

BRITISH ENGLISH VOWELS (FREQUENCY OF OCCURRENCE)

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It has already been stated that the selection of phonological items to be included in the teaching of pronunciation must be based on various criteria (Montero, S. and Vivanco, C., 1975). The most important of these, as far as vowels are concerned, are: a) interference of the Spanish phonological system; and b) frequency of occurrence of the items*.

Interference has been the subject of several studies, while the frequency of occurrence has been neglected. Thus, investigating the latter seemed to be of particular interest and usefulness.

I took some dialogues, recorded by native speakers of British English (RP), and analysed the vowels used in them. These dialogues are employed for teaching purposes at the English Section, Modern Languages Department, University of Chile, Santiago. These texts are a good sample of the type of English our students, mostly future teachers of English as a Foreign Language, are faced with.

The investigation I am describing covered approximately 17,200 words, reaching a total of 20,000 vowels**.

*When dealing with the pronunciation of English consonants, other factors must be considered. Among these, distribution is specially relevant.

**In 1976 a group of our students made a first attempt at working on RP vowels. They covered a limited sample: 1,500 vowels and 2,300 consonants. The members of this group were Miguel Soto, Pilar Troncoso and Inés Wiegand.

Table I shows the frequency of occurrence of each RP vowel and glide. The results of Prof. Fry's study (Fry, 1947) are also included in it, so that the reader can compare them. A. C. Gimson's symbols are used throughout (Gimson, 1970).

An analysis of the data provided in Table I will show that the percentages given by Fry and those in our study are considerably similar. The percentages corresponding to twelve vowels vary less than 1 point; those corresponding to six vowels vary more than 1 but less than 2 points. These eighteen vowels constitute 90% of our sample. Consequently, there are two sounds in which Fry's figures and ours differ more noticeably. These are /ɪ/ and /ə/. For /ɪ/ Fry gives 21.24% and we record 18.35%. The difference is, then, 2.89. For /ə/ Fry gives 27.39% and we have 20.55%. The difference is greater this time: 6.84.

It is significant that the greatest difference is found in the most frequent vowels. It is a well known phonetic characteristic of English vowels in unstressed position that they are reduced more radically than unstressed vowels in other languages*** and that in unstressed

***See Delattre, 1969, who gives the following percentages of vowel reduction in four languages: English, 17.78%; French, 8.69%; German, 6.39%; Spanish, 3.65%.

See Vivanco, 1976, for vowel reduction in Spanish and English.

T A B L E I

VOWEL	VIVANCO		FRY
	out of 20,000 vowels	%	%
i:	1,178	5.89%	4.20%
ɪ	3,670	18.35%	21.24%
e	1,432	7.16%	7.57%
æ	1,004	5.02%	3.69%
ɑ:	472	2.36%	2.01%
ɒ	956	4.78%	3.49%
ɔ:	646	3.23%	3.16%
ʊ	342	1.71%	2.19%
u:	906	4.53%	2.88%
ʌ	992	4.96%	4.46%
ɜ:	228	1.44%	1.32%
ə	4,110	20.55%	27.39%
ɛɪ	770	3.85%	4.36%
əʊ	1,144	5.72%	3.85%
aɪ	1,262	6.31%	4.66%
aʊ	390	1.95%	1.55%
ɔɪ	30	0.15%	0.35%
ɪə	254	1.27%	0.53%
ɛə	148	0.74%	0.86%
ʊəɪ	6	0.03%	0.15%
	20,000	100.00%	100.00%

positions it is usual to find /ə/ or /ɪ/ almost exclusively. A. C. Gimson states:

“It will be seen that totally unstressed syllables are associated particularly with vowels of a central or centralized quality (or a syllabic consonant), i.e. /ə/, /ɪ/, and /ʊ/ (though [ʊ] in a weak situation is normally replaceable by /ə/ or may be reduced to /w/ before a following vowel)”. (Gimson, 1970).

With respect to this point the two generativists, Chomsky and Halle, 1968, indicate:

“We have referred several times to the well-known fact that lax vowels reduce to

a central, high, or mid unrounded “neutral” vowel in English when they are sufficiently weakly stressed, in some way that must be made explicit. We have been representing this neutral vowel as [ə]. The exact phonetic realization of [ə] does not concern us. For any particular dialect, the feature specifications and the appropriate phonetic rules can be established. For ease of exposition, we simply make the assumption here that [ə] is distinguished from all other vocalic segments”.

Daniel Jones, 1962, defines a weak form in this way:

“A weak form of a word is generally distinguished from a strong form either by a difference of vowel-sound, or by the absence of a sound (vowel or consonant), or by the difference in the length of a vowel. When the forms differ in vowel quality, it is generally found that the weak form has ə where the strong form has some other vowel”.

R.-M. S. Heffner, 1969, shares the point of view already mentioned, when he says:

“In English almost all unstressed vowels tend to become [ə], though certainly not all of them arrive at that end as yet. Many speakers preserve something of the quality of the stressed vowel in the unstressed syllables of words like *affliction*, *adult*, . . . , *enfold*, *explode*, or use an unstressed [ɪ] rather than [ə] in words like *deceit*, *define*, . . . , *added*, *credit*. The vowel [ə] is as nearly an unarticulated vowel sound as is to be found in human speech, and it seems to be used by most languages in some, at least, of their unstressed syllables”.

The fact that both /ə/ and /ɪ/ occur in unstressed syllables and that both can be elided if the vowel reduction goes a step further, makes it possible to have variations in

the frequency of occurrence of these sounds. The type of language we analysed was colloquial and fast. In many cases the reduction of a vowel meant its elision, as in the case of "rather a bother", which was pronounced /rɑ: ðrə bððə/ instead of /rɑ: ðərə bððə/, or in "history", pronounced /histrɪ/.

It is pedagogically important to consider the facts as presented in Table II. In this Table the vowels are ordered according to the frequency of their occurrence in the two analyses under study.

Table II shows that in both counts the same four sounds occupy the first four places.

They are positively the most frequent vowel sounds in English and must be given special importance when selecting and grading the phonological items to be included in a syllabus or lesson. The addition of the individual frequencies of occurrence of /ə, ɪ, e, aɪ/ gives 60.86 (Fry) and 52.37 (Vivanco), thus constituting more than half of the vowel sounds in any English utterance.

Both studies are similar at the bottom of the list, as well. The eight least used sounds according to both authors are the same, all of them with a frequency of occurrence under 3%.

TABLE II

VIVANCO		FRY	
VOWEL	%	VOWEL	%
ə	20.55%	ə	27.39%
ɪ	18.35%	ɪ	21.24%
e	7.16%	e	7.57%
aɪ	6.31%	aɪ	4.66%
i:	5.89%	ʌ:	4.46%
əʊ	5.72%	eɪ	4.36%
æ	5.02%	ɪ:	4.20%
ʌ	4.96%	əʊ	3.85%
ɒ	4.78%	æ	3.69%
u:	4.53%	ɒ	3.49%
eɪ	3.85%	ɔ:	3.16%
ɔ:	3.23%	u:	2.88%
ɑ:	2.36%	ʊ	2.19%
ɑʊ	1.95%	ɑ:	2.01%
ʊ	1.71%	ɑʊ	1.55%
ʒ:	1.44%	ʒ:	1.32%
ɪə	1.27%	ɛə	0.86%
ɛə	0.74%	ɪə	0.53%
ɔɪ	5.15%	ɔɪ	0.35%
ʊə	0.03%	ʊə	0.15%

The aim of this brief investigation has been to provide the teacher of English with information which he can use to give more or less importance to some phonological items. It is frequent to find syllabuses and texts which distribute sounds along the units as if they were equally important.

The teacher must not forget, nevertheless, that the frequency of occurrence of the sounds is only one of the criteria he must take into consideration when he organizes his teaching material. The degree of difficulty that the individual sounds present to our students is another one. For instance, while /e/ and /aɪ/ are relatively easy for Spanish speakers as there are similar vowels in this language, /ə/ and /ɪ/ are extremely difficult to recognize and produce.

He can take our contribution as additional information to help him in the selection of items to be included in a syllabus or unit and in the grading of these items. The more information a teacher can handle, the better he will perform his job.

