AN ANALYSIS OF SEGMENTAL FEATURES OF PRONUNCIATION
AMONG FIRST YEAR UNDERGRADUATE STUDENTS OF ENGLISH
AT THE FEDERAL UNIVERSITY OF PARANÁ


CURITIBA
1983
ERRATA

Where one reads:

3.1.1 English and Portuguese vowels
3.1.2 English and Portuguese diphthongs
4.1.1 Classification of errors

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It is read:

3.2 English and Portuguese vowels
3.3 English and Portuguese diphthongs
4.1.1 Quantification of error
4.1.2 Classification of error

p.vi Lists of tables
p.1 on the order hand
p.3 (aspiration of /p,t,k/)

p.10 for language learners
p.17 ... are similar.

p.14 Linguistic
p.18 of another

d.20 NOTES

1 BETASCO, SIMON. ...Cambridge University Press, 1971.
5 GEORGE, H.V. Common errors in language learning. Newbury House, Rowley ...

1 BETASCO, SIMON. ...Cambridge University Press, 1971.

Diagram based on Gimson, op.cit. p.144.

3-Dentals: /θ, ð/
the part of articulation, e.g. caro
We should add: Affricate post-alveolar /tr,dr/
the dentals /θ,ð/

3.2 English and Portuguese vowels

Diagram based on Back and Mattos.

it occurred in the syllable:
are counterparts in Portuguese,
... is the sign of plural of nouns in Portuguese, and it also appears in the conjugation of verbs (2nd. person singular and plural; 1st. person plural).
our students-unable to perceive their difference - explained as "an incomplete...
might be overgeneralization-students know

p.23 The English consonants

p.24 3-Dentals: (θ,ð)
p.25 the part of articulation caro
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p.35 Notes: Diagram based and Back & Mattos.
p.36 it occurred:
p.38 were
p.39 counterparts
p.40 in Portuguese;

p.41 ... is the sign of plural

p.43 our students unable to perceive their difference
p.46 explained as an "an incomplete...
p.46 might be overgeneralization students know

p.49 the table of quantification of vowels nad diphthongs
p.49 the mid-front vowel /æ/
p.55 the mid-front vowels /e,æ/

p.56 the low-central vowel /ɔ:/
p.59 the mid-front vowels /e,æ/

p.61 of unaccented words
p.62 For the other problems
p.66 alunos intermediários (p.53)
p.66 linguística e psicolinguística
p.71 /EiripleInz ...

p.49 the table of quantification of vowels and diphthongs (p.50)
the low-front vowel /æ/
the mid-front vowel /e/ and the low-front vowel /æ/
the mid-central vowel /ɔ:/
the mid-front vowel /e/ and the low-front vowel /æ/;

of unaccented words and syllables.
As for the other problems alunos intermediários (p.53)
lingüística e psicolingüística /EiripleInz ...
PROFESSOR ORIENTADOR

DRA. OTÍLIA ARNS

Titular de Língua e Literatura Inglesa da Universidade Federal do Paraná
CONSULTOR DE PESQUISA

CECILIA INÊS ERTHAL

PhD em Linguística, Área Semântica, pela Universidade de Leeds, Inglaterra.
Professor Adjunto II na Universidade Federal do Paraná
It is a pleasure to acknowledge my gratitude to all those who have contributed to make this work possible. I am also indebted to those students who have kindly recorded the reading-text. I am most grateful to Professor Michael Watkins who kindly helped me to choose the subject of the present research.
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The aim of this research is to make an analysis of the segmental features of pronunciation among first year undergraduate students of English at the Federal University of Paraná. We have chosen this group in order to detect what their main problems are, those involving vowels, consonants (aspiration of the plosives /p.t.k./). This research involves a study of the phonology of the English language compared with the phonology of the Portuguese language. We have chosen a text from "Practice and Progress" by L.C. Alexander, for pre-intermediate students (p.53); which was recorded by the students and by a native speaker at the language laboratory. After the recordings, we made a broad phonetic transcription of it. Then, we compared the native-speaker's transcription with the students' in order to find out the main problematic areas. After quantifying the errors, we started the classification of the errors according to linguistic and psycholinguistic perspectives. We have included in this research not only a review of the literature on the factors which affect pronunciation but also a review on error analysis.

Having found the main areas of error involving the first year undergraduate students of English, it is our aim to suggest a few teaching strategies to cope with the students' problems in order to minimize them and make it possible for this group to leave the University with a better standard of English pronunciation.
1 - INTRODUCTION

1.1 - THEME AND JUSTIFICATION

The importance of pronunciation cannot be overstated. However, the pronunciation of intelligible English is sometimes neglected in the classroom. This negligence might be due to the fact that English is generally taught with the priority of developing reading and writing rather than listening and speaking skills.

It is said that in the foreign language learning process the linguistic elements which are similar to the mother tongue may present relatively little difficulty, on the other hand, the greater the difference among them the greater the difficulty. Regarding the phonological system of Portuguese and English, a different distribution of the sound system within the two languages (e.g. there are restricted allophones in Portuguese which represent phonemes in English), may well prove to be the cause of pronunciation errors.

Among the segmental features of English, those which cause problem for Brazilian students are the ones for which there are no counterparts in Portuguese; among the vowel sounds, it can be cited /i:, I, ae, D, U, 3:, ã, N;/* among the consonants

*The phonetic symbols used above correspond to Gimson's ones as follows: 
/i:/=/i:;/I=/I;/æ=/æ/;/a=/a/;/æ=/æ/;/u=/u/;3=/3;/
/A//=A/ See appendix 1.
Although the stops /p, t, k/ appear in both languages, they are aspirated in English: "when in initial and accented syllables, there is a voiceless interval consisting of strongly expelled breath, between release of the plosive and the onset of a following vowel."¹

A 'deviant' or 'incorrect' pronunciation is a hindrance in communication.

Given that these problems are shown to exist and that a large number of our university students in question will be secondary school teachers of English in the near future, it is fundamental that their pronunciation problems are dealt with from the very beginning of their course. This way it is felt that the improvement of their pronunciation will be ensured.

The present study is intended to be an error analysis of the pronunciation problems among first year undergraduate students of English at the Federal University of Paraná; we have attempted to quantify, classify and analyze the segmental features of pronunciation which are the main source of errors.

1.2 RESEARCH PROBLEM

Several years of experience in teaching E F L (English as a foreign language) have shown us that the acquisition of certain phonological aspects of the English language are difficult for Brazilian students of English. Thus, a decision was taken to find out the main phonemic errors (vowels, consonants (aspiration of /p, t, k/) that first year undergraduate

students of English at the Federal University of Paraná present and the relative frequency of these errors.

1.3 OBJECTIVES

The aims of this research are (i) to find out the main phonemic errors regarding the pronunciation of some vowels, consonants (aspiration of /p,t,k/ among first year undergraduate students of English; (ii) to quantify them; (iii) to discuss these results in linguistic and psycholinguistic perspectives; (iv) to make suggestions for applications in the classroom.

1.4 METHODOLOGY

The first step in this research was to revise the literature concerning not only error analysis but also the phonology of Portuguese and English. The second step was the selection of our informants: first year undergraduate students of English at the Federal University of Paraná were chosen as our non-native informants; and Professor Michael Watkins, M.A. visiting-professor at the University of Paraná, an R.P. speaker, as our native informant.

The third step was to select a reading-text to be read aloud by the informants in the language laboratory. We chose a reading-text that seemed to be the most representative of the variation of English phonemes, but which had a simple vocabulary containing many words with a high frequency of use. The text selected was from a reading lesson in "Practice and Progress" by L.G. Alexander entitled 'Mad or not'?* Then the recordings were individually made. After that, the transcriptions were written out by the author and reviewed by the native speaker.

*See Appendix 2
With this information, it was possible to compare the native speaker's transcription with the students' ones. For this purpose, the native speaker's pronunciation of each word was written down side by side with the students'. Finally, the errors were quantified, the results were discussed in linguistic and psycholinguistic perspectives and suggestions to remedy these errors were made for application in the classroom.
2 - REVIEW OF LITERATURE

In the present chapter we shall be dealing with descriptions and linguists' points of view and attitudes concerning foreign language learners' errors.

2.1 - PRELIMINARIES

As native speakers of Portuguese, we have been exposed to our native language continuously. This exposure to our native language is a very important factor in learning it, which is proved by the fact that babies are unable to speak. However, as a two year old child, they are able to communicate in their mother tongue, whatever language it might be. From that time on, they continue to develop their listening and speaking abilities. Once they learn to speak they will never lose this ability (under normal conditions).

Belasco stated that:

A child learning his native language learns false starts and stops, hemming and hawing, baby-talks, distorted speech, non-linguistic noise—and from this state of chaos characteristic of the so-called primary linguistic data, he develops linguistic competence, i.e. he constructs a grammar of his native language.¹

Listening and repeating are two strategies used by children in order to learn their native language. Children are largely motivated to learn to speak, because they want to communicate, they want to participate in the life of their
family and later on in the life of the community they belong to. From repeating isolated words to increasing the number of words and structures (from simple to complex) as they grow up and their knowledge of the world becomes greater, they learn to speak their mother tongue.

When they go to school, they start developing their reading and writing abilities, and continue to develop these two skills throughout their life time.

We believe that the exposure to the mother tongue plus the motivation to learn to speak in order to be able to communicate are the main reasons for mastering one's native language (for being able to speak and understand it without any formal teaching). This is not the case for reading and writing, two skills which are usually learned and are developed at school.

Despite mastering one's native language, one problem still remains to be faced by all those who understand, speak, read or write any language: the problem of errors.

Native speakers are liable to make mistakes, not only mistakes involving the phonological system but also the syntactic and semantic ones. Corder says that: "All learners make mistakes, this is not confined to language learners."²

Foreign language learners are not exception to this rule.

2.1.1 The concepts of competence and performance

It will be seen in the next section that attempts to define errors are based on two concepts; "Competence and Performance". These two terms were coined by Chomsky, who declares:

A distinction must be made between what the speaker of a language knows implicitly (what
we may call his competence) and what he does (his performance).

A grammar is an account of competence. It describes and attempts to account for the ability of a speaker to understand an arbitrary sentence on a given occasion.

...The competence of the speaker-hearer can, ideally, be expressed as a system of rules that relate signals to semantic interpretation of these signals...(p.9).³

According to Chomsky, native speakers are endowed with a natural knowledge of their language which allows them to produce and understand sentences including those they have never spoken or heard before.

Corder agrees that competence in the sense described by Chomsky is as essential for a foreign language learner as it is for a native speaker.

Corder states that:

The learner must, it is true, develop the ability to produce and understand grammatical utterances, he must be able to distinguish grammatical from ungrammatical sequences but he must also know when to select a particular sequence, the one which is appropriate to the context, both linguistic and situational... he must not only learn to talk grammatically in the target language, he must also talk coherently and to the point.⁴

In addition, one might say that Corder's concept explains the necessity of the learner to produce and distinguish not only the main phonological features of the target language but also its morphology, syntax and semantics.

2.1.2 Error: Definitions

According to H.V. George's point of view, an error is "an unwanted form, specifically, a form which a particular course designer or teacher does not want".⁵ This point of view
is satisfactory up to a certain point, that is, a teacher or a course designer have to judge errors based on something else than their "wants". It is possible that a teacher does not want a form which might be judged from another point of view correct or acceptable.

S.P. Corder, in 'The Significance of Learner's Errors', makes a distinction between systematic and non-systematic errors, he states that: "The errors of Performance will characteristically be unsystematic and the errors of Competence, systematic".

Corder calls errors of performance mistakes and explains that "native speakers very frequently produce ill-formed utterances. These ill-formed utterances are caused by 'lapses' or 'slips of the tongue' due to conditions of stress, indecision and fatigue which might affect the native speakers' performance".

If native speakers are liable to make mistakes, what about non-native speakers? Corder says that second language learners, under the same conditions mentioned above, may also make mistakes.

The product of imperfect competence is labelled error "the systematic errors of the learner from which we are able to reconstruct his knowledge of the language to date, i.e. his transitional competence".

Corder explains that these errors are due to an imperfect competence in the target language; he refers to them as "breaches of the code, i.e. a use of wrong rules or a misuse of right rules".

2.1.3 Types of errors

The literature involving types of errors has shown that there is not a special classification for phonological errors (errors involving pronunciation), therefore an attempt was made
to focus only on those types which might involve pronunciation errors. They are presented according to the following authors:

S.Pit Corder

Besides the distinction between errors and mistakes already mentioned, there are other types of errors classified by Corder as:

1 - **Receptive and expressive errors:**

The errors we most readily notice are those in expressive and receptive activity, the utterance of learners in meaningful discourse ... the study of expressive performance offers the only direct source of information about the learner's transitional competence".10

In fact, when learning a language, the activity which involves production (e.g. speech) is much more difficult than the one which involves receptive ability (e.g. listening), that is, one is capable of receiving a message and decoding it more easily than one is able to express one's thoughts and communicate them in comprehensible utterances in a foreign language. Production is dependent on Perception.

M.K. Burt

Burt classifies errors into two major types: Global errors and Local errors. She declares that:

Global errors, affect overall sentence organization, cause the listener or reader to misinterpret the speaker or writer's message.

Local errors are limited to a single part of the sentence—rarely affect the communication of a verbal message.11

It is believed that the mispronunciation of a vowel or a consonant does not affect the comprehension of a message, however it seems that a 'wrong stress' leads to misinterpreta-
tion of the message, even without acting on the "overall sentence organization". Therefore "Global errors", in the author's opinion, might be used as a label for the classification of phonological errors.

F.A. Johansson

Johansson divides errors into three categories:

1 - Individual errors: those referred to elsewhere as mistakes, nonce errors or erratic cases. These errors, which occur both among native speakers and second language learners may be the result of inattention or other distractions during the test situation.

2 - Language specific errors: those which result from contact between two structural systems. It is these errors which are generally referred to as interference and which are studied through contrastive analysis.

3 - General specific errors: those common to all groups regardless of differences in source language structures, which might be caused by common psychological processes, common learning strategies, inherent "universal" difficulties or a common sociocultural situation.

Johansson's classification, undoubtedly, might be used as a good source for classifying phonological errors, for it is known that some individuals may have problems with some sounds while others have no problems at all. In addition, there are some sounds which seem to be difficult for all speakers, which is the case of /θ, ð/ in English, two sounds that are difficult not only for language learners but also for native speakers.
Robert Lado

Lado's classification gives an excellent explanation for phonological errors; he states that:

We have ample evidence that when learning a foreign language we tend to transfer our entire native language in the process. We tend to transfer to that language our phonemes and their variants, our stress and rhythm patterns, our transitions, our intonation patterns and their interaction with other phonemes.\textsuperscript{13}

Burt seems to corroborate Lado's assertion, when she declares that "interference from a student's first language is the major predictor of phonological errors".\textsuperscript{14}

Lado's claim is a very strong one, because he has also declared that when one is learning a language one will be able to recognize and produce the sounds one already knows, however, the different sounds will be difficult to learn. Therefore a lot of practice in recognizing and producing the sound will be required.

Portuguese and English have a different phonological system (due to a different distribution of sounds), but the graphic symbols (the letters of the alphabet) used in English and Portuguese are similar. Consequently, Portuguese speakers who can rely on their native orthographic system when pronouncing a word, will face difficulties when facing an unknown word in English, since there is little correspondence between the English orthographic system and its phonological system. Thus, if students are unaware of the phonological features of the English language, that is, if they are not taught that "the same symbol or letter stands for a number of distinctly different sounds as, for example, the letter \textit{i} in \textit{bite}, \textit{bit}, \textit{machine} or the sequence \textit{ea} in \textit{beat}, \textit{breath}, \textit{heart}, \underline{earth}";\textsuperscript{15} they might be
induced to transfer their own phonological system what will cause a lot of communication problems not only in reference to vowels and consonants, but also to other features as well as stress, rhythm and intonation patterns.

Regarding stress, the same problem occurs for Portuguese is "a syllable timed-language", that is, "the syllables tend to be of much the same length and to follow each other at regular intervals of time"; while English is "a stress timed-language, the syllables vary in length but stressed syllables tend to occur at regular intervals". Thus, students will transfer their stress patterns from Portuguese to English, since there are no accent marks visible in written English which might help them to use the correct stress when facing an unknown word.

Students ought to be taught that not all words are stressed in English, and that the stressed words are generally nouns, main verbs, adjectives and adverbs.

Although 'interference' or 'transfer' might clearly explain why foreign learners have problems when facing not only the phonemes and allophones (segmental features) but also the supra segmental features, i.e. stress, rhythm and intonation patterns of the target language, the data show that there are other types of errors which do not so heavily rely on language transfer. This leads us to another classification, which is presented next under the name of its author:

**Jack Richards**

Richards divides errors into two groups:

1. **Intralingual errors**: are those errors which reflect the general characteristics of rule learning such as faulty generalization, incomplete application of rules and failure to learn conditions under which
rules apply.

1.1 - **Overgeneralization**, can be explained by "the creation of one deviant structure in place of two regular structures".

1.2 - **Ignorance of rule restrictions**, that is, the application of rules to contexts where they do not apply. Some rule restriction errors may be accounted for in terms of analogy; other instances may result from the rote learning-rules.

1.3 - **Incomplete application of rules**, that is, the occurrence of structures whose deviancy represents the degree of development of the rules required to produce acceptable utterances.

2 - **Developmental errors**: are those which illustrate the learner attempting to build up hypothesis about the English language from his limited experience of it in the classroom or text-book.

2.1 - **False concepts hypothesized**, that is, errors which derive from faulty comprehension of distinctions in the target language. "These are sometimes due to poor gradation of teaching items".¹⁷

Two other types of error which may be used for classifying phonological errors and are worth mentioning are:

1 - **Marckwardt's Hypercorrection**, which he defines as "the bilingual's excessive caution against differentiating a phonemic distinction which his language does not possess".¹⁸
2 - Aaron's Inferencing "in acquiring a foreign language that is linguistically related to a language one already knows there may be frequent cognates, derivations, and loan words whose appearance (visual or auditory), is suggestive of labels one already knows". 19

While attempting to classify the learners' errors the basic classification to be followed will be the one used by Richards on page 12/13. However, his classification will not be the only source.

The terminology used for the classification of vowels and consonants, and for the explanation of the patterns of simplification which occur in connected speech, is the one found in Gimson(62).

Gimson defines a phoneme as "the smallest contrastive linguistic unit which may bring about a change of meaning". 20

The phonemicist identifies phonemes by "phonetic features, that is, each consonant and vowel is characterized by a distinguishing set of features, which have no theoretical status within the theory but which enable the linguistic to refer to them". 21

For the classification of vowels and consonants in Portuguese we have used Back and Mattos. 22

Diphthongs were classified according to Luft. 23

Whenever needed the new terms will be explained according to their order of presentation.
2.1.4 Accuracy of Pronunciation

Students and some non-native English teachers carry pronunciation problems throughout their lives without being conscious of them. Students are taught vocabulary, morphology and syntax systematically; but when it comes to Phonology its systematic study is postponed to higher levels of teaching. Therefore students and teachers-to-be leave the University with only a slight notion of the phonological features of the target language, without giving due attention to pronunciation, which has proved to be one of the main points in learning a foreign language.

Stevick asks the following question: "What does accuracy of pronunciation mean to non-native speakers including students of a language?" ²⁶

He says that pronunciation might be examined according to two viewpoints: the analytical (or digital) and the holistic views.

The analytical point of view of pronunciation considers it as the "control of discrete features that we have called phonemic distinctions... to aim at pronunciation that is 'at least' phonemically accurate even though the allophones may be noticeably foreign". ²⁵

The second point of view, "the holistic view of pronunciation" considers it as a continuum: ²⁶

...a non-native speaker may produce his utterance, his intonation and rhythm, his vowels and consonants in ways which are more or less parallel to the patterns that are shared among native speakers. This is a matter of degree, with no sharp dividing lines between correct and incorrect.
The second point of view is much more demanding than the first, but with no doubt it gives a better insight into the phonological system of the target language.

Nowadays students in Brazil are much more exposed to English than before; they listen to songs at any time on the radio, on record-players, on TV (video and live programmes), films, news; but unfortunately, the majority of our students are unable to understand the messages and to use them as input for learning the language; this happens because in general, they do not have enough information about the phonological and phonetic features of the target language.

Learning a language does not only imply knowing the phonemes of the language; but it mainly means knowing that phonemes combine to form words, that words have "different accentual patterns", which "establish the contrastive relationship of its parts".²⁷

Above all, it implies the knowledge that words in "connected speech" present some characteristics of pronunciation different from the situation in which they occur alone.

Guiora (1972) declares that:

...pronunciation, unlike the lexical and grammatical aspects of language learning, seems to have a developmental history all of its own. While young children learn language with relative ease, around puberty their pronunciation skills seem to be dramatically reduced, although general language learning capability, lexical and grammatical skills are not lost. Beyond this period it is almost impossible to acquire native-like pronunciation in a second language.²⁸
2.1.5 - Factors which affect pronunciation

It was mentioned in the previous section that age is one factor that might affect pronunciation accuracy. Other factors which might also be referred to as involving pronunciation accuracy are "method of instruction, aptitude and certain affective variables such as attitude, motivation, and empathy".\(^{29}\)

Many methods have been created and have been tried out all over the world, as they differ in their aims, it is said that there will be as many methods as there are students and teachers.

Regarding attitude, Schumann (1975) declares that:

\[
\text{the learner's positive or negative attitude towards the speakers of the target language can either enhance or inhibit language acquisition. This is also true of the learner's evaluation of his teacher.}^{30}\]

When there is a positive attitude towards the teacher and the target language, the atmosphere in the classroom is one of the best and learning and teaching become an agreeable task.

Stevick points out two types of motivation:

\begin{itemize}
  \item a) instrumental - the desire to learn the language for an academic degree, to read current articles in a professional field;
  \item b) integrative - this includes general interest in language study, attitude toward the teacher, toward the native culture and the foreign culture, and ability to endure being in a position somewhere between them 'anomie', and the degree to which each student strives for accomplishing the goals that are set before him.\(^{31}\)
\end{itemize}

The second type assures the learner a better achievement in the target language, but at present, the first type is the main motivation for learning English in Brazil.

Empathy was defined by Guiora (1972) and his associates *Language for Specific Purpose*
at the University of Michigan as:

...a process of comprehending in which a temporary fusion of self object boundaries, as in the earliest pattern of object relation, permits an immediate emotional apprehension of the affective experience of another, this sensing being used by the cognitive function to gain understanding of the other.  

Empathy seems to be very important among the affective factors involving language learning, because it involves the capacity of "sensing" which refers not only to the five senses—"sight, hearing, smell, taste and touch"—but also the "appreciation and understanding of the value or worth of the other be it a person, a culture or a language".  

Guiora feels that people:

...who are more sensitive in their interactions with others, who are more receptive to subtle cues of behavior and feelings, would have an enhanced capacity to discern those cues and nuances which, when incorporated in speaking produce authentic native-like pronunciation.  

Guiora formulated a theoretical model in which he appears to have considered empathetic capacity with the concept of permeability of ego boundaries. He points out that:

...the notion of boundaries is important, in the formative stages of development there is a state of flux: boundaries are more flexible, more easily permeated. Once ego development is concluded this flexibility is sharply restricted and there will be marked individual differences later in the range of flexibility, or plasticity of ego boundaries.  

This theoretical model seems to be very important since it will have implications in what it refers to adult and children language learning. It is said that children have "this plasticity of ego boundaries", that is, their knowledge
of their native-language is still expanding and they easily acquire a second system; children are eager to learn and they easily engage in the learning process. With adults, the situation is a little bit different: adults have already acquired their native language system and are sometimes blocked by their own language system when learning a second or a foreign language. It seems that having acquired their whole native language system, adults resist more than children to accept new rules not only involving the phonological system but also the syntactical and semantic ones.

Two other factors which are worth mentioning as factors influencing pronunciation are "aptitude", i.e., natural ability to acquire knowledge or "skill", and "intelligence" the power of seeing, learning, understanding and knowing".36

Although they have much in common according to their definition, they have not proved to be essential in helping to acquire a good pronunciation.

Gardner (1974, Reading № 1.4) states:

In addition, intelligence and aptitude appear to have greatest influence on language learning through formal instruction rather than through direct exposure to the target language environment. Finally, whereas intelligence and aptitude are fixed characteristics, it is possible that attitude and motivation can be ameliorated so as to enhance second language learning.37

Taking into consideration all the factors already mentioned, it can be stated that the moment one of these factors—method of instruction, aptitude, attitude, motivation and empathy— is neglected or is not paid due attention to by the students and the teacher, one will be faced with serious problems such as the so-called "foreign language errors".
NOTES


8 CORDER, S.P. The significance of learner's errors, op.cit. p.25.

9 CORDER, S.P. Error analysis, op.cit. p.123.


14 BURT, Error... op. cit.


25 Ibid.

26 Ibid.

27 GIMSON, A.C. An introduction..., op. cit. p.227-8


30 Ibid.

31 STEVICK, Memory, meaning and method, op. cit. p.

32 GUIORA, op. cit. p.


34 GUIORA, Language... op. cit. p. 142.

35 Ibid.

36 HORNBY, the advanced... op. cit.

In the previous chapter error concept and classification were presented. In the present chapter, before analyzing and interpreting the data; a brief contrastive study between the sounds of English and Portuguese will be made.

Lado and his followers believed that if one compared the phonological structure of two languages, this comparison would lead to the main difficulties students would have when dealing with the two languages. Aspects which were similar in both languages would cause no difficulties, while different aspects would cause problems. And also, as Stockwell, Bowen and Martin state: "It is important to distinguish between what may be difficult to explain... and what is difficult for the student to internalize - the two may, or may not, be the same".

They have established a "hierarchy of difficulty", defined as "a set of predictions which must be tested against observation of the problems students do in fact have".

Although the aim of this research is not to do contrastive analysis, it seems interesting to include a comparison of the English and Portuguese phonological systems; since "error analysis is used as a means of verifying or falsifying some of the findings of contrastive analysis".
3.1 ENGLISH AND PORTUGUESE CONSONANTS

According to the literature referring to Phonetics and Phonology (Gimson, 1962; Abercrombie, 1956; Daniel Jones, 1956; Back & Mattos, 1972, etc.) consonants can be classified according to the place of articulation, to the manner of articulation and according to the action of the vocal cords.

Therefore a chart of the English consonants may be presented, as follows (where the voiceless sounds are underlined):

**CHART 1 - THE ENGLISH CONSONANTS**

<table>
<thead>
<tr>
<th>Place of articulation</th>
<th>bilab.</th>
<th>labio-dent.</th>
<th>dental</th>
<th>Alv.</th>
<th>post-alv.</th>
<th>palato-alv.</th>
<th>pal.</th>
<th>velar</th>
<th>glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plosive</td>
<td>/b</td>
<td></td>
<td>/d</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricate</td>
<td></td>
<td></td>
<td>/dr</td>
<td></td>
<td></td>
<td>/dz</td>
<td></td>
<td></td>
<td>/g</td>
</tr>
<tr>
<td>Fricative</td>
<td>/v</td>
<td>/ʒ</td>
<td>/z</td>
<td>/ɾ</td>
<td>/tʃ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>/ɾ</td>
</tr>
<tr>
<td>Semi-vowel</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>r</td>
<td></td>
<td></td>
<td>j</td>
</tr>
</tbody>
</table>

Likewise, the Portuguese consonants can be presented as follows:

**CHART 2 - THE PORTUGUESE CONSONANTS**

<table>
<thead>
<tr>
<th>Place of articulation</th>
<th>bilab.</th>
<th>labio-dent.</th>
<th>dental</th>
<th>Alv.</th>
<th>Medial-palat.</th>
<th>velar</th>
<th>radical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oclusives (Oclusivos)</td>
<td>/b</td>
<td></td>
<td>/d</td>
<td></td>
<td>/k</td>
<td>/g</td>
<td></td>
</tr>
<tr>
<td>Fricatives (Constritivas)</td>
<td></td>
<td></td>
<td>/v</td>
<td>/ʒ</td>
<td>/x</td>
<td></td>
<td>/ɾ</td>
</tr>
<tr>
<td>nasal</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lateral</td>
<td></td>
<td></td>
<td>l</td>
<td></td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flap(colente)</td>
<td></td>
<td></td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>semi-vowels</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
<td>y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Abbreviations: bilab=bilabial; labio-dent=labio-dental; alv.=alveolar; post-alv.=post-alveolar; palato-alv.=palato-alveolar; pal=palatal.
If one looks at charts 1 and 2, one realizes that according to the place of articulation we have:

1 - Bilabials /p, b, m, w/ in English and Portuguese.
3 - Dentals: /θ, ħ/ in English; while in Portuguese they are /t, d/.
4 - Alveolars: /t, d, n, s, z, l/ in English; for the alveolar sounds in Portuguese we have /n, z, s, l, r/.
5 - The post-alveolar /tr, dr, r/ in English will have no counterpart in Portuguese; however, we have the dental cluster /tr, dr/.
6 - The palato-alveolars /t∫, δ̆, j, ʃ, ʒ/ in English; while in Portuguese we have the medial-palatals: /x, j, ň, l, y/ in words like: xícara, jipe, manhã, malha, ioiô.
7 - Palatals: /j/ in English will have no similar sound at the same place of articulation; we have a medial palatal /y/, though.
8 - Velars: /k, g, ŋ/ in English; for the velar sounds in Portuguese, we have /k, g/; for the velar /ŋ/ there is not a similar sound in Portuguese.
9 - Glottals: /h, ?, / in English; there is "the glottal /?/ in Portuguese which substitutes the sound /p/ in taboo-words like ?orra and ?uta, in order to atenuate the violence of the expression".⁶
10 - radical (or uvular) /R/ in Portuguese (rato/Ratw/).
If one examines the manner of articulation, one realizes that we have:

1 - Plosives: /p,b,t,d,k,g, ?/ in English, and also in Portuguese (occlusivas) /p,b,t,d,k,g/.

2 - Fricatives: /f,v,θ,s,z,f,ʒ,h/ in English; in Portuguese (constritivas) /f,v,s,z,x,j,R/.

3 - Affricates: /tr,dr,tʃ,ʤ/ in English.

4 - Nasals: /m,n,ɲ/ in English; and Portuguese /m,n,ʁ/.

5 - Laterals: /l/ in English; and in Portuguese /l,ʎ/. 

6 - Semi-vowels: /w,r,j/ in English; and in Portuguese /w,ʁ/.

7 - Flap (colidente) /ɾ/ in Portuguese (a sound in which the active organ gives a slight flap touching the part of articulation caro). There is also in Portuguese a voiceless alveolar trill /ɾ/; carro, and a voiceless uvular trill in /ʁ/ in rato.

These comparisons would lead us to a third chart, presenting a more general classification, where the underlined symbols mean that the sounds they represent are common to both languages:

**CHART 3 - ENGLISH AND PORTUGUESE CONSONANTS**

<table>
<thead>
<tr>
<th>Place of articulation</th>
<th>bilab</th>
<th>labio-dent</th>
<th>dental</th>
<th>alveol.</th>
<th>palat</th>
<th>velar</th>
<th>glottal</th>
<th>uvular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plosive/stop</td>
<td>/p,b/</td>
<td>t/d</td>
<td>t/d</td>
<td>k/g</td>
<td>?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td>/f,v/</td>
<td>e,ʒ</td>
<td>s/z</td>
<td>h</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricate</td>
<td></td>
<td>tʃ/ʤ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal</td>
<td>/m/</td>
<td>n</td>
<td>ʁ̃</td>
<td>η</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td></td>
<td>l</td>
<td>ʎ̃</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-vowel</td>
<td>/w/</td>
<td>r</td>
<td>j</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flap</td>
<td></td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After examining the third diagram one concludes that the dentals (θ, ð), the alveolars /t,d,r/ the palato-alveolars (palatals) /tʃ, dʒ/, the glottal /h/, the palatal /j/ and the bilabial /w/ will be problematic for Brazilian students, because according to Lado "Portuguese speakers will have difficulty in pronouncing and hearing these phonemes".  

3.1.1 English and Portuguese vowels

In English, vowels can be classified according to "a combination of the classificatory chart with the descriptive figure, naming those vowels in which the main raising is made by the front of the tongue towards the hard palate front vowels, those in which the back of the tongue is raised towards the soft palate back vowels, and those in which the centre is raised towards the juncture of the hard and soft palate central vowels". And as to the classification regarding "degree of raising - it is customary to refer to four regions corresponding to the four cardinal degrees of raising; thus, the /i-u/ level is known as the close regions; the /e-o/ level as the half-close; the /E-O/ level as the half-open; and the /a-D/ as the open", as shows the following diagram for English vowels:
In Portuguese, vowels can be classified according to the manner of articulation by: the opening of the mouth, the position of the tongue, and the position of the lips.¹⁰

According to the manner of articulation one has to call attention to the nasal vowels which "are the ones in the pronunciation of which the vocal cords vibrate, and at the same time the soft palate lowers, allowing the air-stream to pass up through the nasal cavity".¹¹

According to a lesser or greater distance between the palate and the tongue (height of the tongue) vowels can be high, mid and low, which can further be divided into high close, mid-close, mid-open, low-close and low-open. Examples:

- high-close = vi, mula
- high-open = vil, multa
- mid-close = mês, doce
- mid-open = lã, vã
- low-close = peça, pesca
- low-open = faz, vai

For the Portuguese vowels we might have the following diagram:*
They can be classified according to the position of the tongue (part of the tongue raised) "as front vowels (the letters i and e in fila, telha and pede), central vowel (the letter a in faz); back vowels (the letters u and o in uva and bola)".\(^\text{12}\)

Vowels can be classified according to the position of the lips, they can be either "rounded-the there is a protruding of the lips toward the front, in the pronunciation of the vowels /u, o, ù, ô/, (uva, toda, um, som, sons); or unrounded-the lips are spread or neutral in the pronunciation of the vowels /I, e, a, Í, ê, ã/ (vi, vê, é, vá, vim, tempo, tente, lâ).\(^\text{13}\)

<table>
<thead>
<tr>
<th>CHART 3 - ENGLISH VOWELS</th>
<th>CHART 4 - PORTUGUESE VOWELS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Front.</strong></td>
<td><strong>Front.</strong></td>
</tr>
<tr>
<td>unrounded</td>
<td>unrounded</td>
</tr>
<tr>
<td>unrounded</td>
<td>unrounded</td>
</tr>
<tr>
<td>rounded</td>
<td>rounded</td>
</tr>
<tr>
<td><strong>Central</strong></td>
<td><strong>Central</strong></td>
</tr>
<tr>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>/i: (1)</td>
<td>/i/</td>
</tr>
<tr>
<td>/I (2)</td>
<td>unrounded</td>
</tr>
<tr>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>/ã (4)</td>
<td>/ã</td>
</tr>
<tr>
<td>/A (10)</td>
<td>/ã</td>
</tr>
<tr>
<td>/ã (5)</td>
<td>/ã</td>
</tr>
<tr>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>/e (12)</td>
<td>/e/</td>
</tr>
<tr>
<td>/O (7)</td>
<td>/ô</td>
</tr>
<tr>
<td>/e (11)</td>
<td>/e/</td>
</tr>
<tr>
<td>/ã (9)</td>
<td>/ô</td>
</tr>
<tr>
<td>/U (8)</td>
<td>/ô</td>
</tr>
<tr>
<td>/ã (6)</td>
<td>/ô</td>
</tr>
</tbody>
</table>

A brief glance at charts 3 and 4 reveals that there are 12 vowels in English of which 7 are short /I, e, ae, ì, U, A/ and 5 long /i:, u:, a:, O:, 3:/; while in Portuguese there are also 12 vowels, 7 being orals /a, e, i, o, u, ã, E/ and 5 nasals /ã, ê, Í, ô, û/.

Comparing the two charts one can state that there are in English four unrounded front vowels:* /i:, I/; at mid-tongue position /œ/ and at mid-low to low tongue position /æ/; while in Portuguese, there are 5 unrounded front vowels, three are

*at high tongue position.
orals and two nasals; at high-tongue position /i, I/, mid-tongue position /e, ē/, and low-tongue position /E/.\(^{14}\)

In English there are three unrounded central vowels at mid-tongue position /3:, ɪ/ and one at low-tongue position /ʌ/; while in Portuguese there are two unrounded central vowels one nasal at mid-tongue position /ã/ and the other oral at low-tongue position /a/.

English has also 5 rounded back vowels, two at high-tongue position /u:, ʊ/, one at mid-tongue position /ɐ/, and two at low-tongue position /a:, ɒ/; while in Portuguese, there are 4 rounded back vowels (being two nasals); at high-tongue position we have two /u, ū/ two others at mid-tongue position /o, ō/ and one at low-tongue position /0/.

As in English there are no nasals, one realizes that there are only seven vowels in Portuguese which might be counterpart to the 12 English vowels. Consequently, one can assume that vowels might be a problem for Brazilian students, as Portuguese does not possess the variety that the English language possesses. Although one might say that there is a similarity among the /i, e; 0, u/ phonemes because the four appear in the charts, even in this case one cannot say that they are equal. And this can be explained by the degree of tenseness and laxity of the vowels in English. According to this one can say that /i: e, æ, u:/ are tense vowels in English. Another reason for their difference is due to "the traditional relationship between short and long vowels in English, as illustrated by the following words."\(^{15}\)

bid and bead /I, i:/

good and food /U, u:/

cad and card /æ, a:/
 cod and cord /D, 0:/
forward and word / within, 3:/

For the vowels /I, ae, D, U, 3:, ã, ã/ one can state that there is not a single similar sound in Portuguese. In what refers to nasal vowels there are no nasal vowels in English, therefore, Brazilian students will tend to nasalize the en, on, un, ing, distribution in English.

At this stage it is felt worthwhile to focus the reader's attention on an alternative means of illustrating the differences as shown on charts 3 and 4 in a more detailed classificatory way, as follows:

**English vowels**

1 - /i:/ high front vowel, spread lips, the tongue is tense, in words like: see, complete, leaf, piece, key, machine, etc.

2 - /I/ high front vowel, lips are loosely spread, the tongue is lax /compared to the tension for /i:/, in words like: sit, city, pretty, ladies, village, etc.

3 - /e/ mid front vowel, lips are loosely spread and are slightly wider apart than for /I/; the tongue may have more tension than in the case of /I/, in

**Portuguese vowels**

1 - /i/ high front vowel, spread lips (unrounded) the tongue is not so tense as it is for the English vowel /i:/; in words like: vi, lì, fila, vila, etc.

2 - /Ir/ high front nasal vowel, spread lips, in words like: vim, vinte, timbre, vinha, etc.

3 - /e/ mid front vowel, spread lips, in words like: vez, mes, ver, chego, etc.

*Although they have been placed side by side, it does not mean that they are counterparts.*
words like: set, bed, went, dead, many, etc.

4 - /æ/ low front vowel, lips are neutrally open, the tongue itself having rather more tension than is the case for /e/; in words like: plaid, bad, hand, lamp, marry, etc.

5 - /a:/ low back vowel, considerable separation of the jaws (mouth open), lips neutrally open; in words like: hard, pass, bath, father, camouflage, hearth, clerk, calm, aunt, etc.

6 - /o/ mid back vowel, rounded lips, in words like: todo, povo, pode, poder, etc.

7 - /õ/ mid back nasal vowel, rounded lips; in words like: bom, bom, tombo, etc.

8 - /u/ high back vowel, the tongue is lax, lips are closely but loosely rounded; in words like: put, full, sugar, cushion, wolf, woman, bosom, good, wood, could, should, etc.

9 - /u:/ high back vowel, the tongue is released from the highest position and is somewhat advanced from true back, the lips tend to
be closely rounded; in words like: *food*, *soon*, *do*, *who*,
group, *soup*, *rude*, *June*, *Susan*,
*chew*, *blue*, *juice*, *shoe*, etc.

10 - */ʌ/* low central vowel, considerable separation of the jaws, lips neutrally open; in words like: *sun*, *cut*, *son*, *come*, *country*,
*blood*, *does*, etc.

11 - */ə/* low central vowel, slight separation of the jaws, lips neutrally open in words like: *casa*, *falava*, *lã*, etc.

12 - */i/* mid central vowel with neutral lip position; in words like:
*possible*, *gentlemen*, *woman*, *oblige*,
*suppose*, *particularly*, *mother*,
*doctor*, *famous*, *figure*, *about*,
*affect*, etc.

3.1.2 English and Portuguese Diphthongs

According to Gimson: "The sequences of vocalic elements under the term "diphthong" are those which form a glide within one syllable".¹⁸

Diphthongs begin with one vowel sound and move toward another vowel sound; they are always part of the same syllable. It might be said that in English, it is the occurrence of two
vowels in the same syllable; while in Portuguese, it is the occurrence of a vowel plus a semivowel in the same syllable, or vice-versa.

Diphthongs can be either rising—with heavier stress on the second element; or falling—with heavier stress on the first element, e.g.:

### Falling diphthongs

<table>
<thead>
<tr>
<th>English</th>
<th>Portuguese: Orals</th>
<th>Portuguese: Nasals</th>
</tr>
</thead>
<tbody>
<tr>
<td>/aɪ/-final,...</td>
<td>/aɪ/-ai, pai</td>
<td>/ãĩ/-mãe, caĩbra</td>
</tr>
<tr>
<td>/eɪ/-day,...</td>
<td>/eɪ/-idéia, réis</td>
<td>/ẽĩ/-bem, porém</td>
</tr>
<tr>
<td>/eɪ/-ceia, seis</td>
<td>/ey/-ceia, seis</td>
<td></td>
</tr>
<tr>
<td>/ɔɪ/-oil,...</td>
<td>/ɔɪ/-dói, moe</td>
<td>/oĩ/-mão, catam, cantão, cantam</td>
</tr>
<tr>
<td>/aʊ/-cow,...</td>
<td>/aʊ/-mau, ao, cacos</td>
<td>/ãũ/-mão, catam, cantão, cantam</td>
</tr>
<tr>
<td>/ɛɪ/-there,...</td>
<td>/ɛɪ/-céu, chapéu</td>
<td>/ɛw/-meu, europeu</td>
</tr>
<tr>
<td>/ɛɪ/-hear,...</td>
<td>/ɛw/-viu, saiu</td>
<td></td>
</tr>
<tr>
<td>/oʊ/-so,...</td>
<td>/oʊ/-dou, vou</td>
<td></td>
</tr>
<tr>
<td>/uɪ/-fluent...</td>
<td>/uɪ/-muito....</td>
<td></td>
</tr>
</tbody>
</table>

### Rising diphthongs

<table>
<thead>
<tr>
<th>Portuguese Orals:</th>
<th>Portuguese Nasals:</th>
</tr>
</thead>
<tbody>
<tr>
<td>/yá/-iaiá, hiato....</td>
<td>/ya/-ianqué, liame....</td>
</tr>
<tr>
<td>/yẽ/-quieto, viela...</td>
<td>/yẽ/-cliente, ciência</td>
</tr>
<tr>
<td>/ye/-iemanjá, Oviedo</td>
<td>/yẽ/-cliente, ciência</td>
</tr>
<tr>
<td>/yi/-série, calvície</td>
<td>/yĩ/-série, calvície</td>
</tr>
<tr>
<td>/yɔ/-ioga, iota</td>
<td>/yɔ/-iota, iota</td>
</tr>
<tr>
<td>/yo/-yogurte, iodo</td>
<td>/yo/-yogurte, iodo</td>
</tr>
</tbody>
</table>
After examining the two lists one can state that there are fewer diphthongs in English than in Portuguese. Nevertheless the difficulties will be the same as we have met with the vowels because of the phonemic distribution.*

*If semi-vowels were accepted in the formation of diphthongs in English, /je/ in yesterday and /ju:/ in university might be included among the diphthongs, thus increasing the number of diphthongs in English.


3*ibid.*

5NICKEL, GERHARD. Aspects of Error Evaluation and grading

5Diagram based and Back & Mattos. *op. cit.* p.72

6BACK, EURICO & MATTOS, GERALDO L. *op.cit.* p. 67


8GIMSON, A.C. *op. cit.* p.41.

8*ibid.* p. 41.

10BACK, EURICO & MATTOS, GERALDO, *op. cit.* 62.

11*ibid.*

12*ibid.*, p.68


15GIMSON, A.C. *op.cit.* p.90.

16*ibid.* p.94-121.


18GIMSON, A.C. *op. cit.* p.121.


4 THE DATA

4.1 PRESENTATION OF THE DATA

After writing out the phonetic transcriptions which can be seen in the appendix (p. 71), the errors were quantified as shown on table I (page 37).

4.1.1 Quantification of errors: Consonants

For a better understanding of the table, it is worth mentioning that the vertical column on the left presents the "phonemes", whereas the horizontal column presents the variations of errors.

Each phoneme was classified according to the position in which it occurred: initial, medial and final positions. Then, the number of times the phonemes appeared in each position was multiplied by 39 (the number of students) this would give us the number of times the phoneme should be produced (total number), which appears in the column next to "phoneme". After adding up the errors, a percentage of its occurrence according to its position has been presented and finally, the total percentage, e.g.: The phoneme /p/ appeared 11 times what gave us a total occurrence of 429 (11x39) times the phoneme was produced. In initial, stressed position aspirated /p/ appeared 7 times (7x39) giving us a total number of 273 times the phonemes should be produced. As our students did not aspirate /p/ in initial, stressed syllable, the percentage of error regarding aspiration
<table>
<thead>
<tr>
<th>Phoneme</th>
<th>Total nº of occurrences</th>
<th>INITIAL POSITION % of error</th>
<th>MEDIAL POSITION % of error</th>
<th>FINAL POSITION % of error</th>
<th>Total nº of errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>/p/</td>
<td>429</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>270 6365</td>
</tr>
<tr>
<td>/b/</td>
<td>546</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>270 6365</td>
</tr>
<tr>
<td>/l/</td>
<td>536</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>270 6365</td>
</tr>
<tr>
<td>/d/</td>
<td>390</td>
<td>—</td>
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</table>

*φ* = omission

**TABLE 1 QUANTIFICATION OF ERRORS: CONSONANTS**

<table>
<thead>
<tr>
<th>Phoneme</th>
<th>Total nº of occurrences</th>
<th>INITIAL POSITION % of error</th>
<th>MEDIAL POSITION % of error</th>
<th>FINAL POSITION % of error</th>
<th>Total nº of errors</th>
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</tbody>
</table>

*φ* = omission
was $\approx 100\%$. According to the table, there was no problem with
the phoneme /p/ in the other positions, thus the total
percentage was 63.63%.

The same procedure was followed for the quantification
of Vowels and Diphthongs as shown on table II, p.50.

4.1.2 Classification of errors

Errors were classified as shown on the table of classi-
fication of errors: consonants (p.44) and table of classifica-
tion of errors: vowels and diphthongs (p. 53).

As for the classification of errors involving consonants,
vowels and diphthongs an attempt was made to follow Richards'
classification mentioned on page 12.

However, other classifications were also mentioned when
necessary (see page 13/14).

4.2 DISCUSSION OF RESULTS: CONSONANTS

From the classification of errors it can be deduced that
only a few consonantal sounds are problematic for our students.
Some of them have no counterpart in Portuguese; while others
appear in both languages.

1 - The plosives /p, t, k/ appear in both languages.
However, the main difficulty arises when we remember that in
English:

/p, t, k/ when initial in an accented syllable,
are usually accompanied by aspiration (h), i.e.
there is a voiceless interval consisting
of a strongly expelled breath between the
release of the plosive and the onset of the
following vowel, e.g. pin, tin, kin [ 'pʰIn,
'tʰIn, 'kʰIn]... when /s/ proceeds /p, t, k/

[Image]
Initially in a syllable, there is practically no aspiration, even when the syllable carries a strong accent, e.g. pin /*pIn*/ and spin /*s'pln*/.¹

Aspiration proved to be a high source of error with a percentage of 100%. Besides this difficulty with /p/ and /t/ in initial position there was no other difficulty involving these phonemes in initial position. Although there was no occurrence in the sample of the aspirated /k/ it is assumed that it would cause a similar difficulty. Students proved to be unaware of this feature of the English language which seems to play an important role in the process of learning English. Gimson states that:

The main contrastive feature between the pairs pin/bin, team/deem, come/gum resides in the presence of aspiration in /p, t, k/ and its absence in /b, d, g/ presence or absence of voice being usually irrelevant in this initial, accented position, where /b, d, g/ are largely or totally devoiced.²

On the other hand, Corder stresses the importance of the presence or absence of voice when he declares:

From a language point of view it is not the relative frequency of sounds which is important, but the contrasts in meaning which differences in sound signal... There are many words in English mostly monosyllables, which are distinguished only by the opposition of /p/ and /b/.³

Therefore it is assumed that aspiration of /p, t, k/ which are voiceless consonants stresses the difference from their voiced counterparts /b, d, g/ e.g. pole/bowl, toll/dole; coal/goal.

In final position the phonemes /t/, /k/, /d/ proved to be a source of error by the insertion of a vowel: /tI, tɪ/; /dI, dɪ/, /KI, Kɪ/. Nevertheless, the percentages were lower.
Unlike /p/ and /t/ the phoneme /k/ in initial position presented a certain difficulty since it was produced when it ought to be omitted. This gives evidence that the occurrence of the phoneme in initial, medial or final position is not the most relevant factor regarding pronunciation; what really matters is the 'sound sequence', that is, whether the next phoneme is a vowel or a consonant.

2 - The velar, nasal /ŋ/ was a high source of difficulty as its percentage showed (80%).

As there is not a counterpart for this consonant in Portuguese; students have replaced it by either our nasal, alveolar /n/, or the nasal, alveolar /n/ in English.

The fact is that they do not perceive that /ŋ/ is different from /n/, they produce a sound similar to a nasal alveolar rather than a velar.

3 - The palato-alveolar affricate /tʃ/, in medial position, presented a high percentage of error (100%). Students were unable to make the assimilation between /t/ with /j/ in such phrase as 'last year', which should be pronounced /lastʃ/ or /laʃʃ/. This proves the fact that students are not aware that in certain environments /s/=/ʃ/ before /ʃ,j/, e.g. this shop /ʃI/Dp/, this year /ʃIʃI/ due to "coalescence":

The process which has led to earlier /t,d,s,z/ + /j/ giving /tʃ, dʒ, sʃ, zʃ/ medially in a word (nature, grandeur, mission, vision) may operate in contemporary colloquial English speech at word boundaries.

Students know how to pronounce the words in isolation, however a better performance did not occur because they do not know that:
Variation of articulation may be of an allophonic kind, either within a word or at word boundaries; or at word and morpheme boundaries, they may be of such an extent that a change of phoneme is involved, as between the pronunciation of a word in isolation and that which it may have in context.

4 - The alveolar fricatives /s, z/ were also a problem, mainly in final position. The phoneme /z/ presented a percentage of (66.30%) in final position, whereas the percentage decreased a lot in medial position (5.12%). Regarding its voiceless counterpart /s/ it presented a lower percentage in initial position (10.76%) and a higher percentage in final position (43.58%). If it is taken into consideration the fact that these two phonemes appear in Portuguese, it can be said that their production is not a problem for our students, since they are able to produce them. The main difficulty is due not only to the position of these two phonemes in the word but, mainly, to the sound sequence. It is true that s can be pronounced as /s/ in English, however, there are occasions that it has to be rendered as /z/. The letter s in Portuguese at a final position is the sign of plural. It is almost always rendered as /s/, although sometimes not, e.g. rosas /rozaz/. In English s and es signal not only the plural but also the third person singular of the present tense. In addition, some phonological rules must be followed. For instance, if the word ends in a voiceless sound the sound will be /s/; if it ends in a voiced sound the sound will be /z/; if it ends in s, z, sh, ch followed by es the sound will be /l/.

Students ought to know that this is a very important feature of the English language, a distinctive one, because it involves differences in meaning, e.g. since /'sIns/ and sins /'sInz/.
5 - The insertion of vowels: /s/=/Is/,
/k/=/kI,kI/. The tendency of our students to insert a vowel before /s/ and after /k/ and in initial position (as it has already been mentioned) is due to the fact that the distribution of sounds in syllables in English is different from Portuguese, that is, in Portuguese syllables almost always begin or end with a vowel sound, which is not the case in English.

In addition, it can be said that some consonantal clusters in English are difficult for our students to produce. Besides this problem in initial position, the same insertion of vowels occur with the phonemes /v,f,t,d,k,s,\text{\text{-}}/ in final position.

6 - The palatal, semi-vowel /j/ in the beginning of words like 'use, used' presented a high percentage (69.48%); in medial position the percentage was even higher (79.23%).

The omission of the /j/ before /u:/ may show that students either rely on the orthography disregarding the phonological rules or are influenced by American English.

7 - The dental fricative /\theta/ with a percentage of (53.84%) proved to be a higher source of error for this group than its voiced conterpart /\partial/ (9.61%). As these phonemes do not have a counterpart in Portuguese they have been either replaced by the dentals /t,\partial/, the labio dental /f/ or the alveolar /s/ phonemes which appear in Portuguese. This is a hindrance for communication in words like think /\text{\text{-}}\text{\text{-}}\text{\text{-}}\text{\text{-}}\text{\text{-}}/ and /\text{\text{-}}\text{\text{-}}\text{\text{-}}\text{\text{-}}\text{\text{-}}/, etc.

8 - The labio-dental fricative /\text{\text{-}}v/ presented a significant percentage regarding the variation of error in final position (37.43%). This was caused either by the insertion of a vowel /\text{\text{-}}vI,\text{\text{-}}\text{\text{-}}\text{\text{-}}v/ or the production of the strong form /\text{\text{-}}\text{\text{-}}f/ instead of the weak form /\text{\text{-}}\text{\text{-}}v/. As both phonemes appear in Portuguese, students'
errors might be due to sound sequence already mentioned orthography or their little information about weak or unstressed words in English.

9 - The cluster /bl/ in final position presented a percentage of (33.33%) of error.

This cluster also appears in Portuguese, but it is more common in initial position. The interesting point to mention is that they rendered it either omitting the /b/=/lI/ or omitting the phoneme /l/=/bI/. This might have happened because of words ending in 'by'or'ly' in English.

10 - Final ed of verbs: revealed a high percentage of error; final /t/ presented (44.44%) and final /d/ (71.79%). Students are taught that the past tense of regular verbs is formed by adding ed or d to the infinitive form. They are also taught that these endings ought to be pronounced in the following ways: /t/ if the verb ends in a voiceless sound, except /t/, e.g. knock+ ed-knocked/'nOkt/; /d/ if the verb ends in a voiced sound, except /d/, e.g. determine+ d=determined /dI't^n3:mInd/; or as a separate syllable after /t,d/, e.g. need+ed=needed/'ni:dId/. It seems that students are unable to perceive these different ending sounds and think they are not important.

11 - The English post-alveolar semi-vowel /r/ in initial position was also a problem for our students; however the percentage was low (14.10%). It was produced as a glottal fricative /h/. As both phonemes appear in English mainly in initial position our students unable to perceive their difference mixed them up.

12 - The Glottal plosive /ʔ/. While doing the native
speaker's transcription, it was noticed that our students were unable to produce it. Gimson states that: "The glottal plosive, though frequently used by R.P. speakers, is not a significant sound in the R.P. system".\(^6\)

Therefore we have not considered the absence of the glottal plosive in our students' transcriptions as an error, despite its inclusion in the quantification table. (p. 37)

### 4.3 PSYCHOLINGUISTIC CLASSIFICATION OF ERRORS IN THE PRODUCTION OF CONSONANTS

It seems that from a brief examination of the table below that almost all errors might be classified as "interlanguage error"—errors caused by the interference of the learner's mother tongue".\(^7\) This error is referred to as 'interference' by Lado (see p. 11). Although interlanguage error is important for the classification of errors, Richards has excluded this classification from his, because he declares that there are errors which "are frequent, regardless of the learner's language background".\(^8\)

#### TABLE OF CLASSIFICATION OF ERRORS: CONSONANTS

<table>
<thead>
<tr>
<th>1. Interlanguage error:</th>
<th>Initial position: (/s)=/ls/; (/k)=/kI, k(\dagger)/</th>
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<tbody>
<tr>
<td></td>
<td>(/\theta, \partial)=/t, s, d/</td>
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<tr>
<td></td>
<td>(/p, t, k/ = /p, t, k/)</td>
</tr>
<tr>
<td>Final Position: (/v, f, , , k, d\dagger/ = /vI, v\dagger, fI, f\dagger, kI, k\dagger, d\dagger, dI, d\dagger/</td>
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</tr>
<tr>
<td></td>
<td>(/t/=/tI, t\dagger, d/)</td>
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<tr>
<td></td>
<td>(/d/=/dI, d\dagger, t/)</td>
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</tr>
<tr>
<td></td>
<td>(/s/=/z, zI, si, sI, zi/)</td>
</tr>
<tr>
<td></td>
<td>(/z/=/Is, zI, s, z\dagger, s\dagger/)</td>
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</tr>
</tbody>
</table>
| 2. Overgeneralization | Initial position: /r/=/h/; /ju:/=/U,u:/ | Final position: /s,z/  
|   | Final ed of verbs |   |
| 3. Incomplete application of rules: | Initial position: /p,h,t,h,k,h/=/p,t,k/  
|   | Medial: /t/=/ts/ | Final position: ed of verbs; /s,z;/v/=/f/ |
| 4. Ignorance of rule restrictions: Analogy | /n/=/n/; /ju:/=/U,u:/; /b,l/=/b,l/ |   |
| 5. False concepts hypothesized: | Final: /s,z/; ed of verbs | Initial: /r/=/h/ |
| 6. Hypercorrection: | /r/=/h/; /t/=/ts/ |   |
| 7. Inferencing | /ju:/=/u:U/ |   |

As it was mentioned previously an attempt was made to follow Richards' classification (see table above) without disregarding other classifications (see p. 13/14). These classifications are not to be seen as watertight nor mutually exclusive since a single error may occur for a number of different reasons or appear to have more than one source, as the table shows.

1 - Lack of aspiration has been classified as an interlanguage error due to the great similarity among the plosives /p,t,k/ in English and Portuguese. It could also be classified as incomplete application of rules, if students after being taught this phonological rule do not apply it when necessary.

2 - Our students' difficulty with the English velar nasal might be classified as an interlanguage error, as there
is not a counterpart for this vowel in Portuguese they use the
alveolar, nasal /n/. This might also have happened due to the
analogy with the alveolar nasal in English /n/.

3 - The palato-alveolar affricate /tʃ/ difficulty might
be explained as an "an incomplete application of rules since
students do not apply the rule of "coalescence" which tells
that in certain environment /s/=// before //,j/. Another
possibility might be overgeneralization students know words
which begin with the cluster st and whenever they see this
cluster they produce it as /st/. Analogy might be also another
possibility as there are words they know which have st produced
as /st/. Another classification might be "hypercorrection".
Gimson states that:

In very careful speech, some speakers would use
somewhat artificial, uncoalesced, forms within
words, e.g. /'neItʃi/, /'kwEstʃin/ (nature,
question), etc. Such speakers would also avoid
coalessences at word boundaries; other, careful
speakers who use the normal coalesced forms
within words, would consciously avoid them at
word boundaries.

4 - The alveolar fricatives /s,z/. Our students'
difficulty with these two phonemes might be explained as an
interlanguage error since the two phonemes appear in Portuguese.
It was noticed a great fluctuation in the production of these
phonemes, and this might lead us to another classification
"incomplete application of rules, students have been taught
the rule, but think it is not important and do not apply it.
There are still two other possibilities: overgeneralization,
students have learned that the plural in English is generally
formed by adding "s" or "es" (with a few exceptions) and as
this s is sometimes rendered as a voiceless sound /s/ they
overgeneralize the rule. Finally, this error might be explained as "false concepts hypothesized", that is, students are unable to perceive these sound distinctions consequently they do not produce them.

5 - The insertion of vowels: before /s/ in initial position and after /k/ also in initial position and after the phonemes /v,f,t,d,s,z,dʒ/ in final position might be classified as an interlanguage error, since syllables in Portuguese always begin or end with a vowel. Therefore students relying on their mother tongue transfer this characteristic to English.

6 - The omission of the palatal /j/ before /u:/ might be classified as an interlanguage error due to the students reliance on the orthography of English influenced by their reliance on the orthography of Portuguese. Another possibility of classification is inferencing, students' pronunciation might be suggested by the visual appearance of the word. For instance, in American English the pronunciation is tube /ˈtʌb/; assume /ˈsu:m/. Thirdly, there is the possibility of "analogy-the learner rationalizes a deviant pronunciation from his previous experience of English sounds.

7 - The students' difficulties with the dental fricatives /θ,ächt/ might be due to interlanguage error. Students do not have a counterpart for these two phonemes in Portuguese. Thus, they replace them by the dentals /t,d/, the labio-dental /f/ or the alveolar /s/. Another possibility of classification might be false concepts hypothesized - students are unable to perceive the difference between /θ,ächt/ and do not produce them.

8 - The labio-dental fricative /v/ which students produced as its counterpart /f/ might be classified as an
interlanguage error - students relying on the orthographic system of English based on their reliance on the Portuguese system. Overgeneralization, whenever students see the letter f produce it as /f/; another explanation might be incomplete application of rules, students know that form words may be unstressed, but they do not apply the rule.

The difficulties involving the dental and the labiodental fricatives might be explained by another factor called "Universal Hierarchy of Difficulty".

Richards states that:

This factor is concerned with the inherent difficulty, for man, of certain phonological, syntactic or semantic items and structures: some forms may be inherently difficult to learn no matter what the background of the learner. It is well known that the English pairs /v/-/ð/ and /f/-/θ/ are very hard to distinguish; not only for non-native speakers but for native speakers as well (Delattre, Liberman and Cooper 1962).10

9 - The difficulty with the cluster /bl/ might be explained as an error due to analogy with words ending with by or ly in English.

10 - The difficulty with final ed of verbs might be classified as incomplete application of rules: students are taught the phonological rules applied to final ed of verbs but do not use them. This difficulty might also be explained as due to false concepts hypothesized they are unable to perceive these sound distinctions and do not produce them because they think it is not important. Overgeneralization, might be used to explain the possibility of having learned one ending sound and using this ending in all occasions.

11 - The pronunciation of post-alveolar, semi-vowel /r/ in initial position as a glottal fricative /h/ might be explained
as a case of overgeneralization, they pronounce the two sounds as one because they occur in the same position. Another classification might be false concepts hypothesized because they are unable to perceive the difference between the two sounds.

4.4 DISCUSSION OF RESULTS: VOWELS AND DIPHTHONGS

Looking at the table of quantification of vowels and diphthongs one notices that vowel quality is a special problem for our students.

1 - The mid-front vowel /e/ presented a high percentage of error in initial position (100%) and in medial position (98.07%). The mid-front vowel /ae/ presented a percentage of (30.76%). Although the percentage was lower, it still deserves attention. In Portuguese there is not a phoneme like /ae/ but there is a mid-front vowel /e/ and a low front vowel /E/.

Gimson states that:

This vowel may present difficulties to those foreign learners whose native language possesses two types of /e/, usually of C/e/ and C/E/ qualities. Very often such a learner equates the English /e/ with his own half-open variety, thereby using a vowel of too open a quality which might be confused by R.P. listeners with /ae/. He should therefore modify his vowel in the direction of his own, closer, C/e/ sound.

2 - The mid-central vowel /i/ with neutral lip position proved to be a high source of problem as its percentage show: in initial position (74.55%); in medial position (69.93%) decreasing a little in final position (32.69%). Since we do not have a counterpart for this vowel in Portuguese, students make errors because they are unaware that in unstressed words this
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<tr>
<th>Phoneme</th>
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<th>INITIAL POSITION</th>
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mid-central vowel is the most common vowel. Students ignore that:

...some words are predisposed by their function in the language to receive accent. Those content or lexical words are typical main verbs, adverbs, nouns, adjectives, demonstrative pronouns, etc. Other categories of words, such as auxiliary verbs, conjunctions, prepositions, pronouns and articles (form or grammatical words) are more likely to be unaccented, although they, too, may be exceptionally accented if the meaning requires it.12

3 - The low back vowel /a:/ with a percentage of (66.66%) showed to be a problem in medial position. Students know that the letter a can have more than one sound in English, but when they have to read a word they do not know which phoneme to produce.

4 - The high back short vowel /U/ with a percentage of (30.76%) presented a certain difficulty. There is in Portuguese a high back vowel /u/, but it is neither tense not lax as the two phonemes in English /u:/ and /U/, respectively. Our students besides mixing up the phonemes are also misled by the orthography of English.

5 - The mid-central vowel /3:/ presented a percentage of (30.76%). Since there is no counterpart for it in Portuguese, students are also misled by the orthography of English.

6 - The high-front vowels /I,i:/ presented a percentage of difficulty lower than expected.

The phoneme /I/ presented a percentage of (20.53%) in initial position, in medial position (24.06%) and in final position (7.69%); whereas its counterpart /i:/ presented a percentage of (21.53%) in medial position, and (17.94%) in final position. It has to be declared that there were no
examples of /i:/ in initial position. Although there is one high front vowel /i/ in Portuguese, this vowel in Portuguese "does not have the diphthongization which is typical of R.P."¹³

Students render /I,i:/ as /aI/ because there is this possibility in English in words like drive /'draIV/; driven /'drIvn/. Another difficulty with /I,i:/ is making the difference among words like seat /'si:t/ and sit /'sit/; leave /'li:v/ and live /lIv/.

7 - The mid-back vowel /0:/ which might correspond to our low back vowel /O/ showed a percentage of /17.94%) in final position, which decreased to (13.24%) in medial position showing that this vowel despite not being a high source of error, deserves attention.

Diphthongs:
1 - The diphthong /Ei/ showed a high percentage of error in initial position (95.72%) and in final position (100%). There is not a counterpart in Portuguese for this centring diphthong.

2 - The diphthong /Ii/ was also another source of error with a percentage of (56.41%). It has no counterpart in Portuguese. Since students know words like deal, heat, etc; whenever they see ea in a word they tend to produce a long /i:/.

Centring diphthongs /Ei, Ii/ are rather difficult sounds to produce because they involve vowel sounds difficult to produce /I,i,E/. Besides this difficulty there is the sound sequence which does not indicate to the students that they have to diphthongize.

3 - The diphthong /OI/ presented a high percentage of error in medial position (92.30%). There are two
Diphthongs in Portuguese /oy/ and /Oy/; one being open /Oy/ and the other closed /oy/. This possibility does not occur in English.

4 - The diphthong /aU/ presented a percentage of (38.46%) in medial position. Despite having a similar diphthong in Portuguese, this might be explained by the variation of sounds for the letters ou in English: house /aU/; though /oU/; bought /0:/; tough /A/.

5 - The diphthong /oU/ presented a percentage of (33.33%) in initial position. Although there is in Portuguese a similar diphthong this might be caused, again, by the sound sequence which does not indicate that there is a diphthong.

**TABLE OF CLASSIFICATION OF ERRORS: VOWELS AND DIPHTHONGS**

| 1. Interlanguage error: | Initial: /I=/i/; /ou=/0,OU/; /e=/E/
|                        | Medial: /I=/i,ai,UI;/i=/i,I;/ae=/E,ei/
|                        | Final: /I=/eI;/i=/i,I/
|                        | /U=/oU;/e=E,0U,ei,Ui;/A=/o,O;/OI=/O1,0i,oi/

| 2. Overgeneralization: | Initial: /i=/I,i;/I=/i,ai,eI/
|                       | Medial: /aU=/au,0U,O/
|                       | Final: /i,I=/aI;/i3=/i:;/Ou=/O,00, aU,o;/a=/E,eI/

| 3. Incomplete application of rules: | Initial: /a=/ar,ae,a,ae,E,O,o/; /Ea=/E,
|                                    | ai,ae/
|                                    | Medial: /a=/E,ae,0u,o,a,A/
|                                    | Final: /a=/I,U,a/ |
4.5 - PSYCHOLINGUISTIC CLASSIFICATION OF ERRORS IN THE PRODUCTION OF VOWELS AND DIPHTHONGS

We have already stated that vowels, in English, would be a very difficult task for our students. The main difficulty lies in the lack of counterparts for vowels, such as /I,i,e,a,e,U,/. Besides, there is the distribution of those phonemes in the syllables, which varies according to the neighbouring sounds. It has already been stated that there is no correspondence between the orthographic and the phonological systems in English, and this is one major cause of difficulty for our students, who almost always can rely on the orthographic system of their language. Therefore, interlanguage errors will be one of the main sources for errors. Nevertheless, another source will be intralingual errors, because students will also rely on their knowledge of the target language making overgeneralization, analogies, inferences, etc.

This classification seems to be rather difficult because it is not exactly known what is going on in the student's mind at the moment he sees and reads the word. Inferencing is
undoubtedly another source, for the visual form of the word might induce the student to pronounce it according to the pronunciation of another word he already knows.

1 - The mid-front vowels /e,ae/ in English are difficult for our students to produce because there is not a counterpart for /ae/ in Portuguese. Although there is in Portuguese a mid close /e/ and a low close /E/ they are similar but not equal to English /e,ae/. Therefore our students due to interlanguage error produce /E/ instead of /e/. Similarly they confuse /ae/ with /E/. Another classification might be due to false concepts hypothesized, students are unable to perceive the difference between /e/ and /ae/ therefore they are unable to produce them and think this difference is not important.

2 - The mid-central vowel /ɪ/ difficulty might be due to incomplete application of rules, students are unaware that unaccented vowels are usually rendered as /ɪ/ in English and that there are content words (which are predisposed to receive accent) and form words (which are more likely to be unaccented). Another possibility might be overgeneralization students have been exposed to form words as strong forms and use only strong forms to all words.

3 - The low back vowel /aː/ difficulty might be due to overgeneralization, students know that the letter a can be produced as /ae/, /eɪ/, /aː/; however, they are unable to choose the correct phoneme and produce /E,eɪ/, when it ought to be /aː/.

4 - The high-back, short vowel /U/ difficulty might be due to an interlanguage error as there is in Portuguese a high back vowel /u/; another possibility of classification might be analogy, students produce /uː/ when they ought to produce /U/.
False concepts hypothesized might also be used to explain this difficulty, since students unable to perceive this difference do not try to produce two different phonemes.

5 - The low-central vowel /3:/ difficulty might be classified mainly to analogy with the orthography of English, they know the word hear /hiə/, when they see heard they think it is very similar to hear and produce it /IE,iə/ and sometimes they produce it as /Ir/ since ea can sometimes be produced as /I,iə/.

6 - High front vowels /i:,I/ in English are produced as /i/ due to interlanguage error, since there are no counterparts for these phonemes in Portuguese. In English the letter i can sometimes be rendered as /aI/, therefore students due to overgeneralization produce /aI/ whenever they see an i. Another classification of this error might be false concepts hypothesized, students are unable to hear the difference in sound between words like /li:v/ and /'li:v/ and do not produce two different phonemes.

7 - The mid-back vowel /o/, although not a very high source of error, might be explained as an interlanguage error students see the letter o and produce it either as /o/ or /0/ phonemes which appear in Portuguese; they might also be influenced by spelling, analogy - when they see the word bought they render it as /boUt, bot, bAt/ or they might be overgeneralizing one of the sounds.

Regarding diphthongs, the centring diphthongs /Ei,Ii/ caused a lot of problems. This might be due to an interlanguage error; students who can rely on the orthographic system of Portuguese are misled by the orthographic system of English.
Another possibility is overgeneralization, whenever they see the letters _ea_ they produce /i:/, they make a choice between /I/ and /i:/, although the wrong one. Incomplete applications of rules might be used to explain the _ai_ produced as /E,ae/ they know that it goes toward a mid-front vowel but forget to diphthongize, that is, to produce the mid-central vowel /ɨ/.

The difficulty with the diphthong /OI/ might be explained as an interlanguage error: students produce this diphthong basing their production on the phonology of Portuguese.

The diphthongs /aU/ and /oU/ might be explained as errors due to interlanguage: students are relying on the orthographic system of English the same way they rely on the orthographic system of Portuguese. Another possibility might be due to ignorance of rule restrictions: analogy, students are not basing their production of the words on the phonological rules but on the spelling.

This might also be due to inferencing, the visual form of the word induces the student to pronounce the word according to the pronunciation of another word he already knows. The variation of the letters _ou_ in English may be as follows:

- _house_ /aU/;
- _though_ /oU/;
- _bought_ /Oː/;
- _tough_ /ʌ/.
NOTES


2 GIMSON, A.C. op. cit. p.48.


5 ibid. p.266

6 GIMSON, A.C. op. cit. p.162.


8 ibid.

9 GIMSON, A.C. op. cit. p.272.


11 GIMSON, A.C. op.cit. p.100

12 GIMSON, A.C. op. cit. p.235

13 GIMSON, A.C. op.cit. p.162.
The purpose of this research was to find out the main phonemic errors regarding the pronunciation of vowels, consonants aspiration of /p, t, k/ among first year undergraduate students of English at the Federal University of Paraná.

According to the results the most frequent phonemic errors regarding consonants involve:
- the aspiration of /p, t, k/;
- the velar nasal /n/;
- the palato alveolar /t/ in medial position;
- the alveolar fricatives /s, z/ mainly in final position;
- the palatal, semi-vowel /j/ in initial position;
- the dental fricative /θ/;
- the labio-dental fricative /v/ in final position due to wrong word-stress;
- the cluster /bl/ in final position;
- final ed of verbs /d, t/;
- insertion of a vowel before /s/ and after /k/ in initial position and after the phonemes /v, f, t, d, k, s, z, ð/ in final position; and
- the post-alveolar semi-vowel /ɾ/ in initial position.

Regarding vowels and diphthongs the results were the following:
- the mid-front vowels /e/, /æ/
- the mid-central vowel /ɨ/;
- the low-back vowel /a:/;
- the high-back short vowel /U/;
- the mid-central vowel /ɔ:/

The vowels /U/, /ɔ:/ presented a percentage higher than the high-front vowels /I,i:/.

The mid-back vowel /O/ presented a low percentage still deserving attention.

Diphthongs /Eɪ, Iɪ, Oɪ, uɑ, oʊ/ were the most problematic for our students.

The present research proved that through the process of error analysis it is possible to detect the difficulties that are really a problem for our students. If contrastive analysis were used the starting point would be the differences between the two phonological systems, Portuguese and English, taking for granted that different is difficult, an assumption which did not prove to be completely true according to the results achieved.

Nevertheless, the main phonemic errors were among some features for which there are no counterparts in Portuguese: the phonemes /ŋ, θ,tʃ, j,r, ʌ, e, ae, ɔ:, u, Eɪ, Iɪ/, the aspiration of /p,t,k/ yet, the other errors involved the phonemes /v,s,z,t,d/ which appear in both languages.

In order to help students overcome those difficulties, they ought to become accustomed to a systematic study of the phonology of the English language. Students without this knowledge will always make errors because they are not exposed to English in functional situations (they have little contact with native speakers). Therefore, students ought first to listen to the English sounds and be taught how to produce them as
accurately as possible.

It was noticed that word-stress, which is an example of supra segmental feature, proved to be a high source of error if it is taken into consideration the high frequency of error involving the mid-central vowel /i/ which is characteristic of unaccented words. Consequently, students' attention has to be called to features like sound patterns, rhythm and intonation of English, features which characterize native speech.

Through practising listening, spending the necessary amount of time in the language laboratory (this device is very helpful for developing listening skill), teachers will provide students with enough input helping them to cope with the English sounds.

Wilga Rivers says that:

In the early stages students should be encouraged to repeat to themselves the segments they have apprehended, first as stretches of sound, then in an attempt at syntactic grouping. The very effort of repetition forces the students to segment the stream of sound in some fashion, the auditory image is longer retained and the student has time to relate segments and to readjust his developing interpretation.¹

She continues:

Training in listening comprehension by parallel production is more than mere imitation: it forces concentration on segmentation as well as providing guided practice in the production of well-formed segments, thus integrating with listening comprehension an operation which is basic to creative speech production as well.²

Our students are not beginners anymore, but we feel that a good training in listening comprehension would help them considerably. There is no doubt that, concomitantly, students
should have an explanation of the articulation of the sounds which are a source of errors. The listening stage already mentioned ought to be systematic one class every week ought to be dedicated to phonology.

With regard to the lack of aspiration, teachers should prepare lists of words containing /p, t, k/ with their counterparts /b, d, g/ which have no aspiration, e.g.: pole/bowl; toll/dole; coal/goal, etc.

Consequently, students exposed to this training would pay more attention to this feature of the English language. For the other problems involving consonants a similar procedure might be used, that is, list of words presenting the problematic consonants might be recorded and then students in the language laboratory would listen to the correct pronunciation of the word; students might have on a sheet of paper—a list of words; on the opposite side, their phonetic transcription.

Vowels might be treated in the same way, lists of words containing the vowels would be presented for the students in the language laboratory; lists containing minimal pairs, e.g.: eat/it; leave/live; read/rid; bead/bid, etc.

The accented and unaccented words ought to be recorded following the already mentioned procedures. There is an excellent list of words in Gimson "An Introduction to the Pronunciation of English", p.240-2.

Another interesting device for the teaching of word-stress might be the use of songs or children's games, like a "dollar, a dollar" and other rhymes such as "This is the house that Jack built". Limericks (non-sense poems of five lines) are also an excellent device for the teaching of segmental pronunciation, e.g. sheet no. 1.[p. 56].
Students ought to be aware that "stress is a very important feature of the English language, that differences in stress can create differences in meaning", e.g. sheet no? 2."(p. 87).

Examples of the English stress patterns should also be given, sheet no? 3. (p. 89).

Besides word-stress, which might have been used as a classification for errors, it has been noticed that English spelling is one of the highest sources of errors. As it was pointed out, our students who can almost always rely on the spelling of Portuguese transfer this reliance to English. Unfortunately, this ought not to be done, since it has been stated that there is not a one to one correspondence between the orthographic and the phonological systems of English. Therefore, it is believed that besides learning how to pronounce sounds, students ought to be taught how to pronounce words in sentences.

Knowing how to pronounce a word, then, means knowing two things: first, which sounds are needed in a word, and second, how to articulate the needed sounds (Dickerson, 1975b, 1977b).

Dickerson and Finney state that:

They (students) are not shown how to generate correct pronunciations for words they have encountered only in written form. But it is precisely this creative skill that learners need in order to respond effectively to the demands of oral communication.

It cannot be denied that segmental features: vowels and consonants have been under constant studies among linguists, all over the world. Consequently, the present research might be viewed as only one more research involving the phonology of
English and Portuguese. Nevertheless, we have to point out that we tried not to deal with words in isolation, but with words in context. This being the main reason for choosing a reading-text. One might argue why, having chosen a text, we used a "broad transcription" instead of a "narrow transcription". The answer might simply be that a narrow transcription would give us too many details, and our intention was not to exhaust the subject. Therefore, some aspects considered the most important were selected. It is felt that the sample despite not fulfilling all the possibilities concerning vowels and consonants, gave us a good insight into the problem, revealing our students' main problems.

Had we realized earlier that "sound sequence" mentioned on page 40 was more relevant than the classification of error according to the occurrence of the phoneme in initial, medial and final positions (whose value cannot be denied), we are sure to have had more consistent results regarding the total percentages.

Some say that the ability to produce the segmental features of a language does not attest one's ability to speak the language. This is, undoubtedly, a positive assumption. Our research has proved that there are other factors which do not belong to the area of segmental features but which affect their realization. Word-stress (an example of supra-segmental feature) was a very important factor affecting pronunciation.

We hope that this research will serve as a starting point for new researches into the field of phonology, mainly those involving supra-segmental features, such as stress, intonation and rhythm of the English language, because we feel that the pronunciation of the segment depends on the supra-segmental features.
NOTES


2 ibid.


4 Notes taken at a course given by Professor Mason at this University in 1977.


6 ibid. p.165.
RESUMO

Este trabalho tem como objetivo analisar as características segmentais de pronúncia dos alunos do 1º ano de Graduação em inglês da Universidade Federal do Paraná, (1981). Estas características se referem à pronúncia de vogais e consoantes, (aspiração das plosivas /p,t,k/).

Esta pesquisa abrange um estudo comparativo das fonologias da língua inglesa e portuguesa. Escolhido o texto do livro "Practice and Progress" de L.G. Alexander para alunos intermediários (p.53) passamos para a gravação do mesmo pelos alunos no laboratório de língua, individualmente. Após a gravação do mesmo texto por um falante nativo, partimos para a fase de transcrição fonética. Comparando a transcrição fonética feita dos alunos com a do falante nativo pudemos observar quais os erros que ocorreram com maior frequência. Feita a quantificação dos erros, a nova fase foi a discussão dos resultados em duas perspectivas: linguística e psicolinguística. Incluímos também neste trabalho uma revisão bibliográfica dos fatores que afetam a pronúncia, como também uma revisão da classificação de erros.

Concluímos que tendo encontrado as áreas que apresentam maiores dificuldades para os alunos do 1º ano achamos importante a sugestão de estratégias de ensino para minimizar estes erros dando aos alunos a oportunidade de, ao deixarem a Universidade apresentarem um melhor nível no que se refere à pronúncia da língua inglesa.
APPENDIX 1

The symbols used by Professor A.C. Gimson in his "An Introduction to the Pronunciation of English" will have a corresponding symbol to be used throughout the present work due to the impossibility of getting a typewriter suitable for phonetic transcription. Therefore the list of symbols used by Gimson will be on the left-side of the page and the corresponding symbols in our transcription on the right.

1. Cardinal Vowel no. 1 (approximately as in French si); used for English in see /i:/ .................................................. /i:/

2. Cardinal Vowel no. 2 (approximately as in French thé); used for Eng. /e/ in bed, and first element of diphthong /el/ /e/

3. Cardinal Vowel no. 3 (approximately as in French père); used for the first element of diphthong /ɛː/ (approximately as in Portuguese ela) ................................................. /E/

4. Cardinal Vowel no. 4 (approximately as in French Vowel patte); used for first element of Eng. diphthong /əl/ ............... /a/

5. Cardinal Vowel no. 5 (approximately as in French pas); used for first element of Eng. diphthong /aʊ/, and for Eng. /a/ in car ................................................................. /a: /

6. Open rounded Cardinal Vowel no. 5 (Eng. vowel in dog) ....... /D/

7. Cardinal Vowel no. 6 (approximately as in German Sonne); used for Eng. /ɔː/ in saw, and first element of diphthong /ɔːɪ/ ................................................................. /ɔ/

8. Unrounded vowel no. 6; used for Eng. vowel in cup ........... /ʌ/
Cardinal vowel n° 7 (approximately as in French eau);
used for Eng. November........................................................./o/
Cardinal vowel n° 8 (approximately as in French doux);
used for Eng. /u:/ in do........................................................../u:/
front vowel between open and half-open (Eng. vowel in cat)................................./æ/
unrounded central vowel (Eng. initial and final vowels in another).........................../ə/
unrounded central vowel (Eng. vowel in bird)........................................../3:/
centralized half-close vowel (Eng. u in put)........................................./ʊ/
centralized unrounded half-close vowel (Eng. vowel in sit)................................../i/
voiced bilabial plosive (Eng. b in labour)................................./b/
voiceless bilabial plosive (Eng. p in pea)........................................../p/
voiced bilabial nasal (Eng. m in me)........................................../m/
voiced alveolar plosive (Eng. d in lady)........................................../d/
voiceless alveolar plosive (Eng. t in tea)........................................./t/
voiced alveolar lateral continuant (Eng. l in lay)................................../l/
voiceless alveolar lateral continuant with velarization (Eng. ll in fill)................................./ʃ/
voiced alveolar nasal (Eng. n in no)........................................../n/
voiced dental fricative (Eng. th in other)........................................../ð/
voiceless dental fricative (Eng. th in thing)................................../θ/
voiceless labio-dental fricative (Eng. f in for)................................../f/
voiceless labio-dental fricative (Eng. v in ever)................................../v/
voiced velar plosive (Eng. g in eager).........................................../g/
voiceless velar plosive (Eng. c in car).........................................../k/
voiceless velar nasal (Eng. ng in sing).........................................../ŋ/
voiceless glottal fricative (Eng. h. in house)................................../h/
voiceless alveolar fricative (Eng. s in see)................................../s/
z voiced alveolar fricative (Eng. z in lazy) .......... /$z$/
j palatal unrounded semi-vowel (Eng. y in you) ........ /$j$/
w bilabial semi-vowel (Eng. w in we) ................... /$w$/
ʒ voiced palato-alveolar fricative (Eng. s in measure) .. /$\check{\eta}$/
ʃ voiceless palato-alveolar fricative (Eng. sh in she) .. /$\check{\iota}$/
voiced post-alveolar frictionless continuant (Eng. 1 r in red) ........................................... /$r$/
tʃ voiceless palato-alveolar affricate (Eng. ch in child). /$\check{\iota}t$/
dʒ voiced palato-alveolar affricate (Eng. j in jam, dq in badge and g in age) ................................ /$\check{\eta}\check{g}$/
tr consonantal cluster, post alveolar affricate .......... /$\check{\eta}tr$/
dr consonantal cluster, post alveolar affricate .......... /$\check{\eta}dr$/
APPENDIX 2

2.1 MAD OR NOT?

Aeroplanes are slowly driving me mad. I live near an airport and passing planes can be heard night and day. The airport was built during the war, but for some reason it could not be used then. Last year, however, it came into use. Over a hundred people must have been driven away from their homes by the noise. I am one of the few people left. Sometimes I think this house will be knocked down by a passing plane. I have been offered a large sum of money to go away, but I am determined to stay here. Everybody says I must be mad and they are probably right.
Broad Phonetic Transcription

1 - Professor Mike Watkins' (native speaker): Tape no. 1

/ˈEɪrɪpleɪnɪŋ ə sˈlʊUli ' draɪvɪŋ miː 'meɪd/ 'aɪ/ˈlɪv niː æn
'EɪpO:tán ' pʰa:sIŋ 'pʰleɪnɪŋ kɪn biː 'h3ːd naɪtn' dɛl/ˈdɛl
EɪpO:t wɪz 'bɪl? 'djuːrɪŋ ðə wɔːt brit fæ sʌmˈrɪ:zn I? kʊd nɒt
bɪːjʊ:d dzənˈlɑːst/ɪ həʊˈevə I? keɪm ɪntə 'juːs/ˈoʊvər ðə
ˈhændrɪd ˈpiːpl mʌst ãv 'biːn 'drɪvŋ ðə ˈwɜːrld frəm dˈæz
ˈhoʊmz bæI ˈdɛz/ 'nɒiz/ˈaɪ ɪm 'wʌn ãv ðə fjuː 'pʰiːplˈlɛft/ˈsʌmtaɪmz
aɪˈθɪ? ˈdɛz 'hæUs wɪl biː 'nɒk dəʊn bæI ðə pʰæsɪŋ 'pʰâlɛɪŋ/ˈaɪ
hɪv bɪːn 'ɔfɪd ðə 'lɑːrdz sʌm ɪn'mænɪ tɪː ã goʊ ðə əl
mɪˈθɜː ˈmɑːnst tɪ sˈtɛl 'hɪˈevrɪbɒdɪ 'sez əɪ mʌst biː 'meɪd æn
ðəl ðə 'pʰrəʊbəlɪ ˈreɪlt/

- Eliana's group:

1. (00) Tape no. 2

/aɪʊrʊpɛlɛnz ær ɪsˈlʊUli drɪvɪŋ miː/ˈmeɪd/əɪ liːv niː:
aen ˈærʊpɔːrt ænd pɛsɪn pleɪnɪs kæ bi h3ːd nɑɪt æn ˈdɛl/,
ˈðə ˈærʊpɔːrt wʊs bɪld djuːˈrɪŋ ˈðə wɔːt, bɔːt fɔr sʌm rɪːz
ɪt kʊdˈznɒt biː juz ˈdɛn/ˈlɛst j3ː, hauˈɛv3: It keɪm ɪntʊ juzɪ/
ˈoʊvɜː ə ˈhændrɪd ˈpiːpl mʌst hɛv bɪn draɪvən æwɛl frɔm ˈdɛɪr hʊmz
bæI ˈdɛz ˈnɒɪz/əɪ æm wʌn ɒf ˈðə fjuː ˈpiːpl ˈlɛft/ˈsʌmtaɪmz əɪ
fɪn k ˈdɛz həʊz wɪl biː 'nɒkɪd dəʊn bæI ðə pɛsɪn pley/əɪ hɛv
bɪːn ˈɔfɪd ˈlɛdz ðə 'lɑːrdz sʌn ɒf mənɪ tʊ goʊ æwɛl/bɔːt əɪ æm
detɜːmɪn ə ˈeɪn ˈdɛr ər prəʊˈbælɪ ˈreɪlt/
2 - (010) maed or not

/E'roUPleinz ar zloULI draIVIn mi: maedi/aI li:vi ni:3:in
EiroOpOrt aend pEsIn pleIns k'n bi: hĘrd (hi3:d)nait in deI/
EiroOpOrt was b'ilj djUrIn d'w or, b'at for sAm ri:zAN It
kou'd not bi: jusd deN/ IEst j3: haUEv3: It kEm IntU jus/Ov3:
' a hANDrid 'pIpI m'ast hEv bi:n draIV'n awel frOm deI hoUMIS
bAI d' seis ai aem wAN of d' pIpI lEft/sAMtaIMS ai thnk
dIs hasUS wi:1 bi: noUK daUN bAI a pEsIn plein/aI hEv bi:n'of3:i
lard' sAm of mO:ni tu gOU awel b'at aI aem deT3:MINd t' stel
hi:3/Evri'bodI sez aI m'ast bi:maedaen deI ar ProbAlI rwaIt/

3 - (020) maed or not

/E'ropleIN ar IsLOULI draIVIn mi: maed/aI li:vi ni:3 in
EroUpOrt aen pESInG pleIns kEn bi:Hi3: nait in deI/đI EropOrt
wz bAI dUrj d'var/b'at for sAm rAIzN It kou'd not bi:jus/3d
dEn/IEst j3:haUov3: It kAM IntU jus/ Ov3: a hANDrid pIpI m'ast
hAv bi:n draIV'n awel for deI hoUMs bAI de noisAI aem wAN
Of d' fju pIpI lEft/sAMtaIM ai thnk dIs hasUS wi:1
bi:kInoKid daUN bAI a pEsIn plein/aI hEv bin 'ofArid a lard'
sAm of mOni to gOU awel b'at aI aem deT3:'mind tu IStel
hi:3/EvriBoDI seIs aI m'ast bi:maed anddeI ar 'ProbAlI hAI/7

4 - (028)

/E'roUpLeIns ar IsLOULI draIVIn mi: mEd/aI li:vi ni:3:in
AIroUpOrt aend pEsInG pleIns k'n bi: h3: nait in deI/đI
EroUpOrt woz b'ilj diurin d'w or b'at for sAm rI:ZAN It kud
bi:nOt bi:jus/3d deN/ lEs i:3:haUi:v3: It keIM IntU ju:/Ov3:
' a hANDrid pIPi m'ast haeV bi:n draIV'n awel frOm deI hoUMz
bAI d' nois/aI aem no d' fju: pIPi lEft/sAMtaIMIs aI fink
dIs hasUS wi:1 bi:nOKid daUN bAI a pEsIn plein/aI hEv bi:n
ofAEd a 13:ď sAm of MONI tu gOU awel b'at aI aem deT3:'MINEd
tU Istel hi:3:/EvrībOdī seIs aI māst bi: maedI â ãõI ar prāblI haiItâ/

5 - (038) maed Or nOt

6 - (050) meIdâ Or nOt
/aIropleIns ar 'IsloULI dri:viN mi:meIdâ/ aI li:v ni:3:ān aIrpoRt ân pEsiç plEinS kān bi: h1:3:d nait ân deI/ãI aIrpoRt wos bïlt du:riç â PI war bät foR som ri:zon It kūd nOt bi: ju:zd dEn/LEst i:3: oUv3: It kēm IntU jus/oUv3: â hāndrād pi:pl māst haev bi:n draIVān awei frōm ãIIr houMs baI ãI nois/aI em wâN of ãI fjU:pi:plâs LeFt/soMItaÎmIs aI tãnk ãIs houS wi:l bi: noUKâd daUn baI â pEsiç plEin/aI haev bi:n oufēd â lârd¥ sâmOf mōNI tU gOU awei bät aI Em dI'tErMIÎnEd tu steI hi:3:/EvrībâdI seIs aI māst bi:meIdâ aen ãõI ar prōbablI haitlâ/

7 - (061)
bai də noIZ/aI aem wAn Of də fju: pi:pl lEft/sAmtaImIs aI
tink dIs haUs wi:l bi:noUKi:d daUn bai ə pesIn plEn/aI haev
bi:nOUfEd a lard¥ sAn Of mAnEi tu gou awei bAt aI aem
dIt3:MiNid tu stei hi:3:/EvrIBoDi seIs aI mAst bi: meId
aen dEi ar prOBalI rwaIt/

8 - (071)
/aEropleIns ar fOrII dri:vin mi:meIdə/aI li:v ni:3 ən
airIpOrt ənd peisin pleIns kən bi: hi:3:d naIt ənd deI/
dI aIrIpOrt waz bi:lt dUrIn. də wOr bAti for sAn ə rei:zin
It kuDə nOt bi:jus:zəd dEn/leSt i:3: haUV3: It keIm InTu
ju:zə/Ovə ə hAndrId pi:pl mAst haev bi:n drIVän aweiIs frOm
dEIr hoUms bai də noIS/ aI aem wAm Of də fju: pi:pl
lEft/sAmtaImIs aI tInkə hIs haUzi wi:l bi: knO:kId daU bai
ə peIsIn plein/aI haev bi:n OfrEd ə lard¥ sAn of mAnI tu
goU 'awei bAt aI aem dItErMInEd tu IsteI hi:3:EvrIBoDi
seIs/aI mAst bi meIdə ənd dEi prOBalI haIta/

9 - (084)
/EroUplens arIsloULI draIVIn mi: mEdI/aI li:v ni:3 aen
ErpOrt aend pEsIn pleIns kən bi: hi:3:d naIt ənd deI/ErpOrt
woz bi:lt draIn də wOr bAt ə for sAn ə son Is kuD
nOt bi:jus dEn/leSt i:3: haUV3: It kəm InTu jus/OUv3:ə
hAndrId pi:pl mAst haev bi:n draIV au3: frOm dEIr hoUms
bai noUZ/aI əm Of dən fju pi:pl ə lEft/sAmtaImIs aI tInk
dIs haUs wi:l bi:kə'noKi:d daUn bai ə pEsIn pleIn/aI ə
hauv bi:n 'OfErId a lard¥ sAn ə moneI tu gou awei bAt aI aem
dI'tErMInEd tu IsteI hi:3:/EvrIBoDi seIs aI mAst bi:med
ənd dEi ar prOBalI haIIta/

10 - (095) meId Or nOt
/aIroplens ar sLoULI draIVIn mi: meId/aI li:v ni:3:in
aErOport and pEsIn pleIns kın bi: h3:d naIt ánd deI/dI aIroport wOz bi:lt dUrIn ʃ wOr bAt for sÀm hi:zán It kUd nOt bi:ju:zd dEn/lEst i:3: haUOV3: It keIm iNTU ju:s/OUV3: ə hÀndrId pi:pl mÀst haev bi:n drIvìn awei frOm deIr houMs bAI:ʃ noIs/aI aem On Of ʃʃ fju:pi:pl 1eFt/ sÀntaImS aI tInk ʃS hoUS wi:l bi:'kOnEkT daUn bAI ə pASIn pleIn/aI haev bi:n Of3:d a lardʃ sÀm OfI mÀnEt tu goU awei/bAt aI aem dIt3mInd tu IsteI hi:3:/ EvrIbOdI seIs aI mÀst bi:meIdI aend ðeI ar prObalI rwait/

11 - (101) maedI Or nOt

/EropleIn ar slaUlI draIvi:n mi: mEdI/aI li:v ni:3:aen ErOpOrt aend peiSIn pleIns kın bi: h3:d naIt án deI/dI ErOpOrt wOz bi:lt dUrIn ʃ wOr bAt for sÀm ri:son It kUd nOt bi: juzd dEn/lEst i:3: haUEV3: It keIm INtu ju:zí/OUV3: ə hÀndrId pi:pl mÀst hiv bi:n draIvìn 'aweI frOm der houMs bAI ʃ noiz/aI aem wÀn Of ʃʃ fju: pi:pl 1eFt/sÀnTaImS aI tInk ʃS haUz wi:l :bi:nOkád daUn bAI ə peiSIn pleIn/aI haev bin OfIrEd ə lardʃ sÀm Of mÀnEt tu goU awei/bAt aI aem det3:mUneId tu steI hi:3:/Ev3:bOdI seZ aI mÀst bi:mEdI aend ðeI ar prObalI rait/

12 - (119)

/ErpleIns ar zloLI draIvi:n mi: mEdI/ aI li:v ni:3: án InpOrt aend pasIn pleIns kEn bi h3:d naIt án deI/dI ErpOrt wOs bi:ltI djUrIn ʃ wOr bAt sÀm rIzán Is ká nOtbi juzd dEn/lEst i:3:haUEV3:In kÀm INtu Uzí/ OUV3: ə haUnDrádI pi:pl mast haev bin draIvìn awei frOm deIr hozi bAI ʃ noIsI/aI ám won Of ʃʃ fju: pi:pl 1eFt/sÀnTaImS aI tInk ʃS haUs wil bi:nOkádaUn bAI ə pEsIn pleIn/aI haev bIN Of3: a lardʃ sa of mOneI tu go awei bAt aI aem dIt3:mUneId tu IsteI
EIÈrpleIs ar IslOlI draIVn mi maed/aI li:v ni:3:aen EroPort aend pasIn pleIs kän bi hEr rd naIt ånd deI/deI EroPort wOS bült dju:rIn de war bÅt for sÅM hi:žÅn It ko1 nOt bi Uzåd dEn/LeSt i:3:haUEV3: It keIm IntUzå/Ov3: å hÅndrEd pipl mÅst haev bin draIVn awel frOm deIr homz bai de nUz/aI aen On Of de fju: pipl z 1Eft/ sÅmtaImIs aI tInks dIs hauz wil bi kåNoktàd dâu bai å pasåIn preI/aI haev bin oFårdEd å larg såN of mâÅle tÅ gU aweI bÅt aI aem det3:'minEd tÅ IsteI hi:3:/EvrIbOdi sëIS aI mÅst bi maed ånd deI ar probåblI rwåIt/

14 - (140) maed Or nOt
/EroUpleIns ar sloUli draIVn mi: maed/aI li:v ni:3 aen EroPort ånd pasåIn pleIns kän bi: h3:d naåIt ån deI/deI EroPort wåz bilt dårÎ de war bÅt for sÅM ri:žåN It kuåd nOt bå ju:åz dEn/last wi:k hauœEvå:It keIIm Intu:ziI /OU3: a hÅndråd pipl mÅst haev bin draIVn aweI frOm deIr houMs/aI aem wåN of de fju: pipl z 1Eft/såmtaImIs aI tInk deIs haåus wil bi: nokåd dåuN bai å pasåIn preåIn/aI haev bin oufå: å largå såM of mâåle tÅ guO aweI/båt aI aem dI't3:âminåd tÅ steI hi:3:/hevrIbOdi sëIS aI mÅst bi maed ånd deI ar probåblI rwåIt/

15 - (156) maed Or nOt
/EroUplanz ar IsloUli draIVn mi: maed/aI li:v ni:3: aen EroPort ånd pësåIn pleIns ken bi h3:d naåIt ån deI/deI EroUport wås bilt djúrÎn de war bÅt for sâMåri:žåN It kuådånåt bå ju:åz dEn/LeSt i:3: haUEVå:It keIIm IntU jûz/ouVå: a håndrEd pipl mÅst haev bin drå:VåN aweI frOm deIr houMIs/aI aem wåN of de fju: pipl z 1Eftå/såmtåImIs aI fÎnkå deIs haåus wil
bi: nökït daun bai ë pesïn pleïn/al haev bin ofïrid a lardë
sAm of mAnI tu goU aweI/bât aI aem dit3:miïnIdë tu steI hi:3/
EvrIbAdI seI s aI móst bi maed ènt ñeI ar prObabI rwaIt/
Eva's group: tape no 2

16 - (175) maed Or nOt
/EruïpënIns ar sIoulI dRïvIn mi: maed/aI l1v ni:3:aen
ErpOrt ënd pesïn pleïns kën bi: h3:d naït àn ñeI/ðI ErpOrt
wiz bïld ðRïp ñwor bât för sAm ri:zän It kûd no bi: ju:zd
ñEn/Iëst i:3: haUEv3: It keIm intU ju:z/oUv3: a hândrïd
pi:pl mëst haev bi:n dRïvän awei frïm ñeIr houMs bai noïz/
aI aem wânof ñ gu:pi:pl leSt/ 'sAMtalïms aI thInk ñIs haUs
wi:l bi: 'nökïd daun bai ë pesïn pleïn/aI haev bi:n 'ofï3:d
ë lardë sAm of mAnI tî goU awei bât aI aem dit't3:miïn tî steI
hi:3/EvrIbOdI sës aI mëst bi:maed än ñeI ar prObabI raiIt/

17 - (184) maed Or nOt
/EruïpënIns ar sIoulI dRïvIn mi: maed/aI li:v ni:3: aen
ErpOrt ënd pesïn pleïns kën h3:d naït àn ñeI/ðI ErpOrt wðs
bïld ðRïp ñwor bât för sAm ri:zän It kûd nOt bi:ju:zd
ñEn/Iëst ji:3: haUEv3: It keIm intU ju:s/oUv3: a hândrïd
mëst aev bi:n dRïvän awei frïm ñeIr houMs bai ña noïz/aI aem
wânof ñ gu:pi:pl leSt/sAMtalïms aI thInk ñIs haUs wi:l bi:
nökïd daU bai ë pesïn pleïn/aI haev bi:n 'ofï3:d ë lardë sAm
Of muni tu goU awei bår aI aem dit3:miïn tî steI hi:3/
EvrIbOdI sës aI mëst bi: maed än ñeI ar prObabI raiIt/

18 - (194) maed Or nOt
/EruïpënIns ar sIoulI dRïvIn mi: maed/aI li:v ni:3:aen
ErupOrt aënd pesïn pleïns kën bi: h3:d naïtin ñeI/ðI ErupOrt
wiz bïl ðRïp ñwor bât för sAm rl:zän It kûd nOt bi:
ju:zd ñEn/Iëst i:3:haUEv3: It keIm intU ju:z/oUv3: ñ
hAndräd pi:pl mänst haev bìn drIvän aweI fröm ßeIr hOuMz
baI ß noIIZ/aI aem wän Of ß fju: pi:pl 1eft/ 'sAmtaImz aI
tIÎnk ßIs hauZ wî:l bî: 'nÖkåd dâUn baI ì pesIn pleIn/aI aëv bî:n
Of3:d ì lårðY sän Of mänI tû gouv aweI bät aI aem di't3:mind
tî stëI hî:3:/EvriBûDû sës aI mänst bî: maed ân ßeI ar
probâblI râIt/

19 - (203) maed Or nOt
/EvropôleInz ar ßIsLÜLI draîvIn mi: maed/aI li:v:nî:3 aen
ErpÕrt ìnd pesIn pleIns kîn bî: h3:d naït ân diE/dI Erpõrt
wOz bÎld dûrin ß wor bät fîr sâm rî:zän It kûd nOt bî:
ju:zd ßEn/1Est i:3: hauVEV3: It keIm IntU ju:zi/ouV3: ì
hûndríd pî:pl mänst haev bî:n drîvän aweI fröm ßeIr hOuMz
baî noIz/aI wOz Of ß fju: pi:pl 1eft/ sAmtaImz aI tînk ßIs
hauz wî:l bî: 'nÖkåd dâUn baî ì pesIn pleIn/aI haev bî:n
Of3:d ì lårðY sän Of mänI tû gouv aweI bät aI aem di't3:mIeIId
tî stëI hî:3:/EvriBûDû sës aI mänst bî:maed ân ßeI ar probâblI
râIt/

20 - (213) maed Or nOt
aÉropôlan ar ßloUII draîvi:n mi:maedÎ/aI li:v nî:3:aen
Erpõrt ì pesIn pleIns kîn bî: h3:d naït ân diE/dI Erpõrt wOz
bÎld dûrin ß wor bät fîr sâm rî:zän It kûd nOt bî:ju:zdâen/
1Est i:3: hauVEV3: In keIm IntU uzI/ouV3: ì hûndríd pî:pl
mänst haev bî:n draîvän aweI fröm ßeIr hOuMz baî ß noIz/aI
aem wän Of ß fju: pi:pl 1eft/somtaImz aI tînk ßIs hauz wî:l
bî nÖkåd dOÎn baî ì pesIn plæIn/aI haevbî:n 'Of3:d ì lårðY sän
Of mänI tî gôt aweI bät aI aem di't3:maÎnd tî stëI hî:3:/
EvriBârI sës aI båst bî:maed ân ßeI ar probâblI rwaît/

21 - (225)
/EvropôleInz ar ßloUII draîvi:n mi: maed/aI li:v nî:3:ß
ErpOrt and pEsIn pleIns kän bi: hårA naIt än deI/ðI ErpOrt
woz bïld dUrIn ɔ wor bát för sAm ri:zän It kUd nOt bi:
ju:zd dEn/lEst i:3: haUEv3: It keIm IntU juzI/oUv3: ɹ ɹ hAndrid pi:p1 mÄst haev bi:n drтивän aweI from ɹIr hoUmz
bai ɹ nOiz/ai aem wän Of ɹ fxu:pi:p1 1Eft/sAmtaiMs ai ɹInk
ɹIs haUz wi:l bi: nökäd daUn bai ɹ pEsIn pleIn/ai haev
bi:n 'Of3:d ɹ lardY sAm Of mÄnI: tu gou aweI bát ai aem
dì't3:mÄnd tI stel hi:3:/EvrIbOtI sEs ai mÄst bi:maed ân ɹIr ar probabI rait/

22 - (234) maed Or nOt
/ErpleIns ar sloULI driva:n mi: maed/ai li:v ni:3:aen
ErpOrt and pEsIn pleIns kän bi: h3:d naIt än deI/ðI ErpOrt
woz bi:ld dju:rIn ɹ wor bát för sAm ri:zän It kUd nOt
bi:ju:zd dEn/lEst i:3: haUEv3: It keIm IntU juzI/oUv3: ɹ ɹ hAndrid pi:p1 mÄst haev bi:n drтивän aweI fróm ɹIr hoUmz
bai ɹ nOiz/ai aem wän Of ɹ fxu:pi:p1 1Eft/sAmtaiMs ai ɹInk
ɹIs haUz wi:l bi: nökäd daUn bai ɹ pEsIn pleIn/ai haev bi:n
'Of3:d ɹ lardY sAm Of mÄnI: tu gou aweI bát ai aem dì't3:mÄn
tI stel hi:3:/EvrIbOtI sEs ai mÄst bi: maed ân ɹIr ar probabI rait/

23 - (245) maed Or nOt
/ErpleIns ar sloULI driva:n mi: maed/ai li:v ni:3: aen ErpOrt
aen pEsIn pleIns kän bi: h3:d naIt än deI/ðI ErpOrt wös bïld
dju:rIn ɹ wa:r bát för sAm ri:zän It kUd nOt bi:ju:zíd
dEn/lEst i:3: haUEv3: It keIm IntU hjus/oUv3: ɹ ɹ hAndrid pi:p1
mÄst haev bi:n drтивän aweI from ɹIr hoUmz hai ɹ nOis/ai
aem wän Of ɹ fxu: pi:p1 1Efs/sAmtaiMs ai ɹInk ɹIs haUs wi:l
bi: nökäd daUn bai ɹ pEsIn pleIn ai haev bi:n Of3:d ɹ lardY
sAm Of mÄneI tu gou aweI bát ai aem det3:'maInd tI stel
sAm Of mänI tu gou bår aI aem dlt3:mInâd tâ steI hi:3:
EvrIbOdI seIz aI mäst bi maed ân ñâI ar probablI râIt/

27 - (291) maed Or nOt
/EruUpleIns ar sloUI draÎvin mi maed/aI li:v ni:3: aen
ErpOrt ând pEsIn pleIns kän bi h3:d naIt ân ñâI ErpOrt
woz bîlt dur â wor bât for sâm rîzân It kûd nôt bi: juzd
dEn/ 1Est i:3:haUEv3: it keIm ñtU juz/ouV3: â händrid pîpl
mäst haev bin draÎvän awei frâm ñëIr hEûmz bai ña noIz/aI
aem wän Of dî fju pî:pl lef/sAmtaImIs aI tînk ñIs haUz wil bi: 'nôkäd
daUn bai â pEsIn plaIn/aI haev bin 'Of3:d â lardY sAmOf
mänI tu gou awei bAt aIaem dI't3:mInâtû steI hi:3:/EvrIbOdI
sEs aI mäst bi maed ân ñâI ar probablI râIt/

28 - (301) maed Or nOt
/EruUpleIns ar sloUI draÎvin mi:/maed/aI li:v ni:3:aen
ErpOrt ând pEsIn pleIns kän bi:n 3:d naIt ân ñâI ErpOrt
woz blÎd durin ñâ wor bât for sâm rîzân It kûd nôt bi:
juzd ñEn/1Est i:3: haUEv3: It keIm ñtU juz/ouV3: â
'hândId pî:pl mäst haev bi:n draÎvän awei frâm ñëIr houMs bai
ñâ noIs/aI aem wän Of ñâ fju pî:pl lef/sAmtaImIs aI tînk ñIs
haUz wil bi: nôkäd daUn bai â pEsIn pleaIn/aI haev bin 'OfârEd
â lardY sAm Of mänI tu gou awei bAt aI aem dI't3:mInâd tâ
steI hi:3:/EvrIbOdI sEs aI mäst bi maed ân ñâI ar probablI
râIt/

29 - (313) mêId Or nOt
/EruUpleIns ar sloUI draÎvin mi: mêId/aI li:v ni:3: aen
ErpOrt ând pEsIn pleIns kän bi h3:d naIt ân ñâI 'ErpOrt
woS bîld durin ñâ wor bât for sâm rîzân It kûd nôt bi:
juzd dEn/1Est i:3: haUEv3: It keIm ñtU juz/ouV3: â hândrId
pî:pl mäst haev bi:n (draÎvän) draÎvän awei frôm ñëIr houMz
baI dI noiz/aI aem wAn Of $@ fju pi:pl lEft/sAmtaIms aI tInk $@ is haUz wi:l bi: ki'noK daUn baI $@ pEsIn pleIn/aI haev bi:n 'Of3: $@ lard$ sAm Of mAnel tu goU awei bAt aI aem di't3:min$@d tu steI hi:3:/EvriBoDi seIs aI mA$@t bi: meI$@d in $@I ar prObabIi raiIt/

30 - (327) maed Or nOt

/ErpleIns ar sloUiI draVI:n mi: maed/aI li:v ni:3: aen ErpOrt end pEsIn pleIns kIn bi: h3:d nalt in deI/$@ hErpOrt woz bIlt djurIn $@ wOr bAt for sAm ri:zin it kod nOt bi hjuzd deN/leSt i:3: haUEv3: it keI$@nU juz/oUv3: $@ Andrid pi$@pl mA$@t haev bin draIVn awei frOm $@Ir hoUmz baI $@ noIs/aI aem wAn Of $@ fju piUpl lEft/sAmtaIms aI tInk $@ is haUz wi:l bi: noI$@d daUn baI $@ pEsIn pleIn/ aI aev bin 'hoF$@rid $@ lard$ sAm Of mAnel tu goU awei bAt aI aem di't3:min$@d tu steI i:3:/EvriBoDi seIs aI mA$@t bi: maed in $@I ar prObabIi raiIt/

31 - (341)

/Erplans ar sloUiI draVI:n mi: maed/aI li:v ni:3: aen ErpOrt end pEsIn pleIns kIn bi: h3:d (hIrd) nalt in deI/$@ ErpOrt woz bIlt djurIn $@ wOr bAt for sAm ri:zin it kud nOt bi: hjuzd deN/leSt i:3: huEv3: it kam IntU juzi/oUv3 $@ hAndrId pipl mA$t haev bin draIVn awei frOm $@Ir hoUmz baI $@ noIs/aI aem On Of $@ fju pi:pl lEft/ sAmtaIms aI tInk $@ is haUz wi:l bi: noI$@d daUn baI $@ pEsIn pleIn/ aI aev bin oFerId $@ lard$ sAm Of mAnel tu goU awei/bAt aI mA$@t di'tErMinEd tu steI hi:3:/ EvriBoDi seZ aI mA$@t bi: maed in $@I ar prObabIi raiIt/

Rosana's group Tape n° 1

32 - (014) meId Or nOt

/aEroUplans ar sloUiI draVI:n mi:meId/aI li:v ni:3 aen EroUpOrt end pEsIn pleIns kIn bi: h3:d naltI in deI/$@
EroUpleIn woZ bulT I durln çà war bååt for såm hi:son it koûd
not bi juzåd ðEn/Est i:3: haUovëEr it keIm IntU juzå/oUv3+
å håndrId pi:pl måst haev bi:n draâvån awei fråm çeIr hoûms
bål çà noiz/ai aem wån of çà fju pi:pl 1eft/sâmtaïms aI ßInk
cIs haUs wi:l bi:kI'nokåd dûn bål å pasIng pleÎn/ai haev
bi:n 'Ofärend å 1eg sâm Of mânI tu gou awei bååt aI aem
dît3:moÎnd tu steï hi:3/EvrÎbaâI seIa aI måst bi: mEdÎ in
cêI ar prوبةblI raît/

33 - (024)
/EiroRupleIns ar sloUlI draâvIn mi-meldI/aI li:v ni:3:aen
EiroUpOrt ånd pësIn pleIns kân bi: h3:d naÎt in deI/cI
aIouUpOrt woZ bÎlt dûrin çà war bååt for sâmå rizån it kudånO
bi:juzå ðEn/Est i:3: haUEv3: it keIm IntU juzå/oUv3: å
håndråd pi:pl måst haev bi:n draâvån awei fråm çeIr hoûms bål
çà noUzi/ai aem wån of çà fju pi:pl 1eft/sâmtaïms aI ßInk cIs
haUs wi: bi: noUkEd daûn bål å pësIn pleÎn/ai haev bi:n
oUfärend å lardy sâm Of mânI tu gou awei bååt aI aem dît3:mÎned
tu steï hi:3/EvrÎbaâI seIa aI måst bi: maed in cêI ar
proûbabblI raît/

34 - (040)
/arplains ar sloUlI dri:vi+n mi: maêd/ai li:v ni:3+aen
Eîrport ånd pësIn pleIns kân bi hêrd naît in deI/cI ErîrOrt
woz bi:l t dûrin çà wôr bååt for sâmå hi:zon it kuåd nóI bi:
juyåd ðEn/Est i:3: ouEv3: it keIm IntU juzå/oUv3: åndrîå
pi:pl måst haev bi:n draâvån awei fråm çeIr hoûms bål çà
nOås/ai aem on of çà fju:pi:pl 1eft/sâmtaïms aI fiÎk cIs
haUs wi:1 bi: kîNoû daûn bål å pësIn pleÎn/ aI haev bi:n
oUfråd å lardy sâm Of mânI tu gou awei bååt aI aen dît3:mÎned
tu steï hi:3/EvrÎbôdí seIa aI måst bi: maed in cêI ar
proûbabblI raît/
bi:n Ofirld 1Er2\Y\ 3\s\n\ Of\ mOnI\ tu\ goU\ aweI\ b\at\ aI\ aem
dit3:min\ tu\ steI\ hi:3:/EvrIbOdI\ seIs\ aI\ mit\ bi:\ maed\ in
\f\l\ ar\ prObI\ rait/

38 - (090)
/alEroUpleIns\ ar\ zloULI\ dri:vi:n\ mi:\ maed/aI\ li:b\ ni:3:aen
aIrPort\ ind\ pasIn\ pleIns\ k\n\ bi:\ hErld\ nalt\ \n\ deI/\f\ aIrPort
was\ bUI\ djutIn\ f\ wOr\ b\at\ for\ som\ rEson\ it\ kou\d\ noT\ bi:
Uz\d\ dEn/leSt\ i:3:\ hoUEv3:\ it\ k\m\ intU\ Uzi/Ov3:\ i\ h\ndrId
pi:pl\ m\st\ hEv\ bi:n\ draIV\n\ aweI\ frOm\ \f\Er\ hoUmz\ bai\ f\ noUs/aI
aem\ On\ Of\ f\ fju\ pi:pl\ li:f/s\ntaIms\ aI\ tInk\ fIs\ hoUsI
wi:l\ bi:\ noUkEd\ daUn\ bai\ i\ pasIn\ pleIn/aI\ haev\ bi:n\ oUF\rd\ i
1Er2\ s\Am\ Of\ monI\ tu\ goU\ aweI\ b\at\ aI\ aem\ dit3:'mIned\ tu\ steI\ her/
EvrIbOdI\ seIs\ aI\ m\st\ bi:\ maed\ in\ \f\l\ ar\ prObabI\ rait/

39 - (106)\ meIdI\ Or\ noT
/alEroUplein\ ar\ zloULI\ draIV\n\ mi:\ meldI/aI\ li:v\ ni:3: aen
ErPort\ ind\ peIsIn\ pleIns\ k\n\ bi:\ h\rt\ naiIt\ \n\ deI/\f\ ErPort
wOs\ bIIt\ djurIn\ f\ wOr\ b\at\ for\ s\Am\ ri:zin\ Of\ kou\d\ noT\ noT
bi:\ juz\ dEn/\ leSt\ i:r\ hanoUv3:\ it\ keIm\ intU\ juzI/ouv3:\ i
h\ndrEd\ pi:pl\ m\st\ haev\ bi:n\ draIV\n\ aweI\ frOm\ \f\Er\ h\Ums
beI\ f\ noSIs/\ En\ w\n\ Of\ f\ fju\ piPl\ leFt/s\ntaIms\ aI\ fInk
fIs\ haUs\ wi:l\ bi:\ noUkEd\ daU\ bai\ i\ peIsIn\ plen/aI\ haev\ bi:n
oUF\rd\ i\ lard\ s\Am\ Of\ moneI\ tu\ goU\ aweI\ b\at\ aI\ m\m\n\ dit3:mIned
tu\ steI\ hi:3:/EvrIbOdI\ seIs\ aI\ m\st\ bi:\ meIdI\ in\ \f\l\ ar
prObI\ rait/
Limericks Sounds /I//i/:  
There was a young lady whose chin  
was pointed and looked like a pin  
People said it had been  
In a sharpening machine  
So she pricked them while grinning a grin.

Here is the limerick with the words underlined, both  
/ae/ and /e/:  
There was an old lady who said  
When she found a thief under her bed  
It's a good sleep you've had  
but you'll feel very bad  
When you've got a strong cold in your head.

Sounds /o:/ and /3:/  
There was a young person from Perth  
Who was born on the day of his birth  
He was married on the fourth  
to a girl from the North  
And he died when he entered the earth.

Sounds /ʃ/ and /t/:  
A witless young lady from Crewe  
Said, don't leave me, to her boy-friend, I'm true!  
I'll pay all your debts  
and live a thousand deaths  
to be with you all my life through

From: Shepherd, DAVID. Language Laboratory Assignment.  
STRESS AND RHYTHM

Sheet no. 2.

1.  (a) along; affect; America ) a
    open; sentence; higher ) e
    easily; density; responsible ) i
    consult; secondary; motor; pronounce ) o
    suggest; column; leisure ) u as /ɪ /
    policeman; policemen

   (b) damage; luggage ) unstressed
    behind; added; noises; loses; biggest ) a,e,i,u
    being; intend; tacit ) as /ɪ /
    minute )

   N.B. women

2. 'aeroplane 'classroom 'museum 'grandfather
       'advertise 'demonstrate 'cardboard 'headmaster

3. Stress as a phoneme:
   (a) i. Who lives in the 'White house?
    ii. Who lives in the white 'house?

(b) We have a new 'English teacher - she's Brazilian:
    We have a new English 'teacher - she teaches music.
(c) Which man is the head 'hunter/headhunter?
(d) Meet me at the green 'house/greenhouse.
4. Sentence-stress:

(a)  i. 'What is your'name?
   ii. 'Where do you'live?
   iii. 'How do you'do?
   iv. Is it far from Curitiba to the 'sea?

5. Stress-timing:

16-17-18-19-20-21-22-23
97-98-99-100-101-102-103
H,I,J; K,L,M,N,O,P,Q,R,S.

'Look at that'fish! If it'hadn't'moved, I'wouldn't have
'nnoticed it.

There is a'mountain of 'work'waiting to be 'done.
## English Word-Stress Patterns

**Sheet no 3.**

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Text</th>
</tr>
</thead>
</table>
| 1. '
| --
| --
| better finish subtle distance |
| 2. '--
| --
| above decide lament usurp |
| 3. '---
| --
| difficult wonderful exercise |
| 4. '--
| --
| phonetics disaster perfection |
| 5. ,--'--
| --
| coincide correspond understand |
| 6. '----
| --
| difficulty lamentable architecture |
| 7. '-
| --
| unanimous biographer fatality |
| 8. ,--'
| --
| understanding conversation energetic |
| 9. ,--'--
| --
| harlequinade hullabaloo |
| 10. ',--'--
| --
| electioneer commissionaire |
| 11. '------
| --
| disciplinary figuratively |
| 12. '-
| --
| inevitable constabulary |
| 13. ,--'
| --
| relativity perpendicular |
| 14. ,--'--
| --
| modification aristocratic |
| 15. '-'--
| --
| pronunciation materialistic |
| 16. '-
| --
| anticipatory expostulatory |
| 17. ',--'
| --
| argumentativeness existentialism |
| 18. ,--'--
| --
| etymological instrumentality |
| 19. ,--'--
| --
| familiarity ecclesiastical |
| 20. ',--
| --
| differentiation characterization |
| 21. ',--'
| --
| industrialization personification |
| 22. ',--'
| --
| superficiality artificiality |
| 23. ',--'
| --
| inevitability intelligibility |

**Exercise:** Write one more word in EACH category
BIBLIOGRAPHY


