

NEUZA GONÇALVES RUSSO*

A CONTRASTIVE ANALYSIS OF SOME SIGNIFICANT
PORTUGUESE AND ENGLISH PHONEMES

(UMA ANÁLISE CONTRASTIVA DE ALGUNS FONEMAS
SIGNIFICATIVOS DO PORTUGUÊS E DO INGLÊS)

(EINE KONTRASTIVE ANALYSE EINIGER WICHTIGER
PHONEMEN VOM PORTUGIESISCHEN UND ENGLISCHEN)

SUMMARY

This work deals with the description, distribution and classification of the English consonantal phonemes: /t/, /g/, /ð/, /l/, /cʰ/ and the vowel phonemes: /u/ and /ə/ and their contrast to the corresponding Portuguese Phonemes. Not only the contrast is shown but also the problems related to the learning of the above phonemes and their allophones by Portuguese speakers and some possible techniques and pieces of advice to minimize the problem.

RESUMO

Este trabalho trata da descrição, distribuição e classificação dos fonemas /t/, /g/, /ð/, /l/, /cʰ/ do Inglês e dos fonemas vocálicos /u/ e /ə/ e o seu contraste com os fonemas correspondentes do Português. Não somente a análise contrastiva é apresentada, mas também os problemas relacionados com o aprendizado destes fonemas por falantes do Português e algumas técnicas de ensino de pronúncia para minimizar o problema.

* Professor Assistente de Língua Inglesa do Departamento de Letras Germânicas da Faculdade de Letras da UFMG.

Before starting with the description, distribution and classification of the consonantal phonemes /t/, /g/, /ʒ/, /l/, /ç/, and the vowel phonemes /u/ and /ø/ in English and their contrast to the corresponding Portuguese phonemes, both English and Portuguese consonantal and vowel charts will be drawn, and some considerations concerning the contrast of two sound systems will be pointed out. Not only the contrast will be shown but the problems related to the learning of the above phonemes and their allophones by Portuguese speakers and some possible techniques and pieces of advice to minimize the problem will be presented. Throughout the work we will see that in learning the sound system of a foreign language one finds some sounds that are physically similar to those of the native language, that structure similarly to them, and that are similarly distributed. Learning of such phonemes occurs, as Lado states in *Linguistics across cultures*, by simple transfer without difficulty. On the other hand, one also finds sounds that are not part of the sound system of the native language, that structure differently, or that are differently distributed. Learning of these occurs slowly, and difficulty with them is more persistent. As an example of the latter, we have the English voiceless fricative /θ/ and its voiced homorganic /ð/ which constitute an important pronunciation problem for Portuguese speakers, due to the fact that these phonemes are absent from our sound system.

Even when the native language has a similar phoneme and the variants are similar, if it does not occur in the same position as in the native language, the learner will have trouble producing and hearing it in the position in which it occurs in the foreign language. So, as Mário Mascherpe points

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out in *Análise comparativa dos sistemas fonológicos do inglês e do português*, four areas of difficulty faced by Portuguese speakers when learning English must be discussed:

1. Phonological errors - there are phonemes in the language to be learned which have no correspondents in the phonological system of the learner's native language. By comparing English to Portuguese one may notice that in Portuguese there are no equivalents for the English phonemes /ç/, /ʃ/, /ə/ and /b/ among others. Portuguese /m/ and /x/, for instance, are absent from English.
2. Phonetic errors- there are comparable phonemes in the native language as well as in the foreign language, but they have different phonetic features. While English /t/, for instance, is apico-alveolar, Portuguese /t/ is dental.
3. Allophonic errors - corresponding phonemes in both languages present partially similar and partially different allophonic structures. English /p/, for instance, presents three distinct allophones [p^h], [p] and [p⁻], while Portuguese /p/ presents only one allophone [p].
4. Distributional errors - there are contrasts in the distribution of corresponding phonemes in both languages. English /m/, for instance, occurs in word final position, while Portuguese /m/ does not occur in such a position.

Therefore the comparison of each phoneme mentioned above

will include at least three checks: 1 - Does the native language have a phonetically similar phoneme? 2 - Are the variants of these phonemes similar in both languages? 3 - Are the phonemes and their variants similarly distributed?

Considering plosive sounds, then, we will notice that there is no possibility for phonological errors because both Portuguese and English present six stops or plosives, which are comparable: /p/, /b/, /t/, /d/, /k/, /g/. As to phonetic errors only /t/ and /d/ will present some problem, due to the fact that the English sounds have an alveolar point of articulation, while Portuguese /t/ and /d/ are dental. Another problem will be the pronunciation of /t/ and /d/ before /i/ because in this position in Portuguese they are pronounced /tʰ/ and /dʰ/ respectively. As to allophonic errors the voiced plosives /b/, /d/ and /g/ will present no great problem, since they are similar in both languages. The only problem being presented by [b̄] and [d̄] and [ḡ], as it will be shown later on in this work in relation to [ḡ]. The voiceless plosives and the voiced ones as well do not occur in final position in Portuguese. As a result the learner will tend to add a vowel after them in this position. This vowel is generally /i/. Words such as cap, will be pronounced */kɛp i/ and cat */kɛt̄ i/ or */kɛt̄ i/.

Another aspect to be dealt with is the clusters, that is, sequence of sounds formed by the consonantal phonemes to be studied in this work. Do these English clusters have any problem for Portuguese speakers? /θr/, for example, as in three occurs in English but does not occur in Portuguese. We can assume, then, that /θr/ will constitute a problem for Brazilian speakers learning English. Initial clusters such as the ones in stay and

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slave will offer a great difficulty, since they do not occur word initially in Portuguese. The speaker's tendency is to insert a vowel before them and in the case of slave, also transform /s/ into its voiced counterpart /z/, because after the insertion of /i/. /s/ is between two voiced sounds: */istey/, */izleyv/.

Let us now draw the two charts and try to compare them briefly before studying the sounds mentioned above in detail.

ENGLISH CONSONANTAL CHART

| Manner of Articulation | Position of Articulation | | | | | | |
|------------------------|--------------------------|--------------|--------------|----------|---------|-------|---------|
| | bilabial | labio-dental | inter-dental | alveolar | palatal | velar | glottal |
| Stop | p | | | t | | k | ʔ |
| | b | | | d | | ʔ | |
| Affricate | | | | | tʃ | | |
| | | | | | dʒ | | |
| Fricative | | f | θ | s | ʃ | | h |
| | | v | ð | z | ʒ | | |
| Nasal | m | | | n | | | |
| Lateral | | | | l | | | |
| Retroflex | | | | r | | | |
| Semi-vowel | w | | | | j | (w) | |

PORTUGUESE CONSONANTAL CHART

| Manner of Articulation | | Position of Articulation | | | | | |
|------------------------|----|--------------------------|--------------|--------|----------|----------------|-------|
| | | bilabial | labio-dental | dental | alveolar | palatal | velar |
| Stop | vl | p | | t | | | k |
| | vd | b | | d | | | g |
| Fricative | vl | | f | | s | s ^v | |
| | vd | | v | | z | z ^v | |
| Nasal | | m | | | n | ɲ | |
| Lateral | | | | | l | ʎ | |
| Vibrant | | | | | r | | |
| Semi-vowel | | | | | | j | w |

By comparing the two charts drawn above, we may observe that there are twenty-four consonantal phonemes in English including the semivowels /j/ and /w/; while in Portuguese there are twenty-one consonantal phonemes, also including the two semivowels. Both languages have the same number of stops or plosives, that is, /p/, /b/, /t/, /d/, /k/ and /g/. The sounds /p/ and /b/ have the same point of articulation in English and Portuguese, that is they are bilabial. /k/ and /g/ are velar in both languages. From the plosives only /t/ and /d/ have different points of articulation, while they are apico-alveolar in English, they are dental in Portuguese. One feature shared by English voiceless stops which the corresponding Portuguese plosives do

not present is aspiration, that is, a rather strong release of breath between the opening and the beginning of voicing for the following vowel. The amount of aspiration in /p, t, k/ is rather variable in most English dialects, but the variation is never significant and it may be nearly or entirely lacking in certain environments, such is the case of /p/ after /s/, e.g. spill /s pɪl/. The voiceless series /p, t, k/ tend to be pronounced with more muscular energy and a stronger breath effort than the voiced series /b, d, g/. The former are known as relatively strong or fortis, the latter as relatively weak or lenis.

The affricates /tʃ/ and /dʒ/ do not occur as phonemes in Portuguese. They are allophones of /t/ and /d/ respectively. As to the fricative consonants, Portuguese does not present the interdental /θ/ and /ð/. The sounds /s/ and /z/ have the same point of articulation, being alveolar in English and in Portuguese. /f/ and /v/ offer no great problems to a Portuguese speaker, since they have the same features and number of allophones. /ʃ/ and /ʒ/ are palatal in both languages. Both English and Portuguese have the same number of nasals, being English /ŋ/ different from Portuguese /ɲ/. /ŋ/ is a velar sound, while /ɲ/ is palatal.

Portuguese has two lateral phonemes: /l/ and /ʎ/, while English has only one: /l/.

The phoneme /r/ is retroflex in English but vibrant in Portuguese. The glottal stop /ʔ/ is also absent from the Portuguese phonological system. While Portuguese has a voiceless velar fricative /x/, English has a voiceless glottal fricative /h/. From the above phonemes only /t/, /g/, /ð/, /tʃ/ and /l/ will be dealt with in detail.

ENGLISH

1. The voiceless apico-alveolar stop.

/t/ = [t^h] ~ [t] ~ [t⁻] ~ [D]

PORTUGUESE

1. The voiceless dental stop

/t/ = [t] - /c^v/

English and Portuguese /t/ share some features. They are both oral voiceless stops but besides having different points of articulation, they have different allophones or variants. English /t/ is produced with the tip of the tongue touching the alveolar ridge and the soft palate raised. This phoneme presents four different variants or allophones [t^h]: aspirated; unaspirated [t], unreleased [t⁻] and flap [D]. The allophone [t^h] occurs in word-initial position, e.g. ten [t^hɛn], tall [t^hɔt]; in syllable-initial position before stressed vowels, e.g. attack [ət^hæk⁻], and in word-final position in free-variation with [t] and [t⁻], e.g. cat [k^hæt^h]. The allophone /D/ occurs between a stressed and an unstressed vowel, e.g. pretty [prɪdɪ]. [t] occurs in word-initial position after [s], e.g. still [stɪl̩]; in syllable-initial position before unstressed vowel, e.g. butter [bʌtər], and in word-final position in free variation with [t^h] and [t⁻], e.g. cat [k^hæt]. Unreleased [t⁻] occurs before another stop, e.g. football [fʊt⁻bɔɪ], and in final position in free-variation with [t^h] and [t], e.g. boat [bɔwt^h] ~ [bɔwt] ~ [bɔwt⁻].

The Portuguese voiceless dental stop is produced with the

blade of the tongue touching the upper teeth and the soft palate raised. It has only two allophones: [t] , which occurs before all vowels, except [i] , and / c^v/ , which occurs before [i] .

Let us first consider the allophone [t^h] . It does not exist in Portuguese. Portuguese speakers will not aspirate it, and use [t] in its place. As a result English speakers will hear [d] whenever [t^h] should occur. This is due to the fact that in English the aspiration neutralizes the voiced/ voiceless contrast. A native speaker interprets lack of aspiration as a mark of the lenis sound, in this case [d] . The danger is particularly great for speakers of Portuguese, where the opposition between lenis and fortis stops relies purely upon presence or absence of voice.

Examples: ten [t^hɛn] Port. * [tɛ̃]
time [t^hdɪm] Port. * [tɔɪmɪ]

As Lado points out in *Linguistics across cultures*

we have ample evidence that when learning a foreign language we tend to transfer our entire native language system 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.
(p. 11)

So, whenever teaching the allophone [t^h] to Portuguese speakers, besides emphasizing that its articulation in English is an alveolar one, made with the tongue-tip raised, while the corresponding unaspirated sound in Portuguese has a dental rather than an alveolar point of contact, special attention should be given to aspiration, because they will not be able to listen to it. They

should be told that this sound is produced with a rather strong puff of air, mainly when it occurs initially in an accented syllable. Gimson even suggests in *An introduction to the pronunciation of English*, "the adoption of affrication as a stage in learning aspiration of voiceless plosives in strongly accented positions " (p. 154). English and Portuguese words should be given so as to make the contrast quite clear. Lists of words such as the following would be useful:

| PORTUGUESE | ENGLISH |
|------------|---------|
| tempo | time |
| tablete | tablet |
| talento | talent |
| tarefa | task |
| taxa | tax |

As a technique to make the learners see the difference and produce the sound correctly, the pairs of words could be pronounced close to a lighted match and the students will see that only in the second case it is put out. Or they could be told to pronounce them with their mouths close to a mirror and they will notice that in the second case it becomes dull. To ask the students to pronounce the words with a sheet of paper close to their mouths would also fit the purpose because they will be able to see that the sheet is blown away from their mouths only when the English words are uttered. A similar technique is to ask them to put some little pieces of paper on their hands and pronounce the pairs of words with their mouths close to them. They will notice that the pieces of paper are blown out of their

hands when [t^h] is produced. Such a proceeding should be applied not only to show the difference in word-initial position but also in syllable-initial position, before stressed vowels.

Examples: attain - atingir
 attention - atenção
 eternal - eterno

[t] - This allophone corresponds to Portuguese [t]. Its distribution in English has already been mentioned in this work. Portuguese [t] occurs in word-initial position, e.g. teto [tɛtu], and in syllable-initial position, e.g. atado [atadu]. Portuguese speakers will have no problem in pronouncing this allophone since one calls their attention to its point of articulation, which is dental rather than an apico-alveolar one. So, the only problem here, will be the possibility of internal interference, once they have learned how to pronounce [t^h]. The distribution of [t] should be compared to that of [t^h]. Words containing [t^h] in word-initial position could be contrasted to words containing [t] after [s], where aspiration does not occur:

| | |
|--------------------|-------|
| [t ^h] | [t] |
| till | still |
| tough | stuff |
| tone | stone |
| tall | stall |
| take | steak |

Another contrast should be given: /t^h/ in syllable initial position before a stressed vowel and [t] in syllable initial

position before an unstressed vowel: attend and attack, for instance, contrasted to butter, letter, after, etc. As the allophone [t̄] does not occur in final position in Portuguese, the tendency will be to insert [i] after it, and then [t̄] becomes [t̄^v].

ENGLISH

tempest [t̄^hɛmpɛst̄]

PORTUGUESE

* [t̄ɛ̃pɛsɛ̃vi]

[t̄⁻] - This allophone occurs in word-final position and before another stop as it has been previously said. Ex. let [lɛt̄⁻], nut [nʌt̄⁻], let down [lɛt̄⁻dʌwn]. In cases like worked, the final t̄ should be released because it is after another stop, which is unreleased. The allophone [t̄⁻] does not exist in Portuguese. Whenever it occurs in English, Portuguese speakers will insert [i] after it:

ENGLISH

cat [kʰæt̄⁻]football [fʊt̄⁻bɔ:ɪ]

PORTUGUESE

cat * [kɛt̄^v] or * [kɛt̄^vi]football * [fʊt̄^vibɔw]

Drills should be devised and practised with the students so that they do not insert an [i] after [t̄⁻]. If a foreign learner aims at a near approximation of the speech of English natives he should adopt other features besides the ones mentioned above: a) inaudible release of plosives preceding other plosives or affricates; b) nasal release of plosives followed by a homorganic nasal, especially /t, d/ + / n /; c) lateral release of /t, d/ + / l /.

Flap [D] - This allophone occurs between a stressed and an unstressed vowel. Ex: water [wɔDəv]; letter [ʔɛDəv]; pretty [prɪDɪ /]. As it does not occur in Portuguese it should be intensively drilled so that Portuguese speakers do not substitute it for its close phoneme / r /.

[cʲ] - This Portuguese allophone occurs before [i], ex.: tia [cʲiə], at least, for some speakers. Their tendency, then, will be to use it instead of [t] whenever the English allophone occurs before [i] or in final position. So, the English word team will be pronounced * [cʲimɪ]. It would be useful to contrast English words containing [t] to Portuguese words containing [cʲ]. The learners could listen to the following words, then, repeat them:

| | |
|--------------|---------------|
| till [tʰɪʔ] | til [cʲɪlʲ] |
| team [tʰiym] | time [cʲimɪ] |
| tea [tʰɛɣ] | te [cʲɛ] |
| tick [tʰɪk] | tique [cʲɪkɪ] |

If the learners are not aware of this difference, words such as the following would be pronounced the same way: pit * [pɪcʲɪ]; pitch * [pɪcʲɪ]; peach * [piçɪ]; pity * [pɪcʲɪ]. There would be the tendency not to distinguish tease from cheese, which would also be pronounced the same way * [cʲɪzɪ].

A good exercise to practise all the allophones of / t / would be the reading of sentences emphasizing the sound, such as:

1. Tom teaches art to technical students.
2. Try the tongue-twister about the flute tutor.

Another excellent exercise to drill not only all the consonantal and vowel sounds but also to practise rhythm and intonation at the same time is the reading of lengthening sentences. A lengthening sentence emphasizing / t / would be:

*I was quite put off. I was quite put off my appetite.
To tell the truth, I was quite put off my appetite.
To tell the truth. I was quite put off my appetite
by terrible tales. To tell the truth, I was quite put
off my appetite by the terrible tales he told of
torture."* (BARNARD, p. 102)

Let us now turn to the phoneme / g /.

ENGLISH

PORTUGUESE

2. The voiced velar plosive. 2. The voiced velar plosive.

/ g / = [g] - [g⁻] / g / = [g] - [Ø]

The English voiced velar plosive /g/ presents the allophones [g] and [g⁻], while in Portuguese we have only the allophone [g], which occurs in word-initial and word-medial position: gato [gatu]; agosto [agostu].

The allophone [g⁻] occurs in final position and before another stop. As examples of the first position, we have: tag [t^hæg⁻] and leg [lɛg]. Lagged [lægd] begged [bægd] and eggcup [ɛg⁻kəp] are examples of the second position mentioned. The unaspirated [g] occurs elsewhere, ex. game [geɪm]; again [əgeɪn].

As the allophone [g⁻] does not occur in Portuguese, and the English [g] corresponds exactly to [g] in Portuguese,

Brazilians will have no difficulty in pronouncing this sound correctly. The only problem will be the insertion of [i] after it in final position due to the absence of such a sound in final position in Portuguese. So, a word like tag will be pronounced * [tɛgi] , while the tendency to pronounce eggcup will be * [ɛgikʌpi].

The devoicing of [g] in final position would offer a different kind of problem. Speakers should avoid excessive voicing of the lenis series /b, d, g/, especially in this position. But in spite of lacking a great degree of voicing in such a position, learners should be told that the preceding sounds retain full length. Brazilian speakers would have difficulty to distinguish final [g] from final [k], unless the context is quite clear. Sentences like "Here's a good lock" and "Here's a good log" would present a great deal of difficulty if the speaker were not told that the lenis [g] is distinguished from its fortis counterpart in final position by the reduction of length of the sounds preceding [k]. A good exercise would be the listening and repetition of words such as:

log - lock
 rug - ruck
 lag - lack
 pig - pick
 league- leak
 dug - duck
 bag - back
 hack - hag

Reading of the following lengthening sentence would be a good exercise on the sound / g /: "He got a bag of sugar. He got

a bag of sugar and some pegs. He got a bag of sugar and some pegs and grapes. He got a bag of sugar and some pegs and grapes from the grocer and gave them to his grandmother in Guernsey."

(BARNARD, p. 114)

The following phoneme to be contrasted is / ð /.

ENGLISH

3. Voiced interdental fricative

/ ð / = [ð]

PORTUGUESE

3. Voiced interdental fricative

/ θ / = / θ /

The voiced interdental fricative / ð /, which has only one allophone [ð], occurs in all positions in English: word initial, as in: this [ðɪs], they [ðeɪ]; word medial, as in: father [fɑðə], gather [gæðə]; and word final, as in: clothe [kləʊð]; with [wɪð]. This phoneme is absent from Portuguese, and experience shows that when the foreign language uses a phoneme which does not exist in the learner's native language, that is, when there is no phoneme in the native language that could be transferred to the foreign language and actually function as the phoneme in question, the student will have trouble hearing as well as producing the new phoneme readily in learning the foreign language. He will substitute some other phoneme from his native stock. So, as Portuguese has no / ð /, Portuguese speakers will replace it, using [d], [z] or [v], which are close to [ð] in their

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point of articulation, bringing about what is called a phonological error. A word like they / ðeɪ / will be pronounced *[d eɪ], *[z eɪ] or [v eɪ], but there would be a preference for the first one *[d eɪ]. In order to avoid such a mistake Brazilian speakers should be told that these sounds have different points of articulation, while [ð] is interdental, [d] is dental, [z] is alveolar and / v / is labio-dental. They should listen and repeat groups of words containing these sounds. Useful lists would be:

| / ð / | / d / | / ð / | / z / | / ð / | / v / |
|--------|-------|----------|--------|-------|-------|
| they | day | breathe | breeze | thine | vine |
| then | den | bathe | bays | live | lithe |
| there | dare | seethe | sees | than | van |
| those | doze | writhing | rising | that | vat |
| though | dough | lathe | laze | thee | v |
| | | clothe | close | thou | vow |

Out of these lists several different exercises can be done. The teacher can read the first column, then the next one, making the students repeat after him. He may also choose the same word or different words from the columns / ð / and / d /, for instance, so that the student says same or different. He may also say a word and the student is supposed to give him the number of the column it comes from. Sentences emphasizing the sound / ð / could also be listened to and repeated. These sentences should be structurally simple as to rhythm and intonation so that the learner focus his attention mainly on the production of the sound being studied. The following would be good examples: 1 - You know Aunt Jane. She's my father's mother's

brother's cousin!

2- Honour thy father and mother.

3- The boy's bathing was against the father's wishes.

The difficulty of / ð /, and also of its voiceless homorganic / θ /, lies not so much in their articulation, which most learners can perform correctly in isolation, as in their combination with other fricatives, especially [s] and [z]. Learners should, therefore, practise drills containing such combinations involving rapid tongue glides, e.g. / s + ð /: pass the salt; / z + ð /: is this it?; / θ + s + ð /: Smith's there; / ð + z + ð /: soothes them; etc.

The next phoneme to be contrasted is / l /.

ENGLISH

4. Alveolar lateral

/l/ = [l] - [l̥] - [l̥̥]

PORTUGUESE

4. Alveolar lateral

/l/ = [l] - [l̥] - [θ]

Only one alveolar lateral phoneme occurs in English, there being no opposition between fortis and lenis, voiced and voiceless, or fricative and non-fricative. Within the /l/ phoneme three main allophones occur:

1. Light or clear [l] , with a relatively front vowel resonance, before vowels and / j /.

Ex.: a) word initial: leave [l i v]

- b) word medial: silly [s i l i]
 c) word final, intervocalic in context: feel it [f i y l i t]

2. Dark [ɤ], with a relatively back vowel resonance, finally (in a pre-junctural position) after a vowel, before a consonant, and as a syllabic sound following a consonant.

Ex.: a) word final, after vowel: feel [f i ɤ], call
 [k h ɔ ɤ]

b) after vowel, before consonant: help [h ɛ ɤ p],
 cold [k o w ɤ d]

c) syllabic: middle [m i d ɤ], table [t h e y b ɤ]

3. Voiceless [ɰ], following accented (aspirated) / p, k / (less considerable devoicing occurs after / s, f, θ, sʰ / or weakly accented / p, t, k /.

Ex.: plane [p h ɰ e y n]; fly [f ɰ a y]

Portuguese /l/ presents two allophones [l] and [lʷ]. The allophone [l] is the voiced alveolar lateral, which occurs in syllable initial position, syllable medial position and syllable final position immediately followed by a vowel within the same word. As examples we have: lado [l a d u]; falar [f a l a r], claro [k l a r u], alegria [a l e g r i a], etc. The allophone [lʷ] is the velarized voiced alveolar lateral, which occurs in syllable final position immediately followed by a consonant within the same word and in word final position.
 Ex.: mil [m (lʷ)]; algo [a lʷ g u]

There will be no phonological error concerning / l / because it occurs in both languages, but the teacher should call

the learner's attention to the fact that while in English the sound /l/ is produced with the tip of the tongue touching the alveolar ridge, in Portuguese the front part of the tongue touches the alveolar ridge.

Portuguese speakers will have no problem in pronouncing the clear [l], because English syllable-initial [l] is fairly similar to Portuguese [l], which occurs in word-initial position and word-medial position. The problem will be the dark [ɫ] in word final position, after vowel, or before consonant, due to the fact that most Portuguese speakers will pronounce a velarized [lʷ]. Velarization is so great, here, that some speakers will use the semivowel /w/ instead of [lʷ]. Then, being the opposition mal - mau; vil - viu in Portuguese neutralized, these pairs of words will become homonyms. So, when speaking English, Portuguese learners will tend to do the same and pronounce feel [fiɫ], for instance, as *[fiʷ], or even [fiw]; cold [kʰoʷɫd] as *[kʰoʷd] or [kowd], (being the words cold and code pronounced the same way); and help [hɛɫp] as *[hɛʷpi] or [hɛwpi].

Therefore, besides calling the learner's attention to the fact that in English [ɫ] in these positions must be uttered as a consonantal sound rather than as a semivowel, intensive drills should be done until this phoneme is produced correctly. Before beginning to drill the sound /l/ before vowels, the teacher should call the learner's attention to the fact that in spite of being similar to Portuguese /l/, the point of articulation is different. He will present lists of English and Portuguese words containing this sound, e.g.:

| ENGLISH | PORTUGUESE |
|---------|------------|
| late | leite |
| list | lista |
| lack | leque |
| lord | lorde |

The learners are supposed to listen to then and then repeat in chorus and individually. Sentences emphasizing the sound could also be drilled, e.g.:

1. She'll like looking at the lilies in the lake.
2. He had long legs and leapt easily into the saddle.
3. Look at him wallowing in the lake like a crocodile in the Nile!

The same procedure may be applied for the recognition and the production of dark [ɤ]. The learner should be told not to use a semivowel instead of the alveolar sound.

For the syllabic dark / ɤ / the tendency is to replace it for a diphthong. The word table, for instance, will be pronounced * [tɛybow].

Gimson points out in *An introduction to the pronunciation of English* that care should also be taken to use a sufficiently devoiced / l / after accented (aspirated) / p, k /. Accented / p, k / are distinguished from / b, g /, mainly by their aspiration; it is important that this aspiration should be made clear in the sequences / pl, kl / by the voicelessness of the / l /. If this is not done, such a word as plot, pronounced with a fully voiced / l /, may be understood as blot. Pairs for practise, relying largely on the opposition: voiceless versus

voiced [l] are: plot - blot; plead - bleed: plight - blight;
clad - glad; class - glass; clue - glue.

We shall now go on with the phoneme / c^v/.

ENGLISH

5. Voiceless palato-alveolar affricate

/ c^v/ = [c^vʃ]

PORTUGUESE

5. Voiceless palato-alveolar affricate

/ θ / = [θ]

The phoneme [c^vʃ] in English is a fortis voiceless palato-alveolar affricate, which occurs in word-initial, word-medial and word-final position. As examples of word-initial position, we have: cheese [c^viːz], chin [c^vɪn] and choke [c^voʊk̃]. The words feature [fɪçəvər] and richer [rɪcɪvər] exemplify the phoneme / c^v/ in word-medial position; and wretch [rɛtʃ] and catch [kætʃ] in final position. It should be told that the fortis / c^v/, when final in a syllable, has the same effect of reducing the length of preceding sounds as was noted for / p, t, k /, while comparatively full length of preceding sounds is retained before [j^v]. This effect must be taken as a primary distinctive feature of the [c^vʃ] - [j^v] opposition in final position.

/ c^v/ does not occur in Portuguese as a phoneme, but as an allophone of / t / before / i / as was pointed out before. Therefore, there is a possibility of phonological error. The learner will tend to substitute this phoneme for the one which

is closer to it in Portuguese: / S^v/ . So, words such as cheap will be pronounced [S^v ɨ p] instead of [C^v i y p] . Such an error causes a greater problem: the neutralization between sheep and cheap; shop and chop, for instance. Moreover, there will be the insertion of / i / after [c^v] in final position. The learner will pronounce catch, for instance, as * [K E ɨ v i] . He should be advised not to do so. Particular attention should also be paid to the shortening of sounds preceding [c^v], which could be done with pairs of words containing both / c^v/ and / j^v/ in final position, so that the learner could contrast:

large - larch
 ridge - rich
 lunge - lunch
 edge - etch
 cadge - catch

Moreover, sequences of affricates should be practised, care being taken to pronounce the fricative elements of both affricates. Ex: which chair; Dutch cheese, etc.

When teaching the phoneme / c^v/, a useful drill would be to contrast / c^v/ and / s^v/ because some learners have difficulty to distinguish both sounds. Pairs of words and sentences such as the following could be listened to and repeated:

| / c ^v / | / s ^v / | |
|--------------------|--------------------|-----------------------------------|
| chins | shins | She's watching the baby |
| chore | shore | She's washing the baby. |
| chip | ship | |
| match | mash | The ditch was full of dirty water |
| catch | cash | The dish was full of dirty water. |
| watch | wash | |
| witch | wish | |

Interesting exercises can be done out of these lists. The teacher can, for instance, pronounce some pairs of words or sentences and ask the learner to say if they are same or different. He may also point to one word and pronounce it and the student should say right or wrong.

Before starting with the contrast of the English vowel sounds / ə / and / ʌ / to the corresponding Portuguese sounds, the English and Portuguese Vowel Charts will be drawn and some general considerations concerning both vowel systems will be made.

THE ENGLISH VOWEL CHART

| | Front | Central | Back |
|------|----------|----------|----------|
| High | i [ɪ] | ɪ | u [ʊ] |
| Mid | e [ɛ] | ə [ʌ] | o |
| Low | æ | ɑ | ɔ |

THE PORTUGUESE VOWEL CHART

| | Front | Central | Back |
|------|-------|---------|------|
| High | i | | u |
| Mid | e | | o |
| Low | ɛ | ɔ | ɔ |

Celso Cunha presents, in *Gramática do português contemporâneo* (1978), a more detailed vowel chart, including reduced and nasal vowels:

| Point of Articulation | | Front | | Central | | Back | |
|-------------------------------------|---------|-------|--------|---------|--------|-------|--------|
| Role of the Nasal and Oral Cavities | | oral | nasal | oral | nasal | oral | nasal |
| Raising of tongue | | | | | | | |
| High | close | / i / | / ĩ / | | | / u / | / ũ / |
| | Reduced | / e / | / ẽ / | | | / o / | / õ / |
| Mid | close | / ê / | / ễ / | | | / ô / | / ỗ / |
| | Open | / é / | | | | / ó / | |
| Low | Close | | | | / ǎ / | | |
| | Open | | | / a / | | | |
| | Reduced | | | / ǎ / | / ǎ̃ / | | |

Let us first define a vowel phoneme and mention the three elements which a description of a vowel must include. Vowels are generally voiced sounds produced in a continuous stream of air through the pharynx and mouth, with no obstruction and no narrowing such as would cause audible friction. Instead, the mouth passage is shaped into resonant chambers according to the different positions of the tongue and the lips. Those positions are only approximate. They vary considerably according to phonetic environment and also from dialect to dialect.

A description of vowel-like sounds must note:

1. the position of the soft palate - raised for oral vowels, lowered for nasalized vowels;
2. the kind of aperture formed by the lips - degree of spreading or rounding;

3. the part of the tongue which is raised and the degree of raising.

Considering these elements we will see that English has nine vowel phonemes: [i], [e], [ɛ], [æ], [ə], [ɔ], [ʊ], [o], [ɔ], [u]; while Portuguese has seven oral vowels: [i], [e], [ɛ], [a], [o], [ɔ] and [u], and five nasal vowels: [ĩ], [ẽ], [ã], [õ], [ũ]. From these only English /ə/, a mid central vowel and /u/, a high back vowel will be contrasted to Portuguese.

ENGLISH

1. The mid central vowel

/ə/ = [ə] - [ʌ]

PORTUGUESE

1. The mid central vowel.

[ø] = [ø] - [ø]

The vowel /ə/, which is called schwa, has a very high frequency of occurrence in unaccented syllables. Its quality is that of a central vowel with neutral lip position. It has two allophones [ə] and [ʌ]. /ə/ occurs before [r] and in unstressed position. Ex.: about [əbaʊt], writer [raɪtə]; bird [bɜ:d]. [ʌ] occurs elsewhere, ex.: sun [sʌn]; month [mʌnθ]. The first problem a Portuguese speaker encounters in relation to the mid central vowel schwa is that this phoneme is absent from the Portuguese vowel system. He will tend, then, to pronounce it rather like a half-close /e/, pronouncing the word bird, not as [bɜ:d] but as *[berd]. The word number, for instance, is pronounced *[nʌmber]. Another problem is that /ə/ may be spelt with most vowel letters and their combinations, being difficult for the learner to recognize the vowel. It may be spelt with the letters i, e, a, o, u and

their combinations: ar, er, or, ou, our, ure. etc. As examples we have: possible [p^hɔsəb^lɪ] ; gentlemen [dʒ^hentlmən]; woman [wʊmən]; oblige [əblayʒv]; suppose [səpəʊ]; particular [p^hɜːtɪkɪlə]; mother [mʌðə]; doctor [dɔk-tə]; famous [feɪməs]; colour [k^hʌlə]; figure [fɪgə]. It is most frequently in opposition either with zero vowel, e.g. about, bout; waiter, wait or with unaccented / i /, e.g. affect, effect. In addition, it should be noted that / ə / is normal in common unaccented weak forms of such words as a, an, the, to, for, from, but, and, etc..

The learner should be advised that English / ə / has no lip-rounding and is extremely short so that he has no problem producing this sound. In particular the learner should note those syllables of a word containing / ə /, remembering that it is a sound which occurs very frequently in English and that observation of the unaccented syllables of a word is as much a part of the word's accentual pattern as the stress expended on the accented syllables.

Before starting to drill the vowel sound / ə /, the learners should be reminded that this sound does not occur in Portuguese and must not be substituted for any Portuguese vowel. They should listen to words and sentences containing the sound and then repeat them. A useful exercise would be to contrast / ə / with English / ɔ / and / e / so that the students could see the difference. English words containing / ə / and Portuguese words containing / ɔ / could also be contrasted, e.g.:

| ENGLISH | PORTUGUESE |
|---------|------------|
| love | lave |
| us | as |

| | |
|---------|----------|
| but | bate |
| assist | assistir |
| America | América |

Texts must also be listened to and read so that the learners may practise the weak forms containing / ə /.

Now let us turn to the high back vowel / u /.

ENGLISH

2. The high-back vowel / u /
/ u / = [u] - [ʊ]

PORTUGUESE

2. The high-back vowel / u /
/ u / = [u] - [ø]

The English high back vowel / u / has two allophones [u] and [ʊ]. The allophone [u] which occurs before [w], e.g. food [f u w d̩], is a back close vowel, but the tongue raising is released from the closest position and is somewhat advanced from true back; its relationship with [ʊ] is similar to that between [i] and [ɪ], the articulation of [u] being tense compared with that of [ʊ], though no firm contact is made between the tongue and the upper molars. The lips tend to be closely rounded.

The allophone [ʊ], which occurs elsewhere, e.g. book [b ʊ k], put [p ʊ t̩], is pronounced with a part of the tongue nearer to centre than to back raised just above the half-close position; it has, therefore, a symmetrical back

relationship with the front vowel / ɪ /; the tongue is laxly held (compared with the tenser / u /), no firm contact being made between the tongue and the upper molars. The lips are closely but loosely rounded. This vowel occurs in both accented and unaccented syllables, being present in the accented syllable of a relatively small number of words. though some of these are of common occurrence, e.g. put, good, look, would, etc. / ʊ / does not occur in word initial positions nor before final / ŋ / and finally only in the unaccented form of to / tʊ /.

The Portuguese oral high back vowel / u / has only one allophone [u], which occurs in all positions in Portuguese. Ex.: urubu [urubu]. English [u] is higher and tenser than Portuguese / u /, and English / ʊ / is lower and more lax than Portuguese / u /. As a result Portuguese speakers will not distinguish between the English allophones [u] and [ʊ], using the Portuguese vowel in both places, neutralizing, this way, the phonemic contrast that exists between minimal pairs such as Luke - look, and pool - pull.

Ex.: fool [fuwɪ] , full [fʊɪ]

Port. * [fuɪ]

More difficult is the relationship of [u] before a voiced sound, reduced [u] before a voiceless sound and [ʊ] as in: food [fuwd̃], boot [buwt̃], (reduced [u]), and foot [fʊt̃]. So, pairs of words containing both [u] and [ʊ] should be listened to and repeated by the learners so that they may grasp the difference. The following would be a useful list:

| | |
|-------|-------|
| [u] | [ʊ] |
| fool | full |
| pool | pull |
| cooed | could |
| who'd | hood |
| Luke | look |

Exercises such as the ones described for the contrast of consonantal sounds can be done out of this list. The speaker should also drill words containing full and reduced [u].

| | |
|----------|---------------|
| Ex.: [u] | [ʊ] (reduced) |
| rude | root |
| lose | loose |
| use (v) | use (n) |

A very important point the learner should be aware of is that nasal resonance within words or at word boundaries, resulting from anticipating or prolonged lowering of the soft palate in the vicinity of a nasal consonant may occur: a) within word: possible slight nasalization of vowel following / n / in now, of vowel preceding / m / in ham and / n / in and; of vowel between nasal consonants in man, men, innermost; and of short vowels on each side of the nasal consonant in any, sunny, summer, singer, etc.; b) at word boundaries: vowels may sometimes be nasalized somewhat by the boundary nasal consonant of an adjacent word, especially when an adjacent nasal consonant also occurs in the word containing the vowel, e.g. the first / ə / in bring another, or / ɪ / in come in, and also, without an adjacent nasal consonant in the word containing the vowel (usually unaccented),

e.g. / ə / in come along, wait for me, etc. In spite of that learners should know that these nasal consonants must be uttered as such, not only as symbols of nasalization as in Portuguese. Unless the learners' attention is called to this problem, their tendency will be to pronounce the word soon, for instance, as * [sũ] and woman as * [wumã]. So, drills containing the nasal vowel [ũ], for instance, in Portuguese and the vowel [u] plus a nasal sound in English, may be practised:

| PORTUGUESE | ENGLISH |
|-----------------------------|-----------------------------|
| atum [atũ] | tomb [t ^h uwm] |
| pum [pũ] | spoon [spuwn] |
| rum [rũ] | whom [huwm] |
| álbum [a ^l vũ] | boom [buwm] |
| zuzum [zũzũ] | zoom [zuwm] |

After having compared the English consonantal sounds / t /, / g /, / ð /, / l /, and / c^v / to Portuguese, we shall now go on with the comparison of English and Portuguese clusters formed by some of these phonemes. Generally English presents consonantal clusters formed by two or three consonants in initial position while in Portuguese there are no initial clusters formed by three consonants. Initial clusters formed by three consonants will be a problem to Portuguese speakers not only because they are absent from Portuguese, but because in this case / s / is always the first element. Then the learner will insert a vowel before this phoneme. The word straw [strɔ], for instance will be pronounced * [istrɔ]. It is interesting to note that when / s / is followed by a voiced sound, besides the addition of

/ i /, there will be its voicing: ex. small [smɔ ±], becomes [iZmɔw]. Final clusters formed by three or even four consonantal sounds will be greatly difficult for Portuguese speakers for such clusters do not occur in Portuguese, not even in initial position. ex. / ɫfθ / twelfth; / rɪd / world; / mpts / attempts; / rst / burst; / rts / quartz. Final clusters resulting from the addition of plural morphemes, present and past morphemes are far more difficult for Portuguese speakers, mainly because they will not know if the plural morpheme will be / s /, / z / or / ɪz /, and the past morpheme / t /, / d /, or / ɪd /, ex. / ks / books; / gz / legs; / kt / talked; / nd / opened.

Let us begin with the clusters formed by / t / and another consonant. We will find the following clusters in initial position: / ts / tsetse; / tr / tray (some phoneticians consider / tr / a complex phoneme); / ty / tube; / tw / tweed; / st / stand; / str / strew; / sty / student. / tr / will also occur in mid position, e.g. attract [ət^hræktɪ]. / tl / will not occur in initial position, but only in mid position e.g. atlas [ətɪləs]. Among final clusters we will have: / ts / tents; / nt / print; / pt / script; / ts / blitz; / kst / text; / dst / midst; / ɪst / whilst; / mpt / tempt; / ɟkt / instinct. As to Portuguese, clusters occur only in syllable initial position, never in syllable final position. Only two types are found and the first element is either a plosive or / f / and / v / and the second / r / or / l /. In relation to / t / we have only / tr /, which will be found in initial and mid positions, e.g. trama, traço, retrato. / tl / will occur only in mid position, e.g. atleta. / g / forms initial clusters

with / l /, / r / and / w /, for instance: / θl / glow; / gr / grass; / ʝw / Gwendolen. The plural morpheme may form clusters with words ending in / g /, e.g. / ʝz / legs. Another cluster is formed by / g / and the past morpheme / d /, e.g. / ʝd / begged. In Portuguese there are two clusters with / g /: / ʝr /, which occurs in initial and mid position: grama, grosso, agravar; and / ʝi /, which occurs only in initial position: e.g. glacial, glória.

The phoneme / θ / does not form clusters in initial position. We will only find clusters with / θ / in final position: / θmz / rhythms; / θz / clothes; / θd / writhed. Since Portuguese has no interdental fricative, there are no clusters with / θ /.

There are a lot of clusters in English formed by / l /. In initial position we have: / bl / blow; / gl / glad; / spl / splice; / fl / fly; / sl / slow; / pl / play; / kl / clean. In final position we have / lt / belt; / lk / milk; / lb / bulb; / ld / weld; / lc^v / beltch; / lʃ^v / bulge; / lf / self; / lθ / health; / ls / false; / lz / walls; / rl / curl, etc. Portuguese has no clusters with / l / nor with / c^v /. while English presents only a few final clusters with / c^v /, e.g. / nc^v / bunch; / rc^v / search. Intensive drills should be done so that Portuguese speakers may master English clusters in all positions. An important oral exercise on consonantal clusters would be the repetition of words containing clusters beginning with the sound / s /, e.g. sport

step

student

spirit

snob

The learner should be told not to insert a vowel before / s /. He could begin by uttering a sequence of / s / and then complete with the word: sssssport.

The above list could be compared to the corresponding words in Portuguese, so that the students could notice the difference:

| | |
|---------|-----------|
| sport | esporte |
| student | estudante |
| spirit | espírito |
| snob | esnobe |

Another important drill is the one which consists of words ending in / t / and / d / as past morphemes:

| | |
|------------|---------|
| Ex.: / d / | / t / |
| called | wished |
| robbed | helped |
| longed | crossed |
| clothed | watched |

Considering that the clusters / r l / and / r l d / are absent from Portuguese, that the phoneme / l / is difficult for Portuguese speakers and also that a sequence of three consonants as is the case of the second consonantal group, does not occur in Portuguese, intensive drills should be done so that the learners may master these clusters. Lists of words containing these clusters should be listened to by the learners with subsequent individual repetitions:

| | |
|-----------|---------|
| Ex.: girl | world |
| earl | hurld |
| pearl | curled |
| hurl | snarled |

curl

snarl

Considering the English and the Portuguese phonemes contrasted in this work, it is worth noting that there are similarities but important differences between them, mainly in terms of point of articulation, allophonic variations and their distribution. Some of these points will present greater difficulty for Portuguese speakers as is the case of the phoneme / θ /, which is absent from Portuguese. Learners will have, consequently, difficulty in recognizing and producing this sound. Another important pronunciation problem presented here, is shown by the feature aspiration, also absent from the Portuguese phonological system. The allophone / t / is another great problem for Portuguese speakers. Both vowels studied, here, also offer a serious problem, due to the English distinction [u] and [ʊ], absent from Portuguese, and [ə] in connected speech. This situation, however, may be minimized if the teacher is aware of all these areas of conflict, if his attention is frequently called to the phonological, phonetic, allophonic and distributional errors the learner will tend to make, if he has previously acquired a good knowledge of the phonological system of the learner's native language, and if adequate exercises are devised and presented to the students followed by clear, precise and simple explanations concerning both phonological systems. Moreover, as Gimson points out in *An introduction to the pronunciation of English* (1970), a foreign speaker of English may be generally intelligible without adopting these features, such is the redundancy of information carried in the English utterance. But

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the foreign learner who aims at a near approximation of the speech of English natives should try to adopt all of them.

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ABSTRACTS