Speak Out! The Journal of the IATEFL Pronunciation Special Interest Group, 57, 43—52.

A Set of Keywords Representing Vowel Phonics for EFL Learners

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This article proposes the use of a set of keywords which demonstrate the relationship between vowel phonemes and their typical spellings with references, particularly, to vowels before /r/. This set is organised into two tables for ease of use: one corresponding mainly to single vowel letters and the other to three kinds of ambiguous vowel digraphs. The set is useful in teaching EFL learners both in Japan and in other countries where the principal model of pronunciation is North American English (NAm). For EFL learners, rhoticity is an advantage of NAm pronunciation, but its systematic laxing of vowels before /r/ is not. The tables take into consideration that the same letters can correspond to different phonetic qualities in English, and that learners often doubt the validity of phonic rules when they notice this. We need to balance covering the entire vocabulary on one hand, and recognizing economically viable rules on the other.

English has more vowels, consonants and consonant clusters than many other languages, including Japanese. In Japanese, most syllables consist of (C)V, with consonant clusters and checked syllables being very limited in number. Therefore, Japanese learners have a hard time acquiring phonemic awareness, because it requires isolating a single consonant without a following vowel, as well as remembering the English sounds arranged in syllabic structures, something which is not allowed in Japanese. What is more, Japanese students learn how to transliterate Japanese words, but they are often left to their own resources when it comes to learning how to spell English words, and associating those spellings with the correct pronunciation.

In the classes where I teach English phonetics, which are intended to train future teachers in Japanese elementary schools, I have just started to take phonics seriously. I have also started, with the hope of showing that rules really work, selecting a semi-minimal set of words to exemplify both the English phonemic system and phonic rules at the same time. These words are presented in Tables 1 and 2 below, and despite still being a work in progress, so far I have found this approach more promising than my own first experiences studying English spelling-sound correspondences. While the tables were created to help learners in Japan,

where audio materials are mostly NAm (Sugimoto & Uchida, 2016), they do have the potential to help learners elsewhere also.

Phonics as an art

My students' favourite rule of phonics is that of the 'magic *e*', which changes *mat* into *mate*, *pet* into *Pete*, *Tim* into *time*, *not* into *note*, and *cut* into *cute* (Tsuruya, et al., 2010a). This rule is intended to allow students to associate the default checked-vowel pronunciation with the name-of-letter pronunciation before a consonant letter followed by a final *e*. The rule also works as an example of phonemic minimal pairs, with each word having the vowel phoneme exchanged in the same consonantal environment. Although the 'long' *e* sound, is in fact spelled more frequently with <ee>, the rule gives the first *e* in *Pete* the status of a regular spelling. This is a wise thing to do, because the letters *a, i, o*, and *u* are regularly read 'before a consonant letter followed by a final *e.*' What counts here is the generalisability, not the quantity of examples. Frequency of use for spelling rules is an interesting subject, but for EFL learners, generalisability on an abstract level commands our attention more than statistics.

That being said, not all rules bring enough benefit to justify their application. Concerning the vowel digraphs, words such as *key*, *rain*, *road* and *low* can be said to contain 'polite vowels', so called because the first vowel 'says its name' and the second vowel concedes (Tsuruya, et al., 2010b). Tsuruya, et al (2010b) lists the polite vowels as <ai/ay>, <ea/ee/ey>, <ie>, <oa/ow>, <ue/ui> in words such as *rain, May; tea, tree, key; pie; boat, row, snow; blue* and *fruit*. However, as far as the spelling <ey> is concerned, the 'polite vowel' rule is misleading, first because it is important that final <Vy> equals medial <Vi> as the case of <ai/ay>. Secondly, because <ei/ey> usually represents /eɪ/ as in *they, survey, vein and reign,* the word *key* is probably the only word with a stressed /i/ represented by <ey>.

However, there is another factor we have to consider. What we regard as regular defines the typical readings of the letter(s), but not all regularly spelled words look familiar. In fact, we know that in language in general, frequently used words can afford to be irregular; when spelling English words, many function words are sight words, which are remembered as entire words, and not as assemblies of their component parts. If learners have a very limited vocabulary, it is especially difficult to tell what is regular and not, and unfortunately, there are often more exceptions than regular examples. Learners do not find it rewarding to memorise the rules, which are found regularly in difficult words. Therefore, recognising learner-friendly spelling rules in English is probably not a science, but an art, which enables the presented information to appeal to the learner, and in so doing, makes the rules appear memorable and their application enjoyable.

Keywords representing the vowel phonemes

A phoneme is defined as an abstract category of sounds which is used distinctively in (a variety of) a language. The act of replacing one phoneme in a word with another produces either another word or an unacceptable realization of the original. Unfortunately, this explanation has been too abstract in my classrooms, where listing a variety of allophones of a particular phoneme in the native language is simply beyond the comprehension of most students.

As such, I decided for my English phonetics course that I would expand pairs of words with an without magic-e in the unit from Tsuruya et al (2010a) and use it to make a minimal set, to see if any combination of consonants before and after the vowel can produce a minimal *set* of words which are real words in English, and which differ only in the choice of possible strong-vowel phoneme. The pair *pet-Pete* was promising, and I saw some other combinations. I have not found an almighty condition of consonants yet, but the environments /k_t/, /p_t/ and #/_l/ have 14, 13 and 12 words, respectively (*cat-Ket-kit-cot-cut-cart-court-Kurt-Kate-Keet-kite-coat-cute-caught*; *pat-pet-pit-pot-putt-put-part-port-pert-Pate-Pete-Pote-pout*; and *Al-ell-ill-earl-ale-eel-isle-ole-yule-all-owl-oil*). The last group of words are often pronounced as disyllabic words with an inserted schwa before /l/, but the group is very unusual in having both /aʊ/ of *owl* and /ɔɪ/ of *oil*. I would like to settle for combining the second and the last groups to have a group of 17 words: *pat-pet-pit-pot-putt-put-part-port-pert-Pate-Pete-isle-ole-yule-all-owl-oil*; this should do as a semi-minimal set of keywords representing the strong vowels of NAm English. With this set, you can truly say that replacing a vowel sound with another would produce another/wrong word in English. These 17 words appear in the column “Keywords” in Table 1.

In the Keywords column, each of the three spellings <ar>, <or> and <er > (<er/ur/ir> to be precise) is treated as representing an r-coloured vowel, where <r> has a status of post-nucleic semivowel. The vowel spelling in *yule* is rather unusual in having the spelling <yu>, representing the sequence /ju/ of a semivowel + a tense monophthong; this sequence is usually represented by a single letter <u> as in *cute*. Another possible drawback of this set of Keywords is that many say North Americans pronounce the word *all* with the same vowel (/ɑ/) as <o> in *pot*, but we also know that they understand us when we pronounce *all* with [ɔː] or [ɒː], as newscasters routinely use the more rounded/closer vowel than that of *pot*. In my opinion, EFL learners have a right to be able to remember this vowel as /ɔ/, because we (learners and EFL teachers alike) would then be able to say that the word *all* has the same vowel as in *for*, *corn*, *fore* and *thought*. We can say this in all major contemporary native-speaker varieties of English, whether they are rhotic or not, or whether duration is phonological or not. The duration of vowel is non-distinctive in NAm, so we do not include the length mark in the notation of phonemes in this article.

	Keywords	Additional keywords	/wV/	<Vrr>	<VVr>	<Vr>
1	pat		wax	carry		parody
2	pet	Keller	well	merry	fair, their, wear	cherish, sincerity, care, parent
3	pit	killer	willow	mirror	beer, fear	miracle, here, cereal
4	pot	collar, spa	Watt, want			
5	putt	color	won			
6	put	cook	wood		poor	lure
7	part	carl		starry, sorrow	bazaar	car, carnal
8	pert	curl, skirt	work, worry	err, curry, squirrel	earn, journal, courage	per, permanent
9	port		warm, warren, quarter	horror, porridge	court	for, form, forest, core
10	Pate	kale	wake		(fair, their)	(care, parent)
11	Pete	keel, machine	weak		(beer, fear)	(here, cereal)
12	isle	pie, high	wile			fire
13	ole	coal, soul, window	woke		(oar)	(core)
14	yule	queue	woo			(lure)
15	all	caller, soft, cause, law	walk, water		(dinasaur)	
16	owl	out, cow*	wow		sour	
17	oil	coil			foyer	

Table 1. Relationship between North American vowel qualities and their typical spellings

Table 1's inclusion of "Additional keywords," is mainly due to the letters <o> and <a>. The minimal trio *collar-color-caller* is very confusing for EFL learners, because they are not given any clues as to which of them has the most typical usage for these letters. As the column "Keywords" makes it clear, *collar* has the most typical <o> because it uses the relationship <o>≡/ɑ/ in *pot* (line 4) and the first vowel sound in

* In the published version, the word *cow* was misspelled as *cowl*.

color belongs to line 5 (/ʌ/) together with *putt*. The word caller also has a regular spelling; it could also have been spelled as **cauler* or **cawler* for learners' sake. Learners inevitably come across words like *color, come* and *love*, at a very early stage of learning, and this confusion must be set straight as soon as possible.

The column 'Additional keywords' also lists *curl* and *skirt* next to *pert* in line 8. These keywords together represent the relationship <er/ur/ir>≡/ɚ/. In Merriam-Webster's Dictionary App (M-W), this vowel sound is phonemicized as "ər" and it uses the distinction between 'ər–' and 'ə–r', where a hyphen means a syllable boundary, to list two different possible ways of pronouncing words such as *curry, hurry* and *worry*, the former expressing an American r-coloured vowel, and the latter the shorter British, vowel of 'cut' plus intervocalic r, roughly speaking. I wish to follow the Japanese tradition of using the symbol /ɚ/because it is the phonetically motivated choice in texts such as in Takebayashi et al (2013). I would think it unwise to deprive this r-coloured half-long monophthong of the same status of a phoneme as other vowels, because that would burr the distinction in writing between *perm* and *merry*, or firm and *mirror*, although *churn* and *hurry* share both spelling and sound in NAm. I have come across NAm-speakers saying *America* and *mirror* with [ɚ] or [ɚː], but this is not so common yet.

To many native speakers, the letter <r> in the spellings <ar>, <or> and <er/ur/ir> probably makes better sense as a consonant closing the syllable, but in <er/ur/ir>, it changes the pronunciation of the preceding single vowel letter so much that it joins in the same nucleus with it. And giving a phonemic status (/ɑr/ on line 7) to <ar> in *car* and *carl* is beneficial because it makes it easy to place *parody* on line 1 with *pat,* and to place *parent* on line 2 with *pet* (though spelling convention and British English would find it more sensible to place *parent* on line 10 with *Pate*). The spelling <or> may be less important, because the phonological statuses of <o>'s in *for*, *form, fore* and *forest* do not really matter, as the historically long <o>≡/oʊ/, which is suggested by the spelling of *fore*, is pronounced in the same way in contemporary English as the vowel in *for* and *form*.

It is not certain, however, in the phonetic syllabification, if such a thing exists, whether the sound represented by <r> belongs to the preceding syllable, or to the following one when it is sandwiched by vowels. For many words with spellings <er/ur/ir>, I already wrote above that M-W lists both syllabifications. For words with <ar> or <or>, M-W also lists them. In the case of *caring* and *wearable*, M-W does not give them pronunciation entries, and only gives pronunciation entries to *care* and *wear*. It is probably not possible to syllabify /r/ at the end of a morpheme separately from the preceding vowel, so /r/ in *caring* and *wearable* is unlikely to have the same

dual pronunciations M-W described in *parent* and *transparent*, possibly making the preceding vowel sound different accordingly. The lax vowel before the syllable-initial /r/ is in an open syllable in words described in M-W as having this pronunciation, and if it is pronounced differently from the vowel before tautosyllabic /r/, NAm lax vowels can freely appear in syllable-final positions and they can almost be ready to appear at the end of a word. This is a loss of distinction between tense and lax opposition in NAm English. The NAm lexical tendency of not going through trisyllabic shortening, or the tendency to have a tense/diphthongal vowel in *patriot*, *vitamin* and *privacy*, might be related to this.

Relationship between single vowel letters and their pronunciation

The column next to "Additional keywords" in Table 1 is labelled as "/wV/" to account for the spellings <wV>, <whV> and <quV>, where /w/ changed the vowel into a more narrow/ open quality, most likely for a historical reason, changing <a> and <o> into the quality otherwise noted by <o> and <u> respectively. In this group of words, the following vowel sound is usually written with a single vowel letter, not <VV>, and this makes reading <a>, <o> and <u> a very difficult exercise for learners. It could be said that the semivowel /w/ changes the quality of the following vowel anyway, even in a synchronic analysis, but the teacher's helping hand is particularly appreciated here. The words *Watt* and *want* can be in line with *pot* on line 4, though *want* is pronounced by many with the /ɔ/ of *all*, which is the first variant listed in M-W, and with /ʌ/ of *putt*, by quite a few, especially when we spell *wanna* instead of *want to*. On line 9, words with 'non-final <or>', 'non-final <orr>' and '<a(r)> after /w/' often have a second entry in M-W with pronunciation for /ɑ/ quality. All of these often confuse learners' understanding of what the single vowel letters represent, and if the size of the table is not too large for them, having a table like Table 1 can reassure the learners that using its keywords correctly would be an achievable goal.

Just as the /w/ sound modifies the quality of the following vowel, <r> changes the quality of the preceding vowel. I used a list of 7820 words by Tono et al. (2016) to search and count the number of spellings <ar(r)>, <er(r)>, <ir(r)>, <or(r)> and <ur(r)>. I then looked up quite a few of these words in M-W to see which vowel phoneme is recorded as the first entry in the pronunciation corresponding to the single vowel letters before <r(r)>. Because Tono et al. (2016) lists the CEFR level from A1 to B2 in their judgement for all the words, I also went back to the list to see if the tendency for a particular sound differs between levels. To my surprise, the differences between levels were not noticeable, perhaps because these 7820 words belong to the same basic part of the English vocabulary. If learners can be satisfied with Table 1, it would not be necessary to worry about learned words which are even more regular.

The most typical spellings for the vowels /ɪr, ɛr, ær, ɑr, ɚ, ɔr/ before a vowel should be <er, ar/er, ar(r), arr, ur(r), or> respectively, as in *cereal*, *parent/sincerity, parody/parrot, starry, current*, and *forest*. If we think of these vowels before a consonant, <er> is included in the typical spellings for /ɚ/as in *permanent*. When I arrived at these statements, they did not satisfy me as a teacher because it was not 'beautiful', and also because it did not offer any real explanation to me. What information should I present to my students in class? I have been procrastinating in answering this question, but I must eventually settle on a table of manageable size that allows us to see this "generalization," put in proper perspective. The three columns "<Vrr>" and "<Vr>" in Table 1 are my attempt at doing this.

The words in parentheses are in their traditional positions in non-rhotic varieties of English. Some of these words are placed elsewhere on lines 2 to 9 without brackets to reflect NAm laxing of the vowels before /r/. This type of laxing is phonological, and therefore does not distinguish <VVr> from <Vr>. Learners would be able to make themselves understood in using the traditional pronunciations in parentheses, but they should be able to perceive the words correctly if they hear NAm models pronouncing with lax qualities. This is not difficult to do because the lax and tense/diphthongal qualities are very similar.

In M-W, the spellings <ur> and <ir> in *hurry*, *currency*, *squirrel*, and *sirup/syrup* have both [ɚ] and [ʌɹ] pronunciations without any regional labelling. The spelling <er> cannot be pronounced with [ʌɹ] probably because <e> has a greater presence in <er> than <u> or <i> do in <ur> or <ir>. This may also be because <er> is used heavily in writing /ɛr/ and /ɪr/ in such words as *merry*, *sincerity* and *experience*. I have noticed some Modern RP speakers on the BBC World Service using [ɛː] as well as [ɛ] or [e] in words like *sincerity*. I would say their pronunciation must have been influenced by American and other international varieties of English, phonemicizing the vowel together with their vowel in *square*, not that in *pet*. To add to the confusion, M-W lists the pronunciation with /ɪr/ as the second variant (after the first /ɛr/) for *sincerity*, probably by association from *sincere.*

Of course, in speech, the more syllables words have, the easier it is to distinguish them and the less important it is to pronounce the individual vowels correctly. As a result, the vowels between these lines of phonemic distinction would be less important in polysyllabic words. Unless learners need to understand this neutralization of lax and tense vowels before /r/, they may be able to pronounce what they like in longer words. Our duty would be to be able to answer their questions on the phenomena.

Relationship between vowel digraphs and their pronunciation

As to the spelling of two vowel letters <VV>, learners will benefit by being exposed to several different readings of each sequence, namely, of <ea>, <ou> or <oo>, which are listed in Table 2 together with the "Keywords" and "Additional keywords" from Table 1. Another column may be added for <au>, because the words like *cauliflower* and *aunt* have interesting variations in British and NAm English, a well-known difference between the two accents.

	Keywords	Additional keywords	<ea>	<ou>	<oo>
1	pat				
2	pet	Keller	bread, wear		
3	pit	killer	fear		
4	pot	collar, spa			
5	putt	color		country	blood
6	put	cook		could, tourism	cook, poor
7	part	carl	heart		
8	pert	curl, skirt	earn	journal, courage	
9	port			court	door
10	Pate	kale	break, (wear)		
11	Pete	keel, machine	weak, (fear)		
12	isle	pie, high			
13	ole	coal, soul, window		soul	
14	yule	queue		group	
15	all	caller, soft, cause, law		thought	
16	owl	out, cow*		pronounce, sour	
17	oil	coil			

Table 2. Relationship between some vowel digraphs and North American vowel qualities

* In the published version, the word *cow* was misspelled as *cowl*.

In Table 2, the sequence <ea> corresponds to vowels in six different lines, or six different phonemes, making it hard to designate any line as the most typical reading for learners. The digraph <ou> corresponds to an even greater number of lines/phonemes: eight. The double diagraph <oo> is easier than <ou>, as it corresponds to only three probable phonemes, with /ʌ/ for *bl<u>oo</u>d* being less common than the other two which we identify with /ʊ/ in *c<u>oo</u>k* and *poor*, and /ɔr/ in *d<u>oor</u>*.

Phonetics involved in NAm vowel system (in conclusion)

Table 1 suggests, among other things, that NAm lax vowel phonemes /ɪ, ɛ, æ, ɑ, ʌ/ appear in words such as *p<u>i</u>t*, *p<u>e</u>t*, *p<u>a</u>t*, *p<u>o</u>t*, and *p<u>u</u>tt*, whereas tense/diphthongal vowels /aɪ, i, eɪ, oʊ, u, aʊ/ appear in words such as *<u>i</u>sle*, *P<u>e</u>te*, *P<u>a</u>te*, *<u>o</u>le*, *y<u>u</u>le*, and *<u>owl</u>*. The phonemes /aɪ, aʊ, ʊ/ do not change their qualities before /r/ in words showing '<i>≡/aɪ/' (*t<u>i</u>re* or *t<u>i</u>e*), '<ou/ ow>≡/aʊ/' (*s<u>ou</u>r* or *c<u>ow</u>*), and '<oo>≡/ʊ/' (*p<u>oo</u>r* or *f<u>oo</u>t*), but most other vowels seem to change their qualities into half-long, lax ones in NAm English. This did not take place in spelling, but in sounds. Therefore, it is not right to resort to the spellings to answer questions on the sound change. The spellings of the example sounds, however, do confuse people who are learning to associate sounds with phonemes. M-W seems to incorporate the laxing of vowels before <r> more readily in antepenultimate positions than in penultimate positions.

To conclude, Tables 1 and 2 have been prepared with a principle in mind: that confusing words should be listed even if the vowel spelling is not the most common or regular way of spelling the vowel phoneme in question. The influence that each of the semivowels /w/ and /r/ exerts on the following/preceding vowel spellings has also been acknowledged. The vowels on lines 1-9 are traditionally considered to be lax vowels, and those on the lower lines tense/diphthongal. NAm has lost some distinctions between lax and tense readings before /r/, but learners do not have to copy this in their own pronunciation. Teachers should feel comfortable with Tables 1 and 2, as these will help to answer phonemic questions learners may ask them.

Phonemic distinction between lines in the tables must be maintained in learners' speech, especially in commonly used, shorter words. But as long as their interlocutors understand them, the mental phonemicization in the learner's mind should not matter. So long as learners can take in the tables, and do not find them to have too much information, they can reassure learners that using the keywords correctly in their speech is actually an achievable goal.

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References

Merriam-Webster App (2016). *Merriam-Webster Dictionary Version: 3.5.1*. Springfield: Merriam-Webster. Retrieved and last updated on September 30, 2016 from https://itunes.apple.com/nz/app/merriam-webster-dictionary/id399452287?mt=8

Sugimoto, J. & Uchida, Y. (2016). A Variety of English Accents Used in Teaching Materials Targeting Japanese Learners. *Proceedings of ISAPh2016: Diversity in Applied Phonetics*. 85–89.

Takebayashi, S., Shimizu, A. & Saito, H. (2013) *Kaiteishimpan Shokyu Eigo Onseigaku [Elementary English Phonetics, New Edition]*. Tokyo: Taishukan Shoten.

Tono,Yukio et al. (2016). The CEFR-J Wordlist Version 1.1. Tokyo: Yukio Tono Laboratory at Tokyo University of Foreign Studies. Retrieved April 2, 2016, from http://www.cefr-j.org/download.html

Tsuruya, M,, Sumitomo, N. & Doi, Y. (2010a). Magic e. In *DVD-de Phonics (Phonics with DVDs)* (Vol. 2). Tokyo: Nippon Columbia Co., Ltd.

Tsuruya, M,, Sumitomo, N. & Doi, Y. (2010b). Polite Vowels. In *DVD-de Phonics (Phonics with DVDs)* (Vol. 3). Tokyo: Nippon Columbia Co., Ltd.

Tsuruya, M,, Sumitomo, N. & Doi, Y. (2010c). Vowel Digraphs. In *DVD-de Phonics (Phonics with DVDs)* (Vol. 4). Tokyo: Nippon Columbia Co., Ltd.