

PHONETIC TRANSCRIPTION FOR LANGUAGE-LEARNING TEXTBOOKS
 =====

1. INTRODUCTION

Textbooks for language-learners that treat the language on a phonetic basis seem to have had their heyday between the 1930s, when there were a number of publications from the University of London, and the 1950s, when phonetic transcriptions were seemingly overtaken by audio recordings. The result has been that publishers of popular materials no longer provide even a minimal phonetic analysis. This development is unfortunate: phonetic analysis is, in my view, the first step in adult language-learning. In fact audio recordings come a poor second to a good transcription. They are difficult to learn from, since they don't tell the learner which features are important and which are not; they are difficult to use as reference-material, since it takes so long to find a particular fragment; they are expensive to buy; and, unlike a book, they require special equipment. A good phonetic transcription has none of these disadvantages, and once the sounds have been learned is as good as a native speaker speaking from the page.

This document discusses the problems that arise and the choices to be made in producing such a transcription for beginners' textbooks. It is addressed to those with a detailed technical knowledge of phonetics, and refers particularly to my pronunciation package for Lewis Gaelic (also on this website). As will be clear from the discussion below, a good transcription is one that puts as few barriers as possible between the symbols on the page and the learner's mental hearing of the sounds.

2. THE PHONE-SET

Assuming that a minimal phonetic analysis is one that distinguishes all the phonemes, the first requirement is a phoneme inventory. (Popular materials do not normally provide even this.) The real problem then comes with allophones. Allophonic detail cannot be completely omitted: it helps learners to sound more native-like more quickly, it accelerates their ability to understand the spoken language, and it reassures them when they hear unexpected sounds. But it can soon build up to an alarming amount of material, discouraging for the learner. The problem is that somewhere we have to draw a line between, for example, /tru/ and [t^hɹeu^w] as representations of south-of-England *true*, and there seems to be no linguistic principle on which to draw it. There are however various ways of mitigating these difficulties:

- a. The materials writer can decide to include only the most salient instances of allophony. What counts as salient is of course a subjective judgement, but a subjective judgement is better than none, and feedback from pupils can provide guidance.
- b. These allophones - chosen as above - should be shown in all cases where they could occur. This means that within words they can be included without comment, so that the word *help*, for example, might in one variety of English appear consistently as **hɛop**, with no mention of **hɛlp**; but across word-boundaries the processes need to be described and applied, so that *tell it* would appear as 'tɛlɪt, but *tell me* as 'tɛomi. The material can also include exercises dealing

with the forms that cross word-boundaries: the learner converts the unreduced form to the reduced, to acquire fluency, and the reduced form to the unreduced, for practice in reconstructing the underlying utterance.

c. The mechanical application of allophonic processes sometimes produces a crude and inflexible version of the language. In such cases materials writers can include a disclaimer saying that the changes vary according to speaker and social context; and provided that this has been made clear, they can then apply the changes randomly in only a proportion of cases. Exercises can also stipulate that a given set of allophonic changes is, or is not, to be made.

d. A tactic that is economical of space and learning-effort, but still provides reassurance, is to briefly mention specific allophones but not discuss them further. To read that 'in the south, **s** is often pronounced as **h**', for example, will reassure learners of Spanish.

The above discussion of allophones makes clear how important it is for the materials writer to decide exactly which variety of the language is to be dealt with, if allophonic chaos is to be avoided.

The phonemes and the chosen allophones constitute the 'phone-set' for the variety of the language that is being described, and any distinction between phonemes and allophones can thereafter be ignored - it has no significance for the learner. In my descriptions, therefore, I avoid the word 'phoneme' and talk only of 'sounds', and where allophonic processes need to be described - as opposed to being incorporated without comment - I refer to them as 'changes in connected speech'. By the same token I use neither slants nor square brackets to mark off the phonetic symbols - the typeface is sufficient for this. Further, my descriptions refer to an 'original' or 'underlying' sound 'changing' to a different sound in certain phonetic contexts: this form of words matches learners' intuitions, and which underlying phonological model is used isn't important.

2.1. Choice of symbols

As far as the choice of symbols is concerned, I have adopted the following guide-lines:

a. Use the International Phonetic Alphabet. The IPA is not the only symbol-set available, but whereas others have mostly been developed for specific languages, the IPA can be used for any language. So if students know some IPA symbols already, they start with an advantage; and if they don't, then one can offer the incentive that learning the IPA symbol-set is an investment for learning other languages.

b. Choose the IPA symbol that most closely matches the typical sound of the phone that is being represented. This precludes the use of 'cover' symbols and phonologically motivated symbols. For example, **r** cannot be used as the symbol for south-of-England **r**, since **r** represents a trill: **ɹ** must be used instead. This contravenes one of the recommendations of the International Phonetic Association, to use the simplest possible symbol that preserves the necessary distinctions within the language. In a language-learning text, however, the transcription is in effect a 'comparative' transcription, noting differences between the learner's

speech-sounds and those of the target language, so this recommendation can be overridden. The effect of this tactic is to incorporate the 'conventions' - the text which specifies how the symbols are to be interpreted - into the transcription itself. (The ideal would be to have a single convention, 'symbols have their IPA values', which can then be assumed.) This approach means that the transcription directly represents the sounds that a native speaker would make, and so speaks immediately to the learner.

c. Use as few diacritics as possible, so as to reduce clutter in the text. This requirement may conflict with the need to distinguish all phonemes - a language may have phonemic differences that cannot be captured by the raw IPA symbols, in which case either diacritics must be used, or a symbol must take on an unusual meaning.

d. Retain orthographic spaces. This is a compromise with (b) above, which aims to show on the page exactly what the learner will hear, but a necessary help to beginners.

A further constraint on symbols is that they must be available in the chosen font. My choice of font for the materials on this website was circumscribed: for various reasons it had to be fixed-width, non-Unicode (and therefore limited to 256-characters), and free of charge; it had to contain as many IPA symbols as possible; and it had to produce symbols that were clear when displayed or printed on a home computer. The only practicable choice was the IPA-samm SIL series from the University of London Phonetics Department website.

2.2. 'Same' sounds

Another consideration that affects the choice of symbols is the problem of the 'same' sound. By this I mean a sound which is broadly the same in the learner's language and the target language, but is different when examined more closely. An example is British and French *t*, 'a *t*-sound' in both languages, but alveolar in one case and denti-alveolar in the other (among other differences). The materials writer needs to decide which differences to note, whether to note them in the description or in the symbols, or in both.

The materials writer might also have a wider goal of producing an account that was neutral with regard to the learner's language. The Illustrations that appear in the *Journal of the International Phonetic Association* are an example of this: they include secondary features (dental or alveolar, aspirated or unaspirated, for example), but without reference to the secondary features of similar sounds in other languages, and therefore provide a language-independent description. The result is that readers can arrive at a good pronunciation irrespective of their native language. But the Illustrations are addressed to phoneticians, who are able to work out for themselves the featural differences between their native language and the target language, and experience shows that non-specialist language-learners can't do this. In a teaching package, therefore, the featural differences would need to be spelled out: there would need to be, for the one target language, a different set of conventions for each language-group of learners, and a different set of symbols if the featural differences were symbolised. This is clearly not within the scope of the sort of teaching package being considered here.

So we can return to a more conventional view of features, on the basis that the target language is to be described in terms of a single known language. The known language that I have adopted in this case is Southern British English. For each sound I give not only a technical description, consisting of the trinomial specifier together with any featural differences between the target sound and the Southern British English sound, but also a layman's description, intended to elicit the correct features from the learner - 'pronounced against the teeth and with a strong puff of breath', for example. I decided to mark no differences in the symbolisation, however. One reason for this was to keep the text uncluttered, as noted above; another was that feature differences are adequately covered in the technical and layman's description; a third was that some features - 'unaspirated', for example - have no IPA symbol. But the most important was that without feature differences the transcription could remain detached from any learner's native language, and so would need no change if the material were developed for audiences with other first languages.

3. APPLICATION TO LEWIS GAELIC

How have the above considerations played out in my pronunciation package for Lewis Gaelic? (I should at this point make it clear that my information on the pronunciation of Lewis Gaelic is drawn from the four published sources listed at the end of this document. I have seen no evidence to suggest that these accounts are in any way inaccurate, but I have made no special effort to listen to or analyse Lewis Gaelic in the field.) The phoneme inventory is large. Here it is in a *phonological* symbolisation:-

Vowels: i u ʊ
e o ɤ
ɛ ɔ a

Semivowels: j w

Plosives, aspirated: p^h p^{hj} t^h t^{hj} k^h k^{hj}
Plosives, unaspirated: p p^j t t^j k k^j

Fricatives, voiceless: f f^j s ʃ ç x h
Fricatives, voiced: v v^j ʒ ɣ

Sonorants: r^j r r^v
l^j l l^v
n^j n n^v

Other nasals: m m^j

Vowel-length component: 'tʊn^jə man; 'tʊ:n^jə men

Diphthongs are treated as two-vowel sequences.

Nasality component: mar 'val^və like a wall; mar 'vāl^və like an eyebrow

There are some minor problems associated with this phoneme inventory:-

a. Some commentators deny the existence of the palatalised labials p^h^j p^j f^j v^j m^j . However, the controversy concerns only the analysis, and it is generally accepted that the string pj etc. adequately represents the pronunciation. I have therefore adopted this solution, eliminating these five phonemes.

b. The sound n^v is not well attested. Ladefoged *et al.* did not hear it, and both Borgstrøm and Oftedal say that it is hard to distinguish from neutral n . But since they also say that it reveals its existence by influencing the adjacent vowel, I have included it.

c. Some pairs of phonemes overlap phonetically, with the result that a given phone may be assigned to one phoneme by one commentator and to another phoneme by another. The pairs in question are $e \sim \varepsilon$, $\varepsilon \sim a$ and $o \sim \circ$; examples are $f\tilde{e}^hk$ versus $f\varepsilon^hk$, $l^j\epsilon pi$ versus l^japi , $k^hr\tilde{o}^hk$ versus $k^hr\circ^hk$. I have made a more or less arbitrary choice in each case.

3.1. Phonetic symbols for Lewis Gaelic

More serious difficulties arise when choosing symbols that give an accurate *phonetic* representation:-

a. Some long vowels have markedly different qualities from their short counterparts - so different that the long vowel is closer to a different cardinal. The most striking case is that of $/\varepsilon/$ and $/\varepsilon:/$, where $/\varepsilon:/$ is phonetically closer to $[e]$ than to $[\varepsilon]$. However, using $e:$ for $/\varepsilon:/$ would also require the use of a lowering diacritic to distinguish $/\varepsilon:/$ from $/e:/$, and the lowering diacritic did not print well. An alternative tactic would have been to use $e:$ for both phonemes, eliminating one of them, but since no commentator says that native speakers confuse them, that solution was not acceptable. I have therefore retained $\varepsilon:$ and sacrificed some phonetic accuracy (and included a note to that effect).

b. Regarding the two sets of plosives, the phonemic difference between them is not that one set is voiceless and the other is voiced (as popular publications would have it), but that one set is aspirated and the other is unaspirated. Under these circumstances, the choice of p b made by most popular publications is misleading, since it implies that one set is voiced.

- those who favour the p b solution sometimes argue that p will automatically elicit an aspirated plosive from English speakers, since that sound is aspirated in English. I am not persuaded by this: south-of-England speakers produce less aspiration than is required in Gaelic, and Scottish speakers produce less still. Moreover it is surely unsound to choose symbols that depend on the speech-habits of a particular group of learners.

- another solution would be to use the voiceless diacritic, but this clutters the text and requires different symbols for ascenders and descenders. I therefore use p etc. for the unaspirated sounds, which in turn means that the aspirated sounds require p^h etc. This is the solution adopted by Ladefoged *et al.* (and by transcribers of Cantonese and Standard Chinese, where the same problem occurs).

c. Concerning the opposition between palatal and non-palatal plosives, the phonological notation marks the palatals with j and leaves the non-palatals

unmarked. There are two objections to this. One is that palatal k^{hj} k^j are adequately represented by the IPA symbols c^h c , given that the fricative offglides for these two plosives are not strong. The second objection is that t^{hj} gives no information on how the palatality is realised. On this point, the following observations seem pertinent:

- all accounts indicate that the sound is an affricate, not a succession of plosive and fricative.

- according to Borgström, the plosive is made with the tongue-tip touching the top teeth, and the fricative offglide is $ç$. However, I find I cannot produce an affricate that consists of a dental plosive followed by a palatal fricative: there is delay while the front of the tongue is raised, so that the result is two sounds, not one. I can however eliminate the delay by advancing the fricative, making it alveolo-palatal rather than palatal.

- in Oftedal's account, the plosive is made with the tongue-tip touching the lower teeth. With the tongue in this position, I can make the alveolar plosive that he specifies, but again not a palatal affricate, only an alveolo-palatal one.

- the symbol $ʃ$ is particularly unsuitable for the fricative element, since it specifies a post-alveolar place of articulation, and usually denotes that the tongue-tip is the active articulator. Neither of these seems to apply in the present case.

I have therefore adopted the alveolo-palatal symbol $ç$ for the fricative off-glide of these two plosives.

d. The nine sonorants pattern prettily in three triplets; each triplet has one palatalised member, one neutral member and one velar member. There is a Celticist tradition competing with the phonological notation:

r' r R
L' l L
N' n N

My decision to use the IPA precludes using the Celticist symbols. The phonological notation has two disadvantages:

- non-diacritic IPA symbols exist for l^j and n^j , namely $ʎ$ and $ɲ$, so they should be used;

- the notation r^j does not adequately represent this sound, which is a palatalised dental fricative. I have therefore followed earlier commentators in using $ʃ^j$.

e. The customary notation of svarabhakti vowels using phonetic square brackets, embedded between slants in phonemic transcriptions, is surely clumsy, and unnecessary in a textbook of this type. I have there adopted a 'surface' notation using the IPA symbol for upstep, the small upward arrow: 'ɛ̥n'ɛ̥m.

f. I have used the IPA notation for a syllable break, rather than the Celticist hyphen: 'lʲa.ə.

3.2. Allophony

Under the schema which I present above, there are three main ways of dealing with an allophonic feature: incorporate it without comment within the word; explain it and give rules for the changes that are required across word-boundaries; ignore it.

The processes that I incorporate within the word without comment are three:

- when an aspirated plosive comes at the end of its syllable, its aspiration comes before it, not after. So I write **ma^hk** etc. without comment.
- aspirated plosives are deaspirated in unstressed syllables, neutralising the opposition between them and unaspirated plosives (though commentators note small phonetic differences). I use the unaspirated set in unstressed syllables.
- among the semivowels, I reserve **ɨ** for word-initial and word-medial positions, and use **j** word-finally.

I deal with two processes that cross word boundaries:

- there is a variation between **ʌ** and **u**, which one commentator notes native speakers are fully conscious of. I note it and give rules for it, and use symbols which reflect the two phonetic values. This process interacts with lenition: lenition can change a velarised consonant into a non-velarised one, and this in turn changes **u** into **ʌ**. The change therefore crosses word boundaries, and so needs to be explained.
- an r-sound combines with a following alveolar consonant to form a retroflex. I give rules for this and use the usual retroflex notation. (It could be argued that this phenomenon does not really cross word-boundaries, since it applies only to close-knit phrases.)

Allophonic features which I have ignored are:-

- variation between **a** and **ɑ**.
- devoicing of sonorants when adjacent to voiceless plosives.
- varying behaviours of word-final **h** and word-final **ə**.

3.3. Nasalisation

The last area requiring comment is nasalisation - the change of plosives, in certain grammatical contexts, to nasals at the same place of articulation.

a. For the nasalisation of aspirated plosives, I have followed the account of Ladefoged *et al.*, which is the same as those of Borgstrøm and Oftedal except that it specifies the **h** as breathy. The breathy voice makes the sound perceptually more distinctive, so I symbolise it. It is also necessary to show five nasal sounds: since it is the place of articulation of the nasal that tells the listener which plosive has disappeared, there must be one nasal for each of the five plosives. I

therefore introduce two additional nasal sounds, η^j and η , to match the plosives c^h and k^h .

b. As far as nasalisation of the unaspirated plosives is concerned, the effect is produced by timing, for which there is no obvious notation. I have therefore used a bracketed (b) (d) etc., and extended the series of voiced sounds to five to match the plosives. Superscripts would have been preferable to brackets, but are not in the font.

4. RESULT

Putting together the above considerations produces the phone-set shown below, symbolised phonetically; this can be compared with the phoneme-set shown at the start of this document and symbolised phonologically. In the list below, allophones of the same phoneme are shown in brackets (they also appear round the nasalised unaspirates):-

Vowels: i (u u) u
e o (ʏ ə)
ɛ ɔ a

Semivowels: (ị j) w

Plosives, aspirated: (p^h h_p) (t^h h_t) (t^h h_t) (k^h h_k) (c^h h_c)
Plosives, unaspirated: p t t̤ k c
Nasalised unaspirates: (b) (d) (d^j) (g) (j)

Fricatives, voiceless: f s ʃ ç x h
Fricatives, voiced: v j ʝ

Sonorants: ɸ^j r r^v
ʎ l l^v
ɲ n n^v

Nasal: m
Retroflex: ɽ ʂ ɳ
Add'l nasalisation sounds: ɦ η^j η

Stress, nasality, vowel-length, syllable-break, svarabhakti: ' ~ : . †

5. SOURCES

Borgstrøm, C. Hj. (1940). *The Dialects of the Outer Hebrides*. Oslo: Norwegian Universities Press.

Ladefoged, P., Ladefoged, J., Turk, A., Hind, K. & Skilton, St.J. (1998). Phonetic Structures of Scottish Gaelic. *Journal of the International Phonetic Association*, 28, 1-41.

Oftedal, M. (1956). *The Gaelic of Leurbost, Isle of Lewis*. Oslo: Aschehoug / Nygaard.

Ternes, E. (1983). Gaelic: phonemic structure. In Thomson, Derick S. (ed.), *The Companion to Gaelic Scotland*, 101-104. Oxford: Blackwell.