m n/ occur only in the initial and post-vocalic final positions and /y/ may occur in the initial and final positions.

2.252 The Formosan's predictable problem with nasals, then, is with the use of post-vocalic /m n y/. This is because the Formosan nasals are distributed only after certain vowels:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>/rVC-/</td>
<td>/CrV-/</td>
<td>/VrV-/</td>
<td>/-r/</td>
<td>/-rC/</td>
</tr>
<tr>
<td>rear</td>
<td>pray</td>
<td>very</td>
<td>color</td>
<td>turn</td>
</tr>
<tr>
<td>rank</td>
<td>drive</td>
<td>arrow</td>
<td>car</td>
<td>Mary</td>
</tr>
<tr>
<td>reap</td>
<td>grade</td>
<td>Paris</td>
<td>pair</td>
<td>curve</td>
</tr>
<tr>
<td>road</td>
<td>free</td>
<td>arrive</td>
<td>four</td>
<td>nerve</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>in (stamp)</td>
<td>un (stable)</td>
<td></td>
</tr>
<tr>
<td>im (cloudy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iy (should)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>en (smoke)</td>
<td>om (numerous)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>og (prosperous)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>am (night)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>an (safe)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ay (husband)</td>
<td></td>
</tr>
</tbody>
</table>
2.253 The above chart indicates that Formosan has difficulty in pronouncing /em eg æm æm um um on/ and /im in in /, /æm æm æj /, /m æm æg /. Since these carry low functional load, the phonetic statement by the teacher should suffice when such problem is encountered.

2.26 Consonant Clusters

English utterances often have a group of certain consonants clustered together without any vowels in between, i.e., "A sequence of two or more phonemes of the same class without the intervention of a phoneme of another class". On the other hand, there are no true consonant clusters in Formosan. After students have learned to differentiate English consonants individually, they still may not be able perceive or produce clusters precisely. Therefore, consonant clusters often cause serious trouble to native speakers of Formosan.

2.261 Each language has its own characteristic consonant and vowel arrangements; CV, VC, CVC, COV, etc. In English, the following arrangements are possible:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>/o/</td>
<td>oh</td>
</tr>
<tr>
<td>CV</td>
<td>/pai/</td>
<td>pie</td>
</tr>
<tr>
<td>CVC</td>
<td>/hæt/</td>
<td>hat</td>
</tr>
<tr>
<td>VC</td>
<td>/it/</td>
<td>eat</td>
</tr>
<tr>
<td>VCC</td>
<td>/ælk/</td>
<td>elk</td>
</tr>
<tr>
<td>VCCC</td>
<td>/imps/</td>
<td>imps</td>
</tr>
<tr>
<td>COV</td>
<td>/drai/</td>
<td>dry</td>
</tr>
<tr>
<td>COVC</td>
<td>/brik/</td>
<td>brick</td>
</tr>
</tbody>
</table>
In Formosan, only the following arrangements may occur:

<table>
<thead>
<tr>
<th>Syllable Structure</th>
<th>Pronunciation</th>
<th>English Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCVCC</td>
<td>/bledz/</td>
<td>blades</td>
</tr>
<tr>
<td>CCVCCC</td>
<td>/sk rts/</td>
<td>skirts</td>
</tr>
<tr>
<td>CCVCCCC</td>
<td>/glimpst/</td>
<td>glimpsed</td>
</tr>
<tr>
<td>CCCVC</td>
<td>/stret/</td>
<td>straight</td>
</tr>
<tr>
<td>CCCVCC</td>
<td>/skwizd/</td>
<td>squeezed</td>
</tr>
<tr>
<td>CCCVCCC</td>
<td>/skw rmd/</td>
<td>squirmed</td>
</tr>
</tbody>
</table>

*For this combination in Formosan, the second consonant must always be a nasal.*

2.262 When the structures of syllables in English and Formosan are compared, the difficulties of Formosan with consonant clusters become clear. In most cases Formosan does not allow many consonants to cluster together as English does. Formosan allows for no consonant clustering within the structure of its consonant-vowel arrangement.

2.263 In English, syllable division is not highly predictable, while in Formosan, all words are either separate syllables or made up of two or more distinct syllables. In Formosan both the number and the types of syllables are limited. Syllables like English *brick, straight, squirmed* are quite impossible in Formosan.
2.264 English consonant clusters which occur in the initial, medial and final position such as those in *train*, *cluster* and *most*, have no counterparts in Formosan. Therefore, they may cause Formosan students a great deal of trouble. The Formosan learner is used to having a vowel after the consonant. Thus he will pronounce the above English consonant clusters as follows:

/ˈtərən/ for *train*,
/kuləˈsʊtə/ for *cluster*,
/móˈsuto/ for *most*.

2.265 However, Saunders indicates that the initial cluster gives less trouble. Formosan learners tend to reduce medial clusters as /ˈfleʃn/ for *flexion*, /ˈspəʊkmən/ for *spokesman*. Final clusters including inflectional suffixes show the highest incidence of misproduction. Saunders points out that an analysis of errors in consonants in written work shows a proportion of 1:5 for initial compared with final position, that is, there are five times as many errors in finals as in initials.

2.266 English employs combinations of consonants in the initial position which are called "post junctural and prevocalic clusters." In this position, the occurrence will be as follows:

/play/ /ˈgl-/ glad /ˈstr-/ stray
/pr-/ /ˈgr-/ grade /ˈsf-/ sphere
/bl-/ /ˈfl-/ flight /ˈsn-/ snap
/br-/ /ˈfr-/ /ˈɡrait/ /ˈsm-/ small
/tr-/ /ˈθr-/ thread /ˈsl-/ sleep
/dr-/ /ˈsp-/ speech /ˈspl-/ splash
Since the other combinations /tw, kw, hw, sw, dw, gw/ are considered no trouble for Formosans, they will not be discussed.

2.267 The final position is known as "post-vocalic, prejunctural cluster". In this position, the occurrence will be as follows:

2.268 For overcoming the difficulty arising both in the initial and final clusters, the phonetic statement with a short imitation drill like the following and an occasional reminder when incorrect pronunciation occurs, should help:

1. twin  swim  brain
   quick  dwell  glad
white       plan       flame
snap        pray       span
small       blame       state

2. tent       pump       ask
lend        lunch       corp
fence       film       box
sink        nymph       occurs
change      grasp       short

2.27 Syllabic Consonants

In words such as little, sudden and wouldn't there are
only consonant sounds in the final syllables. These are known
as syllabic consonants. They may make up a syllable without the
accompaniment of vowels. They are difficult to pronounce for
Formosans. In place of /litl/, /wudnt/, they frequently pronounce
/litel/, /wudnt/. If they are further reminded, these sounds
will become /litl/ and /wunt/.

2.271 Syllabic consonant occurs when a syllable ends in /t/,
/d/ or /n/ and the next syllable is unstressed and contains an
/l/ or /n/. This may be expressed by a formula:

\[
\text{d} \quad \text{unstressed syllable containing } \frac{1}{n} > \text{syllabic consonant}
\]

All the necessary conditions are present, for example, in saddle
and cotton, and we have the pronunciations /sædəl/ and /kæntən/.
In content /kəntənt/, there is an /n/ followed by a /t/,
but the /n/ is in a stressed syllable, so no syllabic consonant
results.
2.272 There are /r/, /d/, /n/ and /l/ involved in syllabic consonants which are formed with the tip of the tongue touching the tooth ridge between /r/ and /n/. If the tongue tip breaks contact and moves from its fixed position for even a fraction of a second, it will result in the insertion of an /ə/ between the two consonants.

2.273 In Formosan, there are only two syllabic consonants, /m/ and /ŋ/. These two may be called syllabic nasals for their manner of articulation. While the Formosan learns English syllabic final /n/ as in sudden, /ŋ/ will be used instead of /n/, thus /sudn/ becoming /sudŋ/.

2.274 It might be helpful for the Formosan student to drill as follows:

happen
cotton
ribbon
sunken
kitten
ridden
forbidden
undertaken

2.28 Semi-Vowels

"From an articulatory viewpoint, /w, y, h/ are similar to fricatives, but from a distribution viewpoint, it is more convenient to class them separately." So, the term "semi-vowel" is rather a term of distribution than of articulation. "In
pre-vocalic position in the same syllable with following vowel, they function like consonants; but in post-vocalic position in the same syllable with preceding vowel, they function as vocalic off-glides. In this light, /r/ could be placed in either category or both."

Chen says that the semi-vowels /y w/ in English can be said to be non-existent in Formosan. She sees that an equal syllability is shared by each member of the vowel cluster. For example, in the word /lai/ (to come), equal prominence in pronunciation is given to both the /a/ and the /i/. But, since Formosan is a tone language, the tone phoneme may change the sound quality in some situations. There are seven tones in Formosan: tone 1—high-sustain, tone 2—rising, tone 3—falling, tone 4—neutral, tone 5—falling and rising, tone 6—mid-sustain and tone 8—snappy. Chen's statement only applies in the situation of tone 1, tone 5 and tone 6. In other situations, this may not hold true as in /duy/ (tone 8) (right) where the phoneme /y/ can not be the phoneme /i/, because /y/ does not share the same syllability as /u/ does.

It seems pedagogically efficient, then, to assume that Formosan has three semi-vowels /y w h/ which function as vocalic off-glides.
CHAPTER 3

CONTRASTIVE ANALYSIS OF VOWELS

OF ENGLISH AND FORMOSAN

3.1 Contrastive Vowel Phoneme Inventory

There are nine vowels in English, distributed as from
front and high to back and low, according to the articulations
of the tongue and its position in mouth, these are: front
/i e æ/ central /æ a/ and back vowels /u o ø/.

Formosan has only six vowels. These are: front /i e/, central
/æ a/ and back vowels /u o/. This contrast indicates
that English makes three discriminations which the Formosan speaker
does not have /æ æ œ/.

3.2 English Vowel Phonemes

3.21 For many years authorities have differed as to how many
vowel sounds there are in English. Recently, however, linguists
have discovered that there are only a limited number of vowel
sounds which make a distinction in meaning between a pair of
words in English. (i.e. like the differences in beat, bit,
bait, bet, bat, boat, etc.)

3.22 According to the widely accepted Trager/Smith analysis,
the nine vowel phonemes of English combine with the semivowels
/w y h/ to form the gliding vowel nuclei so characteristic of
English and the traditional diphthongs /ay, oy, aw/. With
reduction of stress all may undergo modification in quality in
the direction of central so that in unstressed syllables they
frequently are morphophonimically replaced by /æ/ or /œ/.
The front vowels are made with lips spread, the back vowels with lips rounded, and the central vowels take neutral position.

3.23 Each of these nine vowels can occur alone, with /y/, with /w/, or with /h/. This makes a total of thirty-six possible nuclei. Probably no single dialect has all of them, though some approach it closely. Every one of the thirty-six occurs, however, in some American dialect.

<table>
<thead>
<tr>
<th>V</th>
<th>Vy</th>
<th>Vw</th>
<th>Vh</th>
</tr>
</thead>
<tbody>
<tr>
<td>/i/</td>
<td>pit</td>
<td>bee</td>
<td>few</td>
</tr>
<tr>
<td>/e/</td>
<td>pet</td>
<td>bay</td>
<td>house</td>
</tr>
<tr>
<td>/æ/</td>
<td>pat</td>
<td>pass</td>
<td>house</td>
</tr>
<tr>
<td>/u/</td>
<td>just</td>
<td>bee</td>
<td>moon</td>
</tr>
<tr>
<td>/ɑ/</td>
<td>cut</td>
<td>bird</td>
<td>go</td>
</tr>
<tr>
<td>/ɑ/</td>
<td>cot</td>
<td>buy</td>
<td>house</td>
</tr>
<tr>
<td>/u/</td>
<td>put</td>
<td>buoy</td>
<td>do</td>
</tr>
<tr>
<td>/o/</td>
<td>home</td>
<td>boy</td>
<td>go</td>
</tr>
<tr>
<td>/ɔ/</td>
<td>wash</td>
<td>wash</td>
<td>law</td>
</tr>
</tbody>
</table>

3.3 Formosan Vowel Phonemes

Formosan has six vowels represented by symbols /i e æ a o u/. /i e/ are front vowels, /i/ is pronounced with the tongue in high position and /e/ in low position. /æ a/ are central vowels, /æ/ is pronounced with the tongue in middle position and /a/ in low position. /o u/ are back vowels, /u/ is pronounced with the tongue in high position and /o/ in middle position.
3.31 The combination of Formosan vowels with the semivowels 
/w y/ forms complex vowel nuclei and the glides are as obvious as those in English. Formosan has ten diphthongs:

<table>
<thead>
<tr>
<th>Diphthong</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ay/</td>
<td>'i'</td>
<td>(cry)</td>
</tr>
<tr>
<td>/aw/</td>
<td>'aw'</td>
<td>(fold)</td>
</tr>
<tr>
<td>/ya/</td>
<td>'yah'</td>
<td>(wild)</td>
</tr>
<tr>
<td>/yo/</td>
<td>'yoh'</td>
<td>(waist)</td>
</tr>
<tr>
<td>/ie/</td>
<td>'yew'</td>
<td>(sorrow)</td>
</tr>
<tr>
<td>/iaw/</td>
<td>'yaw'</td>
<td>(hungry)</td>
</tr>
<tr>
<td>/wi/</td>
<td>'we'</td>
<td>(fray)</td>
</tr>
<tr>
<td>/we/</td>
<td>'hewe'</td>
<td>(flower)</td>
</tr>
<tr>
<td>/wa/</td>
<td>'gwa'</td>
<td>(I)</td>
</tr>
<tr>
<td>/wai/</td>
<td>'wai'</td>
<td>(crooked)</td>
</tr>
</tbody>
</table>

3.32 Vowels /i o u/ occur with many syllables. These medials are sometimes pronounced as true vowels, sometimes as semi-vowels, and sometimes as true vowels followed by semi-vowels. They are determined by whether or not they are preceded by consonantal initials and whether the syllables in which they occur are long or short as determined by their tones.

3.33 Nearly all of the foregoing syllables which do not end in /p/, /t/, /k/, /m/, /n/, or /ŋ/, occur (as separate syllables) with nasalized vowels in Formosan. Nasalized vowels are not phonemic in English. A nasalized vowel is pronounced while a nasal consonant (like m, n, or ng), closes off the oral passage at some point and relaxes the muscles of the soft palate, allowing the sonant breath stream to pass through the nasal passage. In pronouncing a nasalized vowel, we must allow the sound to
pass through the oral and nasal passages simultaneously.

3.4 Contrasts of English and Formosan Vowel Systems

It is convenient to illustrate the contrasts between the English and Formosan vowel systems in a simplified scheme as follows:

<table>
<thead>
<tr>
<th>English</th>
<th>Formosan</th>
</tr>
</thead>
<tbody>
<tr>
<td>/iy/</td>
<td>/iy/</td>
</tr>
<tr>
<td>'beat'</td>
<td>yee</td>
</tr>
<tr>
<td>/i/</td>
<td>li</td>
</tr>
<tr>
<td>'bit'</td>
<td>'you'</td>
</tr>
<tr>
<td>/ey/</td>
<td>/ə/</td>
</tr>
<tr>
<td>'bait'</td>
<td>'but'</td>
</tr>
<tr>
<td>/e/</td>
<td>/ə/</td>
</tr>
<tr>
<td>'bet'</td>
<td>'bot'</td>
</tr>
<tr>
<td>/æ/</td>
<td>/a/</td>
</tr>
<tr>
<td>'bat'</td>
<td>'bot'</td>
</tr>
<tr>
<td>/u/</td>
<td>/ow/</td>
</tr>
<tr>
<td>'boot'</td>
<td>'boat'</td>
</tr>
<tr>
<td>/ə/</td>
<td>/a/</td>
</tr>
<tr>
<td>'put'</td>
<td>'put'</td>
</tr>
<tr>
<td>/e/</td>
<td>/a/</td>
</tr>
<tr>
<td>'bet'</td>
<td>'bet'</td>
</tr>
<tr>
<td>/ə/</td>
<td>/o/</td>
</tr>
<tr>
<td>'but'</td>
<td>olang</td>
</tr>
<tr>
<td>/i/</td>
<td>/uw/</td>
</tr>
<tr>
<td>'bit'</td>
<td>'have'</td>
</tr>
<tr>
<td>/ə/</td>
<td>/ut/</td>
</tr>
<tr>
<td>'dip'</td>
<td>'crouch'</td>
</tr>
<tr>
<td>/a/</td>
<td>/ah/</td>
</tr>
<tr>
<td>'bet'</td>
<td>'beat'</td>
</tr>
<tr>
<td>/ə/</td>
<td>/tza/</td>
</tr>
<tr>
<td>'bot'</td>
<td>'morning'</td>
</tr>
</tbody>
</table>

3.5 The English Vowels /æ ə ɔ /

As this scheme indicates, English requires three discrimination which the Formosan speaker does not have, /æ ə ɔ/. In general, the main predictable problems of the Formosan learner in controlling the English vowel system are in producing the low front vowel /æ/ (diagraph), the high central vowel /ə/ (barred 'eye'), and the low back vowel /ɔ/ (open 'o').
3.51 The Vowel /æ/

Fo form /æ/ the jaw is lowered quite a bit, until the mouth is almost as wide open as it can be without making a muscular effort. This is the lowest front vowel that can be made; when we move on to /a/, the sides and tip of the tongue will no longwe touch the upper or lower teeth at all. For /æ/, the lightest possible contact is made between sides of tongue and the tips and lower tooth ridge, and between sides of tongue and the tips of the upper bicuspsids or even of the first molar teeth just behind the bicuspsids. /æ/ sound is the vowel of am /æm/, black /blæk/ and cap /kæp/. It is easily confused with /a/, or /e/.

3.511 English /æ/ can be taught by having students pronounce the extreme high front vowel /i/ and, while maintaining the lips open, lower the jaw. It might be well to go over the entire series /i--e--/.

3.512 The Formosan speaker will sometimes substitute /e/ or /a/ for /æ/, as the new phonetic habit has not been built up. It is most easily achieved by allowing the articulators to assume a position between /e/ and /a/, making sure that they result in a lax vowel.

3.513 Drills contrasting /æ a/ and /æ e/ will help establish acceptable articulation for /æ/.

<table>
<thead>
<tr>
<th>/æ/</th>
<th>/a/</th>
<th>/æ/</th>
<th>/e/</th>
</tr>
</thead>
<tbody>
<tr>
<td>baʃ</td>
<td>bot</td>
<td>mass</td>
<td>mess</td>
</tr>
<tr>
<td>pat</td>
<td>pot</td>
<td>pan</td>
<td>pen</td>
</tr>
</tbody>
</table>
The Vowel /\i/  

/\i/ is a high-central vowel, "made with the middle of the tongue high and the lips in neutral position." It may be absent in some idiolects, and in certain regional dialects of American English. We can avoid using it, usually substituting /i/ or /\o/, without changing the meaning of the word spoken. 

The 'barred i' may be heard in the word pretty as in pretty good, but not in pretty as in pretty girl. In southern dialects, sister is commonly pronounced as /sister/. Some dialects make a distinction between just as in a just judge (used as an adjective), and just as in He just came (used as an adverb), in the latter, "The barred i" is considered as the vowel phoneme. 

/\i/ is also heard as the vowel phoneme of can, when it appears in sentences such as "I can do it" (when can is under weak stress).

Since "the barred i" carries a low functional load, and appears only in idiolects and some dialects, it will not be considered as a great problem which a Formosan encounters in learning English.

The Vowel /\o/  

English /\o/ can be taught by moving from the position of /a/. The lips, in the size and shape of the opening between them, have most influence in forming this back vowel. For /a/ this
opening is about an inch and a half across, one inch from top to bottom. The lips are somewhat protruded (pushed forward). In order for the lips to assume this position for /ɔ/, the jaw is raised a little. The tongue remains in approximately the same position for /a/, but is 'bunched' a little more toward the back of the mouth.

3.531 The sound /ɔ/ is low-back, lax and round but the rounding is still weaker. It appears initially as in 'all', medially as in 'taught' or finally as in 'law'.

3.532 The Formosan speaker will tend to substitute the mid back vowel /ɔw/ in the place of low back vowel /ɔ/ in English. This predictable problem may be avoided if he is given drill contrasting /ɔw/ and /ɔ/.

<table>
<thead>
<tr>
<th>/ɔw/</th>
<th>/ɔ/</th>
</tr>
</thead>
<tbody>
<tr>
<td>bowl</td>
<td>ball</td>
</tr>
<tr>
<td>boat</td>
<td>bought</td>
</tr>
<tr>
<td>low</td>
<td>law</td>
</tr>
<tr>
<td>so</td>
<td>saw</td>
</tr>
<tr>
<td>close</td>
<td>claws</td>
</tr>
</tbody>
</table>
4.1 Every language has a distinctive rhythm with which it pronounces syllables. Some languages give each syllable the same importance (like Japanese and Formosan). The English syllables are different from this type of movements. English has a stress timed rhythm. Some syllables are pronounced higher, some lower; some fast, some slow, or some have pauses between the syllables. These features are characteristic of English sentences. For instance, the word *permit* with the stress on the first syllable is a noun meaning a formal written order; whereas *permit* with the stress on the second syllable is a verb meaning allow. Further, in the utterance

The man is a professor.

If we pronounce

/əʊ mænzəprofesər /

With the intonation pattern

/ 2 3 1 /

We indicate that this is a normal statement.

If we pronounce

/əθ mænzəprofesər /

With the intonation pattern

/ 3 2 1 /

With the strongest stress on "the", we indicate "I am saying this man, not the other one."
4.11 From the above, we can perceive that this stress may make a meaning difference between two different words or two different sentences otherwise alike.

4.2 Formosan is a tone language. Each syllable has in addition a tone phoneme to carry out its lexical meaning. This characteristic makes each syllable of equal importance in the stream of speech. It is hard for the Formosan speaker to understand the sentence-stress and rhythm before we make an introduction to the supra-segmental phonemes of English.

4.3 In general, the supra-segmentals in English are as follows.

a. Four stresses relative to each other:
   /\ / primary
   /\ / secondary
   /\ / tertiary
   /\ / weak

b. Four pitch levels relative to each other:
   /1/ low
   /2/ mid
   /3/ high
   /4/ extra high (reserved for 'overloud' situations).

c. Four junctures:
   1. Three terminal junctures which signal the ends of intonation patterns:
      /\ / falling terminal
      /\ / rising terminal
      /\ / sustained terminal
2. One internal open juncture /+/. 

4.31 "Most English speaking people will feel that the difference is stress is more important than the difference in the vowels."

That is to say, stress is phonemic in English and carries linguistic significance in a context. "Stress" refers the degree of prominence a syllable has, marked as /'/, /^/, /\ and /\ from strong to weak.

4.32 The normal pitch of the voice of the speaker is /2/, called mid. Pitch /2/ is relatively common and serves as a standard of comparison for the others. Pitch /1/ is somewhat lower. Pitch /3/ called high, is about as much higher than /2/ as /2/ is above /1/; /4/ called extra high is higher than /3/. /4/ is much less frequent than the other three.

4.33 Some of the breaks in a long utterance will be markedly noticed during the speech. The linguistic term for this phenomena is called juncture. It is the "transition between sounds or between sound and silence in speech." The breaks marking the ends of clauses are clause terminals. They serve as "a means of ending a clause." Such terminals will be found at the end of each clause in an utterance. Clause terminals are of three kinds. /\ occurs at the end of a sentence, it trails away from voice into silence, usually indicates the end of a statement. 

/\ is slight rise in pitch from the last level heard, but does not go all the way up to the next level. It commonly occurs at the end of yes-or-no question. /\ is the sustained terminal, made by prolonging the last syllable of the clause, may be heard
at the end of a long sentence-subject of a clause. / + / indicates the internal open juncture, contrast night rate with nitrate; there is an internal open juncture between night and rate but not between ni and trate.

4.4 Each language has a small number of contrasting differences in intonation. In English, the typical intonation contour begins on pitch level / 2 /, continues on that level until the last lexical stress syllable, when the pitch rises to / 3 / as that syllable receives the primary / 1 / stress, then falls to pitch / 2 /, or sustains on pitch / 3 /. These may be illustrated as

(1) / 2 3 1\rightarrow /
(2) / 2 3 3\rightarrow /
(3) / 2 3 2\rightarrow /

4.5 Robert Lado points out that "sounds have no meaning in themselves; they merely serve to express or identify a unit or pattern which in turn has meaning. As a result, teaching perception precedes teaching the meaning. The student is asked to identify the sound or pattern he hears. This can be best done by comparing one sound or pattern with another."

4.6 In teaching English as a second language, we are concerned to teach the phonemes as they occur in the utterance instead of teaching phonemes in isolation. Hence, teaching consonants and vowels with appropriate intonation and rhythm units is probably more effective than teaching them in detail in isolation.
FOOTNOTES

2 Ibid.
9 Ibid.
10 Wang, op. cit.
11 Ibid, preface.
16 Gleason, op. cit.


21 Fries, op. cit.

22 Lado, op. cit.

23 Hill, op. cit.


25 Wang, op. cit.

26 Ko Chek Hoan and Tân Pang Tin, Introduction to Taiwanese Colloquial (Formosa: Maryknoll Language School, 1960).


30 Wang, p. 23.

31 Wise, p. 124.

32 Engler, p. 8.

33 Francis, p. 83.

34 Wise, p. 135.


37 Chen, p. 2.

38 Wise, p. 138.

39 Ibid.

40 Ibid.

42 Wise, p. 133.

43 Archibald A. Hill, *Introduction to Linguistic Structures: From Sound to Sentence In English* (New York: Harcourt, Brace & Inc.).


46 Saunders, p. 156.

47 Hill, p. 69.


49 Ibid.

50 Prator, p. 84.

51 Ibid.

52 Engler, p. 10.

53 Ibid.

54 Chen, p. 25.

55 Engler, p. 10.

56 Ibid., p. 10-11.

57 Gleason, p. 34.

58 Ko and Tăn, p. 7.

59 Ibid.

60 Engler, p. 12.

61 Prator, p. 51.

62 Ibid, p. 94.


64 Ibid, p. 148.

65 Prator, p. 92.
66 Gleason, p. 40-41.


68 Gleason, p. 46.

69 Ibid.

70 Lado, p. 80.


Engler, Leo F. "Problems in English/German Contrastive Analysis." Unpub. Doctoral Diss. The University of Texas, Austin, Texas, 1962.


TEACHING ENGLISH PHONOLOGY TO SPEAKERS OF
THE FORMOSAN DIALECT OF CHINESE

by

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B. A., Soochow University, Formosa, 1964

AN ABSTRACT OF A MASTER'S REPORT

Submitted in partial fulfillment of the
requirements for the degree

MASTER OF ARTS

Department of Speech

KANSAS STATE UNIVERSITY
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ABSTRACT

Purpose: The purpose of this report is to present the basic problems in teaching English pronunciation to Formosan speakers, by means of a contrastive analysis of the phonological systems of the two languages. It is also an attempt to demonstrate the application of linguistics in the development of more effective and efficient language teaching methods and materials.

Procedure: The first step in the procedure is to contrast the phonemic inventories of the two languages. Second, the contrasts are explored in terms of phonetics and allophonics. Finally, on the basis of contrasts noted and interferences predicted, drills are suggested for meeting the problems that Formosan speakers may be expected to encounter in learning the pronunciation of English.

Summary of Findings: In the contrastive consonant phoneme inventory, the consonants of English and Formosan are found to be slightly different. The differences are accounted for by the fact that English lacks counterparts for Formosan /p' t' k' c' c j/, but does have /d f v z ʌ ə ɔ r/ all lacking counterparts in Formosan. The greatest difficulty for Formosan speakers in learning English is found in the fricative series. As for the vowel phonemes. English makes three discrimination /æ ʌ ɔ/ that the Formosan speaker does not have. English consonant clusters are predictable problems to Formosans, because Formosan allows for no consonant clustering within the structure of its
consonant-vowel arrangement.

A brief discussion of English intonation, based on the idea of the practical function of language, is included. This report also suggests a set of drills for English voiced stop /d/, which is identified as a major problem for Formosan learners.