Włodzimierz SOBKOWIAK, School of English, Adam Mickiewicz University

Can EFL MRDs teach pronunciation?

Abstract

English-as-a-Foreign-Language Machine-Readable-Dictionaries (EFL MRDs), both traditional and multimedia, are gradually taking on new functions. With the addition of grammar and word-formation modules, usage notes, thematic tables, pictures and diagrams, interactive audio and video scenes with a variety of built-in exercises, they are becoming fully-fledged teaching/learning resources in addition to simply being reservoirs of lexicographic information. Few such dictionaries, however, have so far seriously attempted to extend this new function into the area of pronunciation. In this paper I look at both such phonetic functions which are readily implementable on the basis of the currently existing lexical databases and those which would require some additional unorthodox lexicographic annotation.

Keywords: MRDs, pronunciation, phonetics.

1. What is available

The number and variety of English MRDs which have appeared on the lingware market in the last couple of years is amazing. Many of them are explicitly dedicated for EFL use; some of them, while originally designed for native speakers of English, are nevertheless widely used by foreign learners as well. There are mono- and bilingual ones, traditional and multimedia MRDs, American and British-based. There are large and small MRDs, floppy-disk and CD-ROM-mounted ones, cheap and costly ones. There are those which contain the bare minimum of lexicographic information and those that offer more than the unabridged hard-copy dictionaries of the past. Finally, there are those which, on top of simply offering reference, provide some built-in teaching functions, thus bridging the gap between the traditional EFL MRDs and EFL Computer-Assisted Language Learning (CALL) packages.

Such dictionaries, judging by their commercial success, have managed to fill a genuine demand niche on the EFL market. All or some of the recent line of mono- and bilingual MRDs published by Collins Cobuild, Oxford and Longman contain facilities such as: (a) boxes and modules containing usage and grammar advice, common errors, quotations, general encyclopedic information, style/register examples (e.g. business correspondence), and a variety of other linguistic and cultural resources for exploration, (b) vocabulary testers where the learner grades him/herself on the knowledge of the displayed word, with the difficulty weight of the word adjusted accordingly, which then controls repetition rate, (c) record-yourself facility, on top of the now standard model pronunciation of each entry, where the learner can "compare [the] recording with the original and repeat this until [his/her] pronunciation is correct"[1], (d) 'educational games' like crossword puzzles or picture-to-word, picture-to-sound, and sound-to-word matching, even (e) an "extensive bank of teachers' lesson plans" (the *Interactive American Dictionary*).

As can be seen from this overview, as far as pronunciation teaching/learning is concerned, contemporary dictionaries offer relatively little, compared to the full range of spelling, meaning, grammar, usage and morphology functions. Phonetic transcription is of course

included in all EFL MRDs, and talking dictionaries are now becoming standard. Dictation and sound-to-word or sound-to-picture matching exercises, as in the *New Oxford Picture Dictionary*, are a promising novelty which must still be tested. The recording facility, with or without sound-wave visualization and editing, is also becoming more and more popular although, as I have argued elsewhere (Sobkowiak 1997b:335), it is not without its problems.

With all these sophisticated functions and facilities it is surprising how undiscovered the full didactic potential of the phonetic content of the standard lexical database remains. The humble phonetic transcription field, for example, contains a wealth of phonetic information which can readily be used as a basis for a variety of access paths and exercises. As I have discussed phonetic access on a number of occasions (Sobkowiak 1994a,b, 1995, 1996a, 1997a), I will address the latter issue here.

2. What is not available.

Apart from phonetic transcription there are other fields in a standard dictionary entry which contain information having obvious phonetic ramifications: part-of-speech and word-formation tagging, dialectal and phonostylistic variation, inflected forms, exception and/or irregularity codes (e.g. pluralia tantum, irregular verbs), (foreign) etymology, even example sentences. All of these can potentially be used for a variety of pronunciation exercises, both for classroom use (*pace* Kegl 1995) and self-access, both teacher-supervised and self-assessed. Below I will briefly exemplify some easily implementable exercises.

2.1. What is easily implementable.

A classical type of pronunciation drill (currently out of fashion, but still widely used for its simplicity and availability) requires the learner simply to repeat a number of words selected according to some phonetic criterion: containing the sound X, for example. Such is the basis on which a large number of traditional pronunciation textbooks were built, such as Barnard & McKay 1966, Munro MacKenzie 1967, O'Connor 1967 and many others. Dictation of single words is a multimedia equivalent of this traditional type of exercise. Another old favourite: minimal pairs of words featuring a required contrastive series of sounds (*pit, pat, put* or *pit, tit, kit* or *pit, pip, pick*) are also easily collected from the MR lexical database. Both listing and dictation of phonetically filtered words are of course readily implementable in present-day multimedia MRDs. Notice that pronunciation-oriented dictation is an altogether different affair from the randomized dictation drills of the *New Oxford Picture Dictionary*, where no phonetic criteria are used.

To some extent it is also possible to account for the effects of segmental context on the 'sound X' in question, something which was of course done frequently in the traditional hard-copy pronunciation exercises. Plosion varieties (aspirated, lateral, nasal, partial, glottalized, unreleased), place-of-articulation assimilations (dentalization, labialization, palatalization, velarization), variable vowel length (long before lenis consonants, short before fortis ones), word-final schwa lowering, sonorant syllabicity or devoicing, liaison (vowel hiatus, linking r, compound geminates: *breaststroke, candlelight*), etc. are all rule-governed and context-sensitive. The context is coded in the dictionary entry's phonetic transcription and other fields (e.g. 'compound' tag) and the rule (or at least its first aproximation) is in each case easily formulatable into an MRD search algorithm.[2] Proper display and/or sounding of the resulting

list of words as well as spinning write-in, matching or multiple choice exercises around them are then quite trivial. Recently published, 'communicative-phonetics' textbooks, such as Bowen & Marks 1992 or Dalton & Seidlhofer 1994, are full of suggestions for meaningful and exciting pronunciation exercises and games, practically cut out for multimedia implementation.

Sound and letter clusters present difficulties of their own. Take the /ei/ diphthong, for example: before heavy consonantal clusters it is often erroneously monophthongized by foreign learners of English: *ancient, chamber, apron, cradle, fragrant, manger, pastry*, etc. would all be pronounced with an /æ/. On the other hand, the correct reading of word-final *-ate*, for example, depends on the word's morphosyntactic category ('part of speech'). There are also French loanwords with particularly confusing (even to natives) grapheme-to-phoneme links: *ballet, regime, croupier, toupee*, all of them with /ei/. All these bewildering grapho-morpho-phonetic facts and many others can be easily laid out for MRD-centred practice.

Apart from simple segmental information, the word's stress pattern is also coded in most MRDs. This creates a potential for a variety of exercises and drills, from the simple multiple choice (with or without sound) like: "Which of these words is/are stressed on the first syllable?", "Which of these words have/has this stress ...?", or "Which syllable is stressed in ..." (provided that syllable division is suitably coded in the MRD, which is not often the case), to the phonetically advanced practice of the unstressed, but unreduced, vowels in such words as *abstract, epoch, index, outcome, process, radar, record (n), volume* (in post-stress position) or *abnormal, authentic, bronchitis, cartoon, crusade, dexterity, frustrate* (in pre-stress position). Sophisticated exercises on compound stress, substantive, verbal and adjectival, can be created if stress data is combined with part-of-speech and word-formation tagging: *'acid house* vs *,acid 'rain*, for example.

Heterographic homophones (*stalk, stork*) and heterophonic homographs (*lead*: /li:d/, /led/), the veritable *tour de force* of EFL learners, can be easily retrieved from an MRD, as well as a variety of other phonetically interesting lists: words which significantly differ in their British and American pronunciation, words with neutral and stress-shifting affixes, phonetic subregularities among irregular verbs, phrases with a given rhythm (*double up, in the dark*), etc.

Finally, while phonetic transcription itself seldom becomes the subject proper of pronunciation courses (at least outside academia, but see Tench 1992), it would be childishly easy to exploit the MRD's potential in this respect. To the extent that there is one-to-one mapping between different types of transcription it would also be possible to practise IPA as opposed to, say, commonly used American transcriptions or simplified transcriptions of all kinds (see, in particular, Sobkowiak 1997a). Again, a variety of exercise types come to mind: dictation, spelling-to-transcription and transcription-to-spelling write-ins, multiple choices and matchings, transcription-to-sound read-alouds, etc. (see Bowen & Marks 1992 again for unorthodox transcription-based exercise ideas: hangman, anagrams, mazes, scrabble, crossword, etc.).

2.2. What is not so easily implementable (yet).

It is of course not the case that all thinkable and phonetically interesting exercise and drill types are doable given the current state of hard-, soft- and ling-ware. Perhaps the most notorious problem is **speech recognition**. While commercially viable software now exists which can reliably recognize and act upon continuous spoken input with no need for training and no restriction as to the voice quality, I am not aware of lingware which could do intelligent phonetic analysis of the input foreign speech, evaluate and grade it in the context of the given exercise or drill, and then offer advice on possible ways to improve it. This ambitious role has so far been exclusively reserved for the teacher and/or learner (the MRDs which offer the recording facility pretend that the latter is practically as competent as the former in this respect).

Thus, it looks like we may have to wait a few more years for MRDs which will offer proper EFL speech recognition and analysis. But there are other types of pronunciation-training facilities and functions which can be implemented with some additional lexicographic work. In the remainder of this paper I will briefly discuss some of them.

• First, **L-1 sensitivity**. Many EFL pronunciation resources are crucially based on the expected phonetic interference (negative transfer) from the learners' native tongue, and the rationale behind this principle is too obvious to discuss further. Bilingual MRDs have also been increasingly relating to foreign learners' native grammatical, orthographic and stylistic habits, which are usually hard to suppress in the acquisition of the target language vocabulary (see e.g. Tomaszczyk 1983:44). However, I have yet to see a dictionary (whether MRD or traditional; with the obvious exception of pronunciation dictionaries — see Wells 1990, for example) which would contain phonetic boxes and advice panels or tables.

And yet, it does not seem to be terribly demanding, either lexicographically or computationally, to annotate the phonetically troublesome entries with narrow (allophonic) transcription (see Al-Kasimi 1977:38) as well as codes of expected difficulty and/or error. Even a semi-automatically generated simplified 'Polglish' transcription, which I advocated in my 1997a paper, would go a long way towards making a variety of L-1 sensitive MRD-based phonetic exercises possible. For example, if we code the following: /e/, /ə:/, /eə/ and word-final /ə/ as /e/ (massive neutralization commonly encountered at early stages of Polglish development), we can generate L-1 sensitive exercises of the type: "Which pairs of words sound the same in English: *burst – best, the – there, cell – sell, urn – earn*?" Phonetically-aware fuzzy search algorithms (Wu & Manber 1992a,b; Zobel & Dart 1996) might be most usefully applied in situations where an EFL learner inputs a string which has no one-to-one match among the expected answers.

A phonetic difficulty rating tagged on each MRD entry would allow the exercise module algorithms to weight the entries so that the more difficult are used more frequently, for example. Such rating can be produced semi-automatically, given the known rule-governed phonetic problems of Polish learners of English.

• Second, while we are at it, **frequency**. I take it as given that word frequency is an extremely useful piece of data to have in an MRD. With the growing role of corpora in lexicography, this truth has become self-evident. From our present vantage point, it is again incontrovertible, I believe, that phonetic exercises which have access to frequency data would be all the

more useful and intelligent. After all, who would like to practise the pronunciation of words and phrases which occur only a few times in multi-million word corpora? At least four types of frequency would be needed: British vs American and spoken vs written. While (sometimes unreliable) data is now available on all four, a fair amount of information is still lacking: style- and register-sensitive frequencies, for example, as well as multi-word frequencies (phrases, collocates, idioms, etc.) or frequencies from other dialects than the two given.

• Finally, and somewhat futuristically, **sandhi, sentence stress** and **intonation**. None can be practised with the currently available MRDs for the simple reason that, due to CD-ROM space restrictions, only head entries are audio-recorded (sometimes only some of them). But now, with the advent of the DVD technology these hardware restrictions are bound to be lifted sooner or later. There will then be no obstacle to recording at least the example sentences in the entire MRD, and possibly the definitions in monolingual MRDs. With proper linking and alignment of text and audio and some concordancing facility (of which the MRD 'whole text search' is a forerunner), the road is then open to designing many exciting segmental sandhi and suprasegmental exercises based on these texts and recordings. Consider, for example, difficult fricative sandhi transitions, such as *pass_through, it's_thick*, etc., schwa tensing in prevocalic *the*: *the_attention, the_options*, word-final alveolar stop elision *accep(t)_that, bes(t)_part* and palatalization *about_your, behind_you*, and a variety of intonation drills, e.g. different statement and question contours (general, specific, tag), itemization, vocal highlighting of side remarks, quotes and 'special' words (see Sobkowiak 1996b for further ideas on the phonetic use of text corpora).

3. Conclusion

So, being (pain)fully aware of a number of inconvenient provisos which must be taken into account: (a) that *teach* is a four-letter-word in present-day language pedagogy, (b) that it is crucial to specify learner's needs and teacher's aims before the onset of any didactic process, (c) that some useful pronunciation exercises have already been successfully incorporated in standard CALL packages, and others may not be implementable in an MRD (or otherwise) in the foreseeable future, (d) that English pronunciation is normally not EFL learners' (and, in particular, EFL dictionary user's — see Béjoint 1981:215) favourite aspect of their favourite foreign tongue, and (e) that EFL MRD designers, producers and publishers must cater for the needs and fancies of the average learner/buyer, and there are limits to what is commercially viable in this relatively narrow sector of the EFL lingware market, I nevertheless strongly believe that the answer to the title question is a resounding yes.

After all, which EFL resource other than properly coded MRD could (semi-)automatically generate exercises spun around those English animal names which are relatively common in colloquial English, but relatively difficult (grapho-)phonetically to Polish (any foreign?) learners: *calf, lamb, sow, bison, donkey, giraffe, leopard, monkey, reindeer*?

4. Notes

[1] This is a ridiculously oversimplified and seriously misleading interpretation of pronunciation learning, of course, but this is beyond the point here. See Sobkowiak 1997b for some further discussion.

[2] I am assuming broad (phonemic) transcription throughout. Should entries be narrowly (allophonically) transcribed (either for display or internally), no need for deriving contextual variants by rule would arise.

5. References

Al-Kasimi, A.M. (1977) *Linguistics and bilingual dictionaries* Leiden, E.J.Brill.

Barnard, G.L. & P.S. McKay (1966) *Practice in spoken English* London, Macmillan & Co.

Béjoint, H. (1981) "The foreign student's use of monolingual English dictionaries: a study of language needs and reference skills". *Applied Linguistics 2.3.* pp. 207-22.

Bowen, T. & J. Marks (1992) *The pronunciation book: Student centered activities for pronunciation work* Burnt Mill, Longman.

Dalton, C. & B. Seidlhofer (1994) *Pronunciation* Oxford, Oxford University Press.

Kegl, J. (1995) "Machine-readable dictionaries and education". In D.E. Walker, A. Zampolli & N. Calzolari (eds) *Automating the lexicon: research and practice in a multilingual environment* New York, Oxford University Press, pp. 249-84.

Munro Mackenzie, M.D. (1967) *Modern English pronunciation practice* London, Longman.

O'Connor, J.D. (1967) *Better English pronunciation* Cambridge, Cambridge University Press.

Sobkowiak, W. (1994a) "Phonetic Access Dictionaries in EFL: from vision to project". *Nordlyd 21.* pp. 33-41.

Sobkowiak, W. (1994b) "Beyond the year 2000: phonetic access dictionaries (with word-frequency information) in EFL". *System 22.4.* pp. 509-23.

Sobkowiak, W. (1995) "Słowniki z dostępem fonetycznym w nauce języka angielskiego". In Z. Vetulani, W. Abramowicz & G. Vetulani (eds) *Język i technologia.* Warszawa, Akademicka Oficyna Wydawnicza PLJ, pp. 168-171.

Sobkowiak, W. (1996a) "EFL Wordstation". In A. Lindebjerg, E.S. Ore & Ø. Reigem (eds) *ALLC-ACH '96 Conference Abstracts.* Bergen, Norwegian Computing Centre for the Humanities, pp. 243-246. Also in W. Skrzypczak (ed.)(1996) *New technologies in language education* Toruń, Department of English Nicholas Copernicus University.

Sobkowiak, W. (1996b) "Computer-readable text corpora in teaching and learning English phonetics". In E. Waniek-Klimczak (ed.) *Teaching English phonetics and phonology in Poland* Łódź, Wydawnictwo Uniwersytetu Łódzkiego, pp. 7-25.

Sobkowiak, W. (1997a) "Radically simplified phonetic transcription for Polglish speakers". In R. Hickey & S. Puppel (eds) *Language history and linguistic modelling. Festschrift for Jacek Fisiak on his 60th birthday* Berlin, Mouton, pp. 1801-1830.

Sobkowiak, W. (1997b) "Speech in EFL CALL". In W. Strykowski (ed.) *Media a edukacja.* Poznań, eMPi[2], pp. 329-39.

Tench, P. (1992) "Phonetic symbols in the dictionary and in the classroom". In A.Brown (ed.) *Approaches to pronunciation teaching* London, Macmillan, pp. 90-102.

Tomaszczyk, J. (1983) "On bilingual dictionaries". In R.R.K. Hartmann (ed.) *Lexicography: principles and practice* London, Academic Press, pp. 41-51.

Wells, J.C. (1990) *Longman Pronunciation dictionary* London, Longman.

Wu, S. & U. Manber (1992a) "Fast text searching allowing errors". *Communications of the ACM 35.10.* pp. 83-91.

Wu, S & U. Manber (1992b) "AGREP - a fast approximate pattern-matching tool". *Proceedings of the Winter 1992 USENIX Conference, San Francisco, USA, 20.-24. Jan. 1992,* pp. 153-162.

Zobel, J. & P. Dart (1996) "Phonetic string matching: Lessons from information retrieval". In H.-P. Frei *et al.* (eds) *SIGIR 96* New York, Association for Computing Machinery, pp. 166-172.