On Using the Phonemic Script in Language Teaching

Mark Hancock

Preface

My aim in this article is to examine the issue of whether or not to use the phonemic script in the language classroom. I began looking at this question in the context of two language classes I had who were preparing for an entrance test to enter the Air Traffic Control training school in Madrid. The English component of this test comprises a listening and an interactive section. Of the listening section, a large proportion of the marks are accounted for by a set of minimal pair discrimination exercises, perhaps reflecting the degree of aural accuracy required of air traffic controllers. Consequently, I found myself having to investigate methodological issues at the level of segmental phonology at a time when the mainstream of thought in pronunciation teaching was moving towards supra-segmental phonology. While the needs of these classes with regard to pronunciation skills are clearly rather specialized, I hope to show in this paper that the issue it addresses is of more widespread importance in language teaching.

1 Introduction

1.1 A place for segmental phonology in language teaching

The choice of whether or not to use a phonemic script in the language classroom has been a classic problem in EFL methodology fore a good many years. Abercrombie (1956:89) observes that its use in instruction was advocated with zeal at the end of the last century by practitioners anxious to rectify the previous neglect of the spoken language. Enthusiasm has waxed and waned since then, but more recently, the question has been somewhat eclipsed by a general shift of interest away from segmental phonology towards supra-segmental phonology. This shift may be attributed to the idea that intelligible pronunciation depends more on rhythm and intonation than on individual sounds (Byrne & Walsh 1973). Indeed, it can be shown that in fluent speech, native speakers do not articulate the individual sounds in a word unambiguously. Sounds are often changed or missed out altogether so that the listener must infer them from the context (Dirven & Oakeshott-Taylor 1984). Those, words like ‘below’ and ‘blow’ may be indistinguishable in connected speech.

While it is welcomed that segmental phonology has been put in perspective by these insights, we must be wary of drawing hasty conclusions for EFL methodology. The teaching of individual sounds is of obvious importance, even if it is no longer in primary position in the pronunciation syllabus. Language learners, unlike native speakers, cannot rely on their supra-segmental (rhythm and intonation) pronunciation to provide the support that makes individual sounds redundant. Furthermore, research reported by Nunan (1993:104) suggests that mastery of the sounds of the target language is a high priority for most learners. Thus, the question of the pedagogical usefulness of the phonemic script is still very much on the agenda.

1.2 Approaches to using the phonemic script

The phonemic symbols used in this paper are those of the International Phonetic Association (IPA) as modified by Gimson (1962); this script is widely used in coursebooks and dictionaries. The term 'phonemic script' (henceforth IPA) is used here to refer to the set of symbols used to characterize the set of distinctive sounds, or 'phonemes', of English. Abercrombie (1956) identifies four possible approaches to using the IPA and standard orthography when starting with a class of beginners:
a. Give standard orthography only.
b. Give IPA as the only written form.
c. Give both.
d. Give neither.

Abercrombie goes on to say that the appropriate choice will depend on the circumstances. Option c, for example, may overload a learner whose L1 is written in a different alphabet or in ideograms, as this would entail learning two new scripts simultaneously. Options b and d do not seem plausible except for learners who are complete beginners and have never seen written English. Even for this vanishing category, it is difficult to envisage a justification for depriving them of the written form of the language.

An important variable in choosing between options a and c, according to Strevens (1974) is the learner's ability to intellectualize the learning process. For Strevens, this ability in an adult may compensate for children's well attested superiority in mastering sounds in an L2. He goes on to state that although in most cases the majority of sounds in an L2 will not present great difficulty, there will be residual problems, and with these it pays to be as sophisticated as the learners can take. One implication of this would seem to be that if the learner seems able to cope with the IPA, use it.

Of Abercrombie's four options above, a is perhaps the most frequently used in the language classroom. In many languages, such as Turkish and Spanish, standard orthography is a fairly reliable guide to pronunciation, and the use of a phonemic script may be redundant for learners of those languages. While not wishing to promote the 'generally rampant misperception that English spelling is chaotic and hopelessly irrational' (Dickerson 1987:166), we would have to admit that the connection between sound and spelling is not always obvious. Kenworthy (1987) points to several features to explain why this is so. These include the multivalency of letters such as [c] which can be pronounced /k/ or /s/, and the preservation of the historical connection between words and their rootsin spelling even where the pronunciations have diverged, for example 'sign' and 'signal'.

Dickerson (1987) rightly points out that there are rules largely governing the link between spelling and sound, and such rules may guide the learner in, say, pronouncing the [c] in 'case' and 'cease'. These rules are certainly useful, but often hard to express without using the IPA. Cases where present pronunciation and historical spelling have diverged are more difficult to give rules for.

Apart from the four possible approaches listed above, serious consideration should also be given to the possibility of using L1 orthography to characterize L2 pronunciation. This is clearly more feasible in some cases than others. Abercrombie (1956) claims that this approach, which he calls 'imitated pronunciation', would be very suitable for the Romanian learner of English, one reason being that Romanian explicitly characterizes the schwa sound which is so ubiquitous in English. The disadvantage of this system is

that it is incapable of transcribing sounds that are not present in the L1, and will tend to cause distortions where the L1 has a sound that is similar but not the same as the sound in the target language. Thus it could arguably reinforce L1 interference; certainly, it does nothing to contribute to the learner's viewing the L2 phonemic inventory as distinct from that of the L1. The kinds of error that may result from this are considered in Odlin (1989), and include failure to recognize distinctions that are phonemically significant in the L2 and not in the L1. For example, several of the native Spanish speakers who took part in the research to be reported in this paper, using 'imitated pronunciation', transcribed 'haul' as 'hol' and 'seize' as 'sis'. They would very probably transcribe the first syllables in 'holiday' and 'sister' in the same way and consequently have no means of distinguishing those vowel sounds. In such cases, learning the IPA may be a good investment, for although in itself, the IPA cannot teach difficult sound distinctions, it does serve as a reminder that there are distinctions to be made.

A further advantage of the IPA over 'imitated pronunciation' is that many dictionaries include phonemic transcriptions and consequently learners can work out how to pronounce words without the help of the teacher. Thus, knowledge of the IPA contributes to learner autonomy. This assumes, of course, that the learner has some mastery of the sound inventory represented by the phonemic symbols as exemplified in the key words the dictionary provides (Brazil 1987). In other words, it is of little use learners knowing that the first phoneme in 'vest' is /v/ if they still have no notion of the difference between /b/ and /v/. Again, the point is that the IPA does not teach the sounds of the L2, rather, it provides a way of representing them.

It may be useful here, following Dickerson (1987), to bring in a distinction between competence and performance. Pronunciation teaching often concentrates on performance skills, such as training in the articulation of sounds, and neglects competence, such as knowledge of the sound system and the rules that govern it. The IPA's contribution would appear to be in the realm of competence. Teaching the IPA thus conforms to the first of the recommendations proposed by Pennington and Richards in their evaluation of current trends in pronunciation teaching from a communicative perspective (1986:219), namely that 'the teaching of pronunciation must focus on longer-term goals; short-term objectives must be developed with reference to long-term goals'. There appear to be good reasons then for using the IPA in teaching pronunciation. An interesting question therefore would be: how useful is it in practice? The aim of the present paper is to report an experiment designed to assess the efficacy of the IPA in helping learners to remember the pronunciation of items of vocabulary. The subjective reactions of the learners who took part will also be reported.

2 Experiment

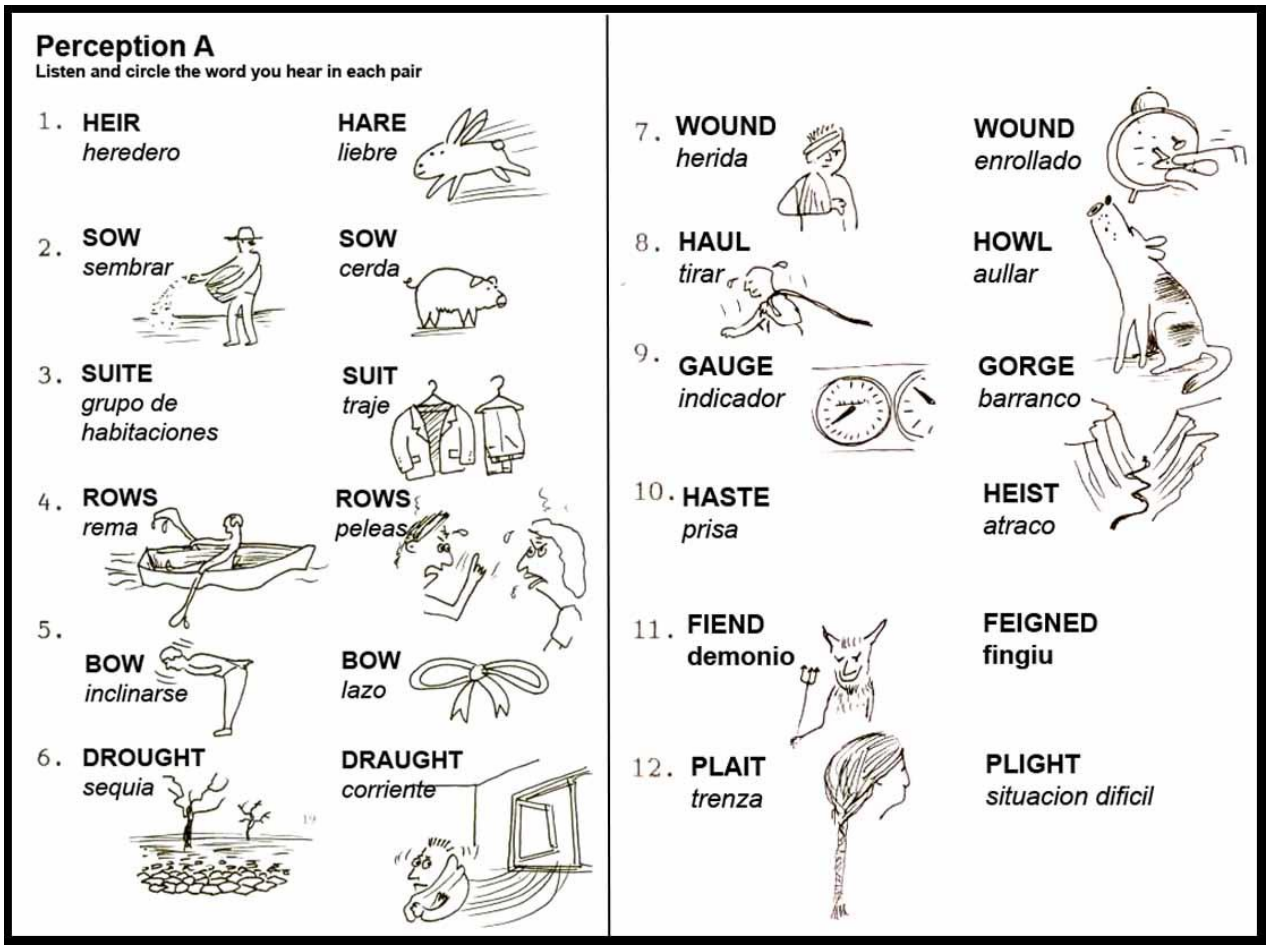
2.1 Subjects

The subjects for this study were 25 Spanish learners of English with levels ranging between intermediate and advanced. The number of males and females were approximately equal. Eight of the subjects were in a class at a school for young learners preparing to take the Cambridge First Certificate exam. The age range was 14 to 18 and motivation was not very strong, many being obliged by their parents to attend the course. The remaining subjects were young adults aged 25 to 35 studying English in preparation for an entrance exam for the Air Traffic Control training school in Madrid. They were highly motivated and viewed pronunciation work as highly relevant to their needs since it was an important component in the exam. Nine of these subjects came from on class and eight from another.

I had used the IPA in these classes prior to the experiment, but some of the learners I had been teaching for as little as a month and had not been exposed to the IPA in their previous learning experience. Thus, their knowledge of the IPA was fairly rudimentary.

2.2 Test Material

There were two parts to this study, one dealing with perception and the other with production. The perception test consisted of 12 pairs of words that were either homographs such as 'row' (propel a boat/argument) or easily confused pairs such as 'draught' and 'drought'. Beside each word was a translation and a picture where possible. This part of the test will be referred to as 'Perception A'. A second version of the test, 'Perception B', also included a phonemic transcription for each word. Here is the A version of the Perception test.

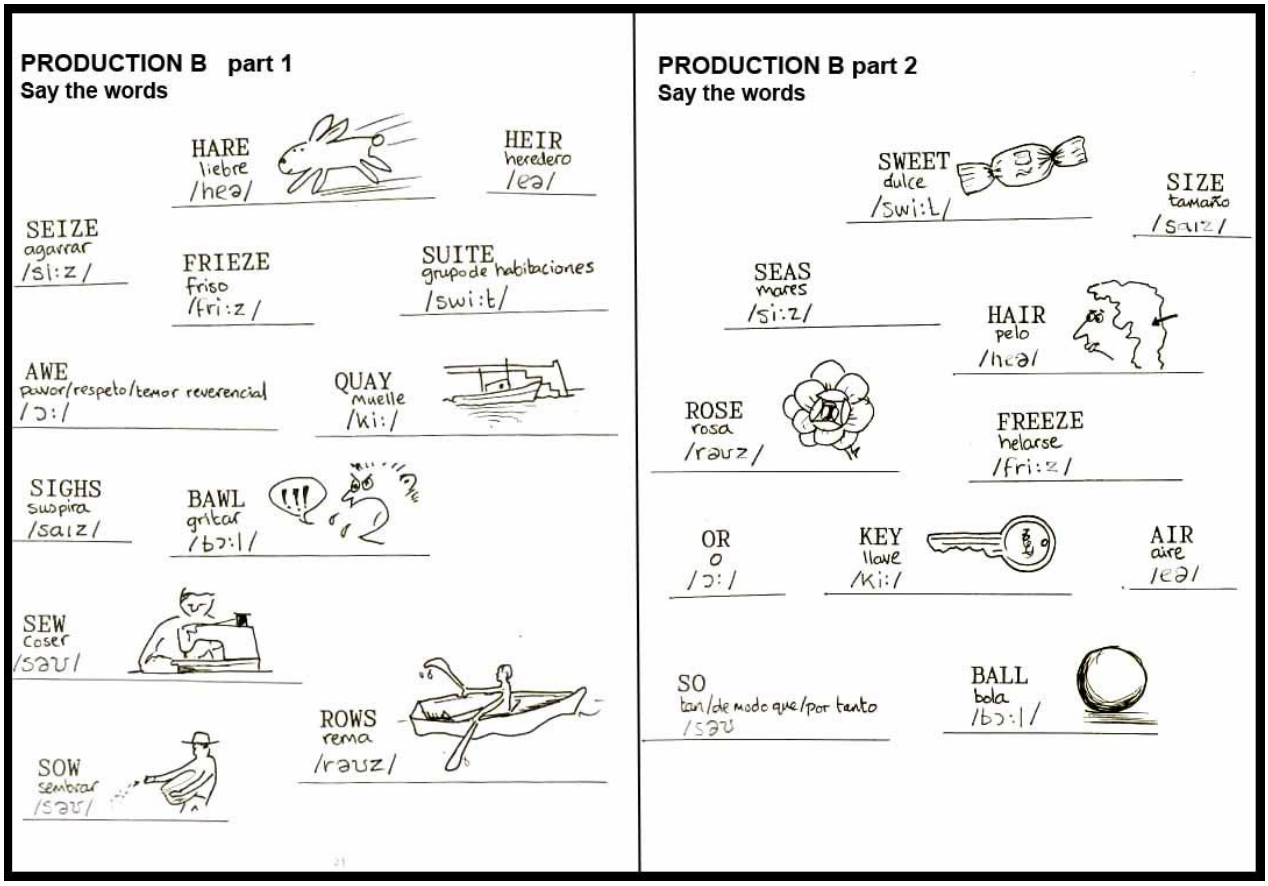


Half the subjects used Perception A and the other half used Perception B. They listened to a recording of 12 words, one from each pair, and were asked to indicate which word they heard.

There was also a brief pre-listening test consisting of 8 minimal pairs such as 'sand' and 'sound'. The vocabulary items in the pre-test were assumed to be familiar to the subjects. The pairs of sounds contrasted in this pre-test were also those contrasted in the main test. Thus, if a subject was able to discriminate between the words in the pre-test, this would demonstrate that any errors in the main test could not be attributed to difficulty in aural discrimination. The pre-test also served to familiarize the subjects with the procedure.

The production test (Production A) consisted of 12 pairs of words which were homophones, such as 'quay' and 'key'. For each pair, it was assumed that one of the words would be familiar to the subjects already (in the above example, 'key') and the

other unfamiliar (‘quay’ above). Part 1 of the test consisted of a sheet on which were written the 12 unfamiliar words accompanied by a translation and a drawing where possible. In part 2, the subjects were asked to read from a sheet on which were written the familiar words. A second version of both tests (Production B) also included a phonemic transcription for each word. Here is the B version of the Production test.



Half the subjects used the first version and half used the second. They were asked individually to read the words from the test sheets into an audio recorder. Correctness in pronunciation of the unfamiliar words was assessed in the light of the pronunciation of the familiar homophone of the word in the second part of the test. It was hoped that individual difficulties in articulating the words could thus be eliminated as a variable.

2.3 Procedure

The first version of the test described above (without phonemic transcriptions) was administered to half of the class of adolescents and to one of the classes of adults. The second version (with phonemic transcription) was administered to the rest. The test was administered twice with an intervening period of three weeks. The first test is referred to as ‘Test 1’ and the second test as ‘Test 2’. A different recording was used in the second perception test so that it could not be completed from memory.
Prior to the first test, the vocabulary was presented to the subjects with some drilling of pronunciation in a session which lasted about half an hour. For those subjects doing the tests Perception A and Production A, the presentation involved modelling and repetition. For those subjects doing Perception B and Production B, the IPA was used, and there was some analysis of the constituent sounds of the words as well as the drilling.

2.4 Results

The adolescents and the young adult subjects showed little significant difference in the test and their results are presented together in the table below. The subjects who did versions A of the test are referred to as 'Group 1' and those who did versions B as 'Group 2'.

	Group 1 [-IPA]		Group 2 [+IPA]	
	Test 1	Test 2	Test 1	Test 2
Perception	10.07	9.14	11.19	11.36
Production	8.43	7.29	9.37	11.09

(figures given are mean scores out of 12)

The figures show a slightly better performance on the part of Group 2 in Test 1. The differential is more marked in Test 2, where Group 1's results have deteriorated slightly and Group 2's results have shown a slight improvement.
The results of the listening pre-test are not given. Most of the subjects scored 8/8 or 7/8. This can probably be put down to problems in familiarization with the test format, which was part of the reason for using the pre-test. Similarly with part 2 of the production test (the familiar words from the homophone pairs), most of these were pronounced adequately by most of the candidates and the results are not given here.

2.5 Discussion

The figures clearly show that the subjects using Versions B of the test (with IPA) had an advantage over those using Versions A (without IPA). This result was to be expected for the following reasons:
a. The IPA provided one extra piece of guidance over and above what was available to the subjects using Versions A.
b. The standard spelling of the words in the test, by design, gave little or no guidance as to pronunciation.

A similar advantage might have been observed for subjects who had been allowed to annotate the test using 'imitated pronunciation'. This would obviously have reminded them of, for example, the sound /f/ in 'draught'. Indeed, it may be argued that the subjects using Versions B of the test used the IPA as if it were 'imitated pronunciation'. Given the limited experience the subjects had had with the IPA, they may not have been able to use it in any other way. There is some support for this idea in the observation of the way that Group 1, in the presentation phase of the experiment, annotated the pronunciation of the words without using IPA. In many cases, their 'imitated pronunciation' resembled IPA, the diphthong /eɪ/ for example, written [ei].

This points to a difficulty for an experiment purporting to test the value of IPA in this way; the subject would have to be thoroughly familiar with the IPA before the experiment in order to use it as a representation of the L2 sound system rather than 'imitated pronunciation'. It would then be very difficult to find a control group which would allow for a genuine comparison of like with like.

What the experiment reported here can claim to show is that some form of transcription, be it IPA or 'imitated pronunciation', is better than none. It would take more research of a more longitudinal nature to establish a difference in efficacy between these two systems of transcription. In the meantime, there are reasons for preferring the IPA as outlined in the Introduction.

A surprising aspect of the results reported above is the apparent improvement of Group 2 over the three weeks between the tests. One possible explanation is that continued exposure to the IPA (which both Group 1 and Group 2 received during the normal course of their lessons) in that intervening time enabled the3m to make better use of it in the second test. It is also possible that the subjects studied their notes make during the presentation phase of the experiment, and those whose notes included the IPA had more support to help them remember the pronunciation of the new words.
In assessing the significance of these results, it must be remembered that the situation in the controlled environment of the experiment cannot replicate the more complex language learning environment. The extent to which we can extrapolate from experimental results depends on the 'ecological validity' of the experiment (van Lier 1988:67), that is, how realistic the experimental environment is. In the context of the experiment reported here for example, further research would be needed to show how far the results given, based as they were on a test involving monosyllabic words, could be extended to polysyllabic words.
To sum up this discussion,
- Some form of transcription, in this case, the IPA, appears to help learners remember the pronunciation of new words.
- Further research would be needed to show that the IPA was more effective than 'imitated pronunciation' in this respect.
- The results must be treated with some caution owing to the reduced 'ecological 'validity' inherent in a controlled experiment.
In the following section, the results of a questionnaire completed by the learners in the classes described above are reported and the implications explored.

3 A Survey of Student Opinions

3.1 Results

The subjects described in the experiment above as well as their classmates were given the questionnaire below. The results are given out of 14 for the adolescents and 27 for the adults.

Phonemic Script Questionnaire

Look at the opinions about the phonemic script and tick those you agree with.

1. I think it's too difficult to use.
   Adolescents [6] Adults [10]
2. I prefer to just write down the word as it would be spelt in Spanish.
   Adolescents [8] Adults [6]
3. I think it's better to get used to the English spelling.
   Adolescents [4] Adults [12]
4. I prefer to ask the teacher for the pronunciation.
   Adolescents [9] Adults [12]
5. I don't think pronunciation is that important – people will understand anyway.
   Adolescents [0] Adults [0]
6. I think it's useful, specially for looking up words in the dictionary.
   Adolescents [5] Adults [14]
7. I think it's good for making a note of how to pronounce new words.
   Adolescents [7 Adults [19]
8. It helps me to clarify things when I think about pronunciation.
   Adolescents [10]Adults [23]

For the adolescents, the most popular answer was that the IPA helped to clarify matters when thinking about pronunciation. However, close behind this response was the opinion that it is preferable to ask the teacher for the pronunciation of words. This could reflect the fact that students of this age are very used to being in classrooms and the necessity of being independent in learning is not obvious. The option of using 'imitated pronunciation' was also popular here.

For the adults, the three opinions in support of the IPA (6, 7, 8) were heavily favoured. Written comments at the bottom of the questionnaire were also generally favourable to the IPA, but people also commented on its difficulty. Comments included;
- I think it's difficult to get used to the phonemic script, but when you know it, it's very useful.
- I think the phonemic script is pretty difficult if you don't have an English speaking person who corrects your pronunciation.

3.2 Discussion

Two important implications can be derived from these results. The first relates to Strevens' (1974) observation, mentioned in the Introduction, in relation to the learner's ability to intellectualize the learning process. Young learners often find it difficult to get to grips with the notion of an alphabet that describes sounds; the concept is too abstract for them. With adolescents, the situation tends to be more mixed. Some can cope with the idea quite easily, others not. In any case, with non-adult learners, the IPA pill needs more sugaring.

The second observation that may be made concerns the perceived difficulty of the IPA. Remarks that the IPA is easy to learn (Haycraft 1971, McMullan 1988) are at odds with comments on the questionnaire. Indeed, this reaction is not confined to learners; many teachers also avoid using it because of its perceived difficulty. It takes a long time for a teacher, native speaker or not, to build up sufficient confidence to use the IPA in their lessons. One methodological implication of this is that the IPA needs to be introduced in small doses – it is not sufficient to hand out a chart and expect the learners or trainee teachers to go straight ahead and use it.

It may be helpful to begin with the easier symbols, for example, the symbols /s/ and /k/ to describe the differing values of [c] in 'cease' and 'case'. This would make the significance of the slashed parenthesis to signal 'sound, not spelling' quite clear from the beginning. It seems strangely popular among teachers to begin introducing the IPA with vowels, and inparticular, /i/ and /i:/. This may be because these symbols represent the archetypal minimal pair as in 'ship' and 'sheep'. However, beginning in this way may well confound discrimination/articulation difficulty with phonemic transcription, thus stigmatizing the IPA as 'difficult'.

Many teachers say that it is more difficult to introduce the IPA with more advanced classes than with beginner classes, one reason being that these learners have already achieved a certain mastery of pronunciation without the IPA and therefore see it as unnecessary. One common strategy here is to try and prove the value of IPA with words that have notoriously unhelpful spellings such as the [ough] combination. This should be done with caution, since it may have the side effects of presenting learners with a repertoire of irrelevant lexis and giving them an exaggerated mistrust of English spelling. Another reason for reticence among more advanced learners with regard to the IPA is previous learning experience in which teachers have introduced the IPA at the beginning of a course and then never referred to it again. If the IPA is to be usefully exploited, a

certain commitment on the part of the teacher is required to make constant use of it in the classoom.

In sum, then:
- The IPA is best suited to learners capable of intellectualizing the learning process, particularly adults.
- The IPA is seen by learners to be difficult and thus needs to be presented in small doses, possibly starting with the easier symbols.
- To use the IPA effectively, the teacher must be committed to using it regularly in class.

4 Conclusion

The question of whether or not to use the IPA in the language classroom is frequently a matter of dogma. Teachers are commonly introduced to it in teacher training programmes and many go on to try to use it, with disappointing results, others with more success. These results become the source of anecdotes used in support of anti-IPA or pro-IPA positions. The aim of the research described in this paper was to provide some less anecdotal data on which to base a decision. The results of both the experiment and the questionnaire lean in favour of the IPA, but it would take further research to establish the superiority of the IPA against L1-based transcription ('imitated pronunciation'). It was suggested that the decision of whether or not to use the IPA depends crucially on the specific learning context. The following factors are significant here:
a. the orthography of the L1
b. the age of the learners
c. the capacity of the learner to intellectualize the learning process
d. the confidence of the teacher to use and continue using the IPA

[written in 1994]

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