



The practical value of formal graphophonemic rules - insights from lexical frequency and linguistic competence

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The practical value of formal graphophonemic rules - insights from lexical frequency and linguistic competence

Dearest *creature* in *creation*
 Study English *pronunciation*,
 I will teach you in my *verse*
 Sounds like *corpse*, *corps*, *horse* and *worse*.
 I will keep you, *Suzy*, *busy*,
 Make your *head* with *heat* grow dizzy;
Tear in eye, your dress you'll *tear*;
 So shall I oh *hear* my *prayer*.
 Just compare *heart*, *beard* and *heard*,
Dies and *diet*, *lord* and *word*.
Sword and *sward*, *retain* and *Britain*
 (Mind the latter how it's *written*).
 Now I surely will not *plague* you
 With such words as *plaque* and *ague*,
 But be careful how you *speak*,
 Say: *break* and *steak*, but *bleak* and *streak*.
 G. N. Trenité *The Chaos* (extract; Crystal 2003:273)

1) INTRODUCTION

The unpredictable nature of the spelling-to-sound relationship in English is notorious, and the poem from 1922 illustrates it ever so well. Composed of 274 lines in its later extended version, *The Chaos* establishes a whole inventory of traps that await learners of English. While at a more advanced level we might forget how contradictory and unreliable the spelling of words used to be at the beginning, English writing does seem like chaos. This is important to remember because beginners can be daunted by frequent contradictions and the (initial) lack of reliable clues. It is also necessary to realize that our mind instinctively looks for patterns that stand out, it wants to make sense and we tend to make generalisations when learning a language just as we do in everyday life. We see how *lord*, *storm*, *horse* are pronounced, for instance, and we make predictions (unconsciously) as to how *word*, *worm*, *worse* will sound like. Clearly, given this intuitive search for patterns coupled with the opacity of the spelling system, students need clear guidelines right from the beginning to sort out the apparent disorder.

Owing to the complexity of the English spelling system¹, direct links between letters and pronunciation are not easy to find. Yet, the written word plays a central role in the learning process, especially in a classroom context. This key aspect does not necessarily stem from the teacher's approach and preferences. On the contrary, most of the teaching methods today emphasize, quite justly, the importance of the amount of time spent in active interaction, and speaking skills are consciously prioritized. Writing, nevertheless, remains an essential tool in interiorizing a new language: not only are the meta-skills interconnected whereby developing

¹ This paper discusses links with the British English spelling system; see *The Cambridge Encyclopedia of the English Language* (Crystal, 2003: 301-307), for example, for the differences between British and American English.

reading and writing will assist progress in speaking and listening, but also frequent everyday practices in the educational context, from note-taking to drawing mind-maps rely on the written form.

This paper was born from the cross-fertilization of these views: because the spelling of words in English is not transparent and students need help in matching sounds to graphemes, and because many learners use writing just as extensively as speaking when learning a new language, graphophonemics can enhance learner autonomy from the beginner level. Therefore, the aim of this paper is to take a critical look at the complexity of available graphophonemic rules, most of which remain obscure to teachers and teacher trainees, carry out practical tests on a selection of simple rules, and draw up recommendations for the active use of letter-to-sound rules.

In the following sections, some of the well-known graphophonemic reading rules used in teacher training syllabi in France will be reviewed and applied. The central interrogation is how *robust* they are for an average student learning English, and how *reliable* they are since teachers do not have an instant command of the entire lexicon in order to generate insights as to the nature and number of exceptions to a given rule. This focus on practicality serves, ultimately, to convince teachers that what they learn during their preparation for an exam is worth transmitting in their actual teaching practices. It is not the aim of the paper to provide an overview of the system of correspondences between letters and sounds, several excellent textbooks² exist on the subject. The selection of rules, restricted to single vowel letters in a stressed position, is guided by their concrete utility: simple, easy-enough to use in the classroom, thereby essential to reinforce student autonomy.

2) PRELIMINARY STEPS AND GROUND RULES: PHONES VS. GRAPHEMES

Many will agree that the very first step in teaching pronunciation in English is to let students realise that 1) one letter can spell different sounds, and 2) the pronunciation of any vowel letter depends on word stress. Depending on the mother tongue of the students, some will logically expect that one grapheme is used to spell one sound: the alphabets used in Russian, Turkish, Italian, Spanish, Finnish and Hungarian, to mention just a few, are phonemic in the sense that one letter spells one sound (although it is quite frequent that one sound is encoded by more than one letter or letter combination). Thus, it is useful to point out that there are 21 letters for 24 consonants and, even more importantly, 6 letters for 20 vowel sounds in English³ (<y> is both a consonant and a vowel letter). Any exercise with a collection of simple words in which students are asked to compare the number of letters with the actually pronounced sounds will provide an opportunity to discuss different accents, to look at the pronunciation of silent letters and <r>, and to discover double vowel sounds (diphthongs) that do not exist in all languages. Such a simple activity can prove to be challenging for many students because they are used to seeing and relying on letters.

The second point, that the pronunciation of any vowel letter in English will depend whether or not it occurs in a stressed syllable, calls for some practice in raising awareness and explicit clarification to speakers of languages in which all syllables are pronounced with the same

² See Fournier (2009), Cruttenden (2008) or Deschamps et al (2004), for example.

³ Unless stated otherwise, the accent used in the paper is Southern British English (SBE; also called General British and modern RP), the standard accent heard in the UK. Comparing the pronunciations of a letter in different English accents can also be beneficial once the learner has acquired a good command of oral English.

degree of prominence. The reduction of vowels occurring in an unstressed syllable is one of the key aspects of successful communication in English. Words and sentences display a predictable pattern of accentuation and a reasonable amount of such rules is part of every English course book and phonological text book. Graphophonemic rules discussed in the following sections are concerned with stressed vowels only.

Monophthongs	Diphthongs
/i:/ <i>comple<u>t</u>e, lea<u>f</u>, see, pe<u>o</u>ple, pi<u>e</u>ce</i>	/eɪ/ <i>ma<u>k</u>e, da<u>y</u>, grea<u>t</u></i>
/u:/ <i>rude, foo<u>d</u>, do, blu<u>e</u>, juic<u>e</u></i>	/aɪ/ <i>ti<u>m</u>e, cry, li<u>g</u>ht</i>
/ɜ:/ <i>serv<u>e</u>, turn, bir<u>d</u>, wor<u>k</u>, sear<u>ch</u></i>	/ɔɪ/ <i>nois<u>e</u>, to<u>y</u>, coi<u>n</u></i>
/ɔ:/ <i>hor<u>s</u>e, tal<u>k</u>, boar<u>d</u>, caus<u>e</u>, floo<u>r</u></i>	/aʊ/ <i>hou<u>s</u>e, co<u>w</u>, allo<u>w</u></i>
/ɑ:/ <i>car, hea<u>r</u>t, laug<u>h</u>, last, fa<u>th</u>er</i>	/əʊ/ <i>know, roa<u>d</u>, ol<u>d</u></i>
/ɪ/ <i>sit, ci<u>t</u>y, villa<u>g</u>e, rich, with</i>	/ɪə/ <i>fea<u>r</u>, care<u>er</u>, we<u>ir</u>d</i>
/ʊ/ <i>book, bu<u>t</u>cher, wo<u>m</u>an, cou<u>l</u>d, put</i>	/eə/ <i>sha<u>r</u>e, bea<u>r</u>, mayo<u>r</u></i>
/e/ <i>se<u>t</u>, bre<u>a</u>th, hea<u>d</u>, ma<u>n</u>y</i>	/ʊə/ <i>po<u>o</u>r, tou<u>r</u>, cu<u>r</u>e</i>
/ʌ/ <i>sun, son, come, cou<u>n</u>try, floo<u>d</u></i>	
/æ/ <i>ha<u>n</u>d, ma<u>rr</u>y, ca<u>t</u></i>	
/ɒ/ <i>dock, gon<u>e</u>, want, wha<u>t</u>, coug<u>h</u></i>	
/ə/ <i>ab<u>o</u>ut, sup<u>po</u>se, fam<u>o</u>us, fa<u>th</u>er</i>	

Table 1. The vowel phoneme inventory of SBE

There are 20 vowel phonemes in SBE (see Table 1. above) and 16 in General American (GA; the general standard accent of the USA, also called Network English and Standard American English); this number will vary according to regional/social varieties of English, the tests described below were carried out in the standard SBE accent. Even within one accent there is considerable variation, and the careful reader will notice that while the table follows the conventions set out in the reference dictionaries (Jones 2011 and Wells 2008), in SBE today /ʊə/ tends to be replaced by /ɔ:/, especially in frequent words such as *sure*, and /eə/ is increasingly realised as a monophthong /ɛ:/.

Monophthongs in SBE are typically divided into two groups: free vowels /i: u: ɜ: ɔ: ɑ:/ and checked vowels /ɪ ʊ e æ ʌ ɒ/ because the latter set has to be followed by a consonant when occurring in a one-syllable word whereas the other monophthongs and the diphthongs can occur freely. This free-checked distinction will be applied to vowel letter positions in the discussion of the next section.

3) GRAPHOPHONEMIC RULES PUT TO THE TEST

The study of graphophonemics has uncovered a number of tendencies that can be expressed in formal rules predicting the sound of each English grapheme in different positions in the word, but owing to the specialized language used in phonology many feel that they remain inaccessible and far too complex. For instance, the rule⁴ below states that

$$\langle i \rangle \Rightarrow \check{V} _ C(r) \text{ i/e/u/y } V$$

the letter <i> is pronounced /ɪ/ when followed by a consonant (or by a consonant and <r>) and one of the letters <i e u y> plus a vowel. Words that obey this rule are, for example, *initial*,

⁴ Deschamps et al. (2004: 199 / 215).

ileum, sinuous, minyan, vitriol, vitreous, tonitruous, Amphitryon. Angled brackets, as in <i>, are used to refer to graphemes, forward slashes /l/ show the pronunciation in IPA symbols, capital V means 'vowel' while capital C denotes 'consonant'. Another example⁵

$$\langle a/e/o \rangle \Rightarrow \check{V} _ C(r) u/y V$$

predicts the pronunciation of <a>, <e> and <o>, when they are followed by a consonant and <u> or <y> plus a vowel, or a consonant and <r> plus <u> or <y> and a vowel: in such cases they are pronounced /æ/, /e/ and /ɒ/, respectively, as in *manual, ingenuous, botryoid*.

Also, every rule has exceptions. These exceptions can be systematic (in other words regular in their irregularity) and they can be unpredictable. Hence, many will question whether or not the use of complex phonological environments and variable patterns is beneficial for an average learner of English. If the rule's application is restricted to a small number of words, if the words are fairly uncommon, if the formulation of the rule has to incorporate too many details in order for it to account for pronunciation values properly, if there are too many exceptions, the rules are, on the whole, too costly for learners.

The best graphophonemic rules are the simplest. Among the basic rules concerning stressed monographs there are four that link each of the six vowel letters to their most frequent predictable pronunciation in a stressed syllable. We can call them basic or default values.

I. Split digraphs - Free value	II. Vowel letter + consonant(s) - Checked value
<ul style="list-style-type: none"> ◦ <a.e> in <i>mace</i> ◦ <e.e> in <i>scene</i> ◦ <i.e> in <i>mine</i> ◦ <o.e> in <i>scone</i> ◦ <u.e> in <i>mute</i> ◦ <y.e> in <i>rhyme</i> 	<ul style="list-style-type: none"> ◦ <a > in <i>macro</i> (cat) ◦ <e> in <i>scent</i> (set) ◦ <i> in <i>mint</i> (kit) ◦ <o> in <i>sconce</i> (hot) ◦ <u> in <i>mutt</i> (rut) ◦ <y> in <i>hymn</i> (gym)
III. Split digraphs with an <r> - R-coloured free value	IV. Vowel letter + <r> - R-coloured checked value
<ul style="list-style-type: none"> ◦ <are> in <i>care</i> ◦ <ere> in <i>mere</i> ◦ <ire> in <i>dire</i> ◦ <ore> in <i>store</i> ◦ <ure> in <i>sure</i> ◦ <yre> in <i>tyre</i> 	<ul style="list-style-type: none"> ◦ <ar> in <i>car</i>(t) ◦ <er> in <i>per</i>(k) ◦ <ir> in <i>fir</i>(m) ◦ <or> in <i>for</i>(k) ◦ <ur> in <i>cur</i>(t) ◦ <yr> in <i>myrrh</i>

Table 2. The basic values of stressed vowel letters in SBE

The first series consists of letter-name pronunciations (Table 2., I. above), they occur when the vowel letter is followed by a consonant letter and a mute <e>: *mace, scene, mine, scone, mute, rhyme*. In order to emphasize that the <e> has an impact on the pronunciation of the preceding vowel letter, we can also consider these spellings as split digraphs (Brooks, 2015), the digraph <ae> split by an intervening consonant: *mace*, for example.⁶ When we remove the silent <e> we get another series of default pronunciations (that appear in II. in Table 2. above): *cat, set, kit, hot, rut, gym*. This basic value applies with either several consonants that follow the stressed vowel, *macro, scent, mint, sconce, mutt, hymn*, or just one consonant but at the end of the word. Combining the two positions with the five vowel letters (<y> behaves like <i>), we set out with ten default values.

⁵ Deschamps et al (2004: 200, 215).

⁶ This is one of the best-known graphophonemic rules; it is sometimes referred to as magic <e>.

The letter <r> is also a reliable help in letter-to-sound rules, its influence on the pronunciation of the preceding vowel letter is shown in the second row in Table 2. above. In non-rhotic accents such as SBE, it is best to point out that the letter <r> itself is only pronounced when immediately followed by another vowel sound. In any case, and in most accents, word pairs like *cat-car*, *hen-her*, *sit-sir*, *not-nor*, *fun-fur*, and then *car-care*, *her-here*, *fir-fire*, *curt-cure* will help learners create logical correspondences. Note that <r> can be followed by further consonants other than <r>. The pronunciation of double <rr> is also predictable but the default values will depend on whether or not <r> occurs in the same morpheme, and on the type of the ending: *carrot* (one morpheme), *barring* (two morphemes, productive suffix), *barren* (two morphemes, non-productive ending)).

Although the combination of the five vowel letters with and without <r>, with and without a mute <e> could allow the encoding of all twenty vowel phonemes in SBE, we obtain only 17 (and one of them is a triphthong, not officially a member of the minimal vowel inventory). The rules for stressed one-letter graphemes seen so far do not provide for the vowels in *push*, *house* and *choice*.

Nevertheless, if such simple letter-to-sound rules could help learners grasp English pronunciation faster, they could be used early on in the learning process. The question is if they work reliably or not, and one of the ways to test this is with very frequent words. Sight words used in education compile the most common words in English in order of frequency, and are said to account for a large percentage of the words used in schoolbooks, library books, newspapers, magazines, etc.⁷ One of them, *Fry's Instant Words*, will be used here to test the rules. The first and the second hundred words are given in the Appendix.

Out of the total occurrences of the five vowel letters that fit the basic rules in the first hundred most frequent Fry words, <e, i, u> are the most regular: *then, them, get, these, her, in, is, it, with, his, this, which, if, will, him, into, sit, did, like, time, write, first, but, up, number, use*, when stressed, all obey the rules. Exceptional are *were, there* and *find*. While the overall proportion of regularity is ninety percent for <e, i, u>, <a> displays 33% and <o> shows 38% of irregular occurrences. Words that do not obey the rules with <a> and <o> are: *was, what, are, have, all, called, and one, some, come, words, other*, respectively. We can also notice that digraphs are just as frequent as single-letter graphemes: <ou> *you, your, about, out, would, could*, <ey> *they*, <ai> *said*, <ea> *each*, <ei> *their*, <ow> *how, now, down*, <oo> *look*, <ee> *see, been*, <eo> *people*, <oi> *oil*, <ay> *way, day, may* can be found in the first hundred most common words used in an educational context.

The results are quite similar in the second hundred most frequent Fry words. Here, <e>, <i> and <u> are again the most regular with some notable exceptions such as *where, live, give* and *right*. On the other hand, <a> and <o> are very irregular with exceptions including *after, ask, answer, want, also, small, change, and only, most, old, work, world, another, mother, move*. Some further digraphs can be added: <ew>, <oy>, <oe>, <au> as in *new, boy, does* and *because*. The total count for single-letter vowels in a stressed position can be found in the Appendix, and continuing the analysis for the other 800 frequent words given in Fry's list can be a valuable training in the use of the basic rules for anyone who feels tempted to unearth further frequent irregularities such as *high, might, night, don't, both, cold, hold, walk, watch, half, done, love* and *gone* (along with a majority of regular pronunciations).

⁷ See Farrell, Osenga and Hunter (2013), for example.

3.1 The commonest words and the challenges they pose

It seems that the direct practical value of the basic rules is undermined by some of the most common words, and by the fact that as soon as a word is longer than one syllable, stress conditions have to be accounted for first. Thus, although basic rules are useful because they are relatively simple in their formulation, and despite the fact that they work for a majority of words, they are not sufficient for learners in themselves. Exceptions will quite simply hide the regular pronunciations because they are learnt among the first few hundred words. Individual, irregular words weigh in on the impact of regular words resulting in learners' incomprehension of the logical relationships between letters and sounds. In addition, the pronunciation of the most frequent words in English⁸ depends on their position in the discourse. Because of their importance due to their grammatical function and their frequent use, the pronunciation of function words has to be taught explicitly (a comprehensive and accessible overview of sentence stress and function words can be found in Roach (2009), for example).

Nouns	Verbs	Adjectives
1 <i>time</i>	1 be	1 good
2 <i>person</i>	2 have	2 new
3 year	3 do	3 <i>first</i>
4 way	4 say	4 last
5 day	5 <i>get</i>	5 <i>long</i>
6 <i>thing</i>	6 <i>make</i>	6 great
7 <i>man</i>	7 go	7 <i>little</i>
8 world	8 know	8 own
9 <i>life</i>	9 <i>take</i>	9 other
10 <i>hand</i>	10 see	10 old
11 <i>part</i>	11 come	11 right
12 child	12 <i>think</i>	12 <i>big</i>
13 eye	13 look	13 high
14 woman	14 want	14 <i>different</i>
15 <i>place</i>	15 give	15 small
16 work	16 <i>use</i>	16 <i>large</i>
17 week	17 find	17 <i>next</i>
18 <i>case</i>	18 <i>tell</i>	18 early
19 point	19 ask	19 young
20 government	20 work	20 <i>important</i>
21 company	21 seem	21 few
22 <i>number</i>	22 feel	22 <i>public</i>
23 group	23 try	23 <i>bad</i>
24 <i>problem</i>	24 leave	24 <i>same</i>
25 <i>fact</i>	25 call	25 able

Table 3. The commonest content words in the *Oxford English Corpus*

A quick look at the most frequent content words from the *Oxford English Corpus*⁹ further confirms that the default values predicted by the four basic rules (*man/mane/car/care*) apply with an overall regularity (59%) but the amount of exceptions in such very frequent words corroborates the belief that guidance should be given to learners from a very early level in the learning process (see Table 3. above; italics show regular occurrences, exceptions are in bold type). Note that vowel letters at the end of the word, such as *be*, *do*, *go* are not accounted for

⁸ Function words or grammatical words, such as articles, auxiliaries, prepositions, pronouns, etc.

⁹ The original frequency list from the *Oxford English Corpus*, counting over 2 billion words, is given in the Appendix for a comparison with Fry's list.

by the basic rules we use here. The word-final open syllable where the vowel sound is not followed by anything is a quintessential free position, hence the only possible exception here can be non-matching free vowels as in *who* and *do*. The other set of examples that are not governed by the basic rules in this test is composed of instances where the vowel letter is followed by one consonant and a vowel other than mute <e>, e.g. *woman*, *government*. Free by its position, the actual pronunciation of the letters depends on a series of further rules.

Overall, the basic rules are useful and can be recommended for the classroom provided the teacher is aware of some very frequent words that will not obey the rules. The following two sections will look at the pronunciation of such words (3.2: *ask, after, answer, last*, 3.3: *word, work, world*, and *was, what, want*). The pattern in *all, call, small* and *right, high, find, kind* can be explained briefly: <a> followed by <ll> in words of one syllable (*call, fall*) and in longer words stressed on the final syllable (*be^{fall}, re^{call}, in^{stall}*) is pronounced /ɔ:/ in SBE, /ɔ:/ or /ɑ:/ in GA, while <i> keeps its free value when followed by <gh> (*high, sigh*), <ght> (*might, delight*) and <nd> (*kind, remind, behind*). One would be tempted to add <ld> to this last series as in *child*, but whereas all words with <igh(t)> are pronounced /aɪ/, *bewilder, wilderness* and *children* occur with /ɪ/.¹⁰ The best way to handle all these examples is highlighting their pronunciation and treating them as exceptions so as to favour the generalisation of the more useful and prevalent patterns found in the basic rules. The same applies to further common words found in the test – *are, have, also, able, change, where, there, were, live, give, one, some, come, other, another, mother, company, only, most, move* – whose exceptional pronunciation should be emphasized.

3.2 ASK words

Owing to practical constraints, a very short note is of order here concerning a set of words that are most often referred to as ASK words (sometimes BATH words). By virtue of the frequency of some of its members, the pronunciation of *bath, pass, class, glass, fast, contrast, chance, dance, can't, France*, etc. catches the attention of many learners of English. This group of words has the sound of *cat* in almost all accents, which is consistent with the basic rule predicting /æ/, but SBE defies this logic and uses the vowel in *father*.

What is interesting about this particularity of SBE, is that although the phonological context calling for /ɑ:/ is quite complex (given below) students often master the words and overgeneralise the rule.

- /ɑ:/ with a following word-final /f/ (*giraffe*), /θ/ (*bath*), /s/ (*class*)
- /ɑ:/ before /f/, /s/, /n/ followed by a plosive (*clasp, basket, draft, after, plant*)
- /ɑ:/ before /ns/, /nʃ/ (*answer, branch*)

It is reasonable to expect to hear the same /ɑ:/ sound in *ample* (as in *sample*), *finance* (as in *advance*), *bland* (as in *demand*), *mass* (as in *grass*), *plastic* (as in *plaster*), *maths* (as in *path*), and such logical mistakes are often heard in learners' speech. In addition, quite a few words are variable in SBE: *drastic* (an overwhelming majority of those polled in 1988 in LPD prefer /æ/, in the same manner as for *plastic*), *translate* (the prefix *trans-* in general), *ranch* (/æ/ considered non-standard in 1988 but part of SBE today (Jones 2011)), *bastard, Basque, Glasgow, photograph*, etc.

¹⁰ Note also that *gild* and *sild* oppose to *wild, child* and *mild*.

A slow but consistent change in the lexical distribution of the short /æ/ seems to be taking place in SBE. As new generations grow up, the sound change may accelerate and involve further words, thus eventually leading to the levelling of this feature with other accents in the UK and around the world.

3.3 The phonology of neighbouring sounds

The next rule of the selection in this paper is a phonological rule that predicts pronunciation from neighbouring sounds. The rule, let us call it *war worms rule* for classroom use, accounts for the pronunciation of the letters <a> and <o> when preceded by /w/ and followed by <r>. Comparing *lard*, *star*, *far*, *starter* with *ward*, *swarm*, *war*, *quarter* we have (the regular r-influenced value) /ɑ:/ in the former set, but /ɔ:/ in the latter.¹¹ Similarly, while *lord*, *storm*, *horse* are pronounced with (the regular r-influenced) /ɔ:/, *word*, *worm*, *worse* have /ɜ:/. The words themselves are very similar in their structure, which suggests that it is /w/ spelt either <w> or <(q)u> that causes the difference in the vowel sound. To illustrate the effect of /w/ to the learners, we can pick words that are written in the same way except for the initial letter (Table 4. below).

/ɜ:/	/ɔ:/	/ɔ:/	/ɑ:/	/ɒ/ (GA /ɑ:/)	/æ/
word	lord	warm	harm	wash	cash
work	pork	war	far	watch	match
worse	horse	ward	lard	want	ant
worm	form	swart	smart	was	has
worth	forth			wander	sander

Table 4. The influence of /w/ in words with <a> and <o>.

A second set of regularities can also be taught in words with <a> not followed by <r> (Table 4. above), and the mnemonic name of the rule could change to *war worms wander*. *Wash*, *watch*, *want*, *was* and *wander* are pronounced with /ɒ/, whereas the regular value appears when we take away the initial /w/: *cash*, *match*, *ant*, *has* and *sander*.

Sensitivity to initial /w/ does not concern as many words as the wide application of the basic rules, but frequently occurring words like *was*, *what*, *want*, *word*, *work*, *world* require clarification, and the restricted number of exceptions¹² makes the patterns very reliable. On the other hand, to complete the rules, two regular cases that do not fit in have to be explained: 1) when <a> is followed by velar consonants /k g ŋ/ the pronunciation is not influenced by /w/: *quack*, *wag*, *twang* /æ/, and 2) when <a> is followed by <lk> *walk* or <ll> *wall* the pronunciation with /ɔ:/ follows the group of words discussed in 3.1: *talk*, *chalk* and *call*, *fall*.

4) TRISYLLABIC LAXING RULE - NATIVE AND LEARNER INTUITIONS

Let us then continue to look for an ideal compromise between utility and simplicity: a useful rule that applies to a lot of words and a simple one that remains easy enough to understand for someone with no training in phonology. The trisyllabic laxing rule, a long-standing rule in

¹¹ GA is different: *ward*, *swarm*, *war*, *quarter* can also be pronounced with /ɑ:/.

¹² Exceptions: *worn*, *swam*.

phonology states that when primary stress falls on the antepenultimate syllable (or before) then the stressed vowel will be lax:¹³

- /æ/ as in *cat* for <a> e.g. **gr**atify
- /e/ as in *bed* for <e> e.g. **en**ergy
- /ɪ/ as in *kit* for <i> e.g. **sin**ister
- /ɒ/ as in *dog* for <o> e.g. **or**igin
- /ʌ/ as in *cut* for <u> e.g. **cu**rrency

These are the same basic checked values we have seen in the previous section but this time appearing in longer words. Regular alternations such as *sane-sanity*, *serene-serenity*, *crime-criminal*, *compare-comparison*, *occur-occurrence* make this rule especially useful for learners who will quickly pick it up and generalize it to other word pairs.

In actual fact, the trisyllabic laxing rule refers to different processes in the history of English applying in different phonological environments (in conjunction with a different rule called closed-syllable shortening). The results of changes that took place in Old English can be heard in the corresponding words today: *south-southern*, *holy-holiday*, for example.¹⁴ For space considerations, we use the simplest contemporary version here, as stated at the beginning of the section.

4.1 Morphologically complex vs. simple words

The rule applies best in certain derivational environments. A learner acquiring words such as *impede*, *profane*, *derive*, *pronounce*, *grateful* might logically pronounce the derivatives or related forms *impediment*, *profanity*, *derivative*, *pronunciation*, *gratitude* with the same vowel. It is therefore useful to point out that in a longer word, stress falling on the third syllable from the end (or earlier), vowels tend to be lax. We can then encourage students to actively use this rule to predict the pronunciation of derived words (such as *vane-vanity*, *opaque-opacity*, *sincere-sincerity*, *concede-concession*, *crime-criminal*, *line-linear*, *provoke-provocative*, *omen-ominous*, *tyrant-tyranny*, *Cyprus-Cypriot*, etc.).

On the other hand, it can be slightly confusing, that trisyllabic laxing will not apply in some cases and derivatives keep the vowel sound of the deriving form: *psyche-psychical*, *gnome-gnomically*, *motive-motivate*, *note-notify*, *glory-glorify*, *proceed-procedural*, *parent-parentage*, *prime-primary*, *vocal-vocalize*, *decent-decency*, *pure-purity*, *obese-obesity*, etc. Furthermore, some words appear to be variable: *ovum-ovular* (SBE /'ɒvjələ/, /'əʊvjələ/ and GA /'ɑ:vju:lər/, /'əʊvjələ/), *code-codify* (SBE /'kəʊdɪfaɪ/, GA /'kɑ:dɪfaɪ/, /'kəʊdɪfaɪ/), *private-privacy* (SBE /'prɪvəsi/, /'praɪvəsi/, but GA /'praɪvəsi/).

Variation in the choice of the vowel phoneme, as we have already seen it in ASK words, lies at the heart of both synchronic phonology and diachronic approaches. Increasing variation very often signals language change in progress, stable or decreasing variation, on the other

¹³ Lax vowels are also called short vowels: /ɪ e æ ʌ ʊ ɒ/ in SBE. In GA the rule applies with /ɪ e æ ʌ/ and /ɑ: ɔ:/. In actual fact, neither 'short' nor 'lax' are truly satisfactory for this phonological division in the system; see Durand (2005) for a discussion of terminology and phonetic reality.

¹⁴ Since the trisyllabic laxing rule itself has a long history in English and its precise formulation is slightly more complex than the one used in this paper, the reader can appreciate the full history of the rule in Lahiri & Fikert (1999), and find out about Luick's rule in Deschamps et al (2004: 203-205).

hand suggests an old change no longer operating. In a more detailed phonological analysis, the type of the suffix is crucial in the application of the trisyllabic laxing rule.

Let us then turn from word pairs and morphological structure to simple words (monomorphemic words or words where the derivation is opaque). Here the rule equally applies: *character*, *Africa*, *animal*, *crocodile*, *elephant*, *enemy*, *envelope*, *history*, *cinema*, *melody*, *positive*, *syllable*, *mystery*, etc. There are also exceptions: e.g. *omega*, *ocelot* (also lax), *apricot* (GA also lax), *stevedore*, *capable*, *ivory*, etc., and some words, again, are variable: *amenity* /ə'mi:nəti/, /ə'menəti/ (GA /ə'menəti/), *nonary*¹⁵ /'nəʊnəri/, /'nɒnəri/ (GA /'nəʊnəri/, /'nɑ:nəri/), *plenary* /'pli:nəri/ (GA /'pli:nəri/, /'plenəri/), etc. In some phonological accounts of trisyllabic laxing, in fact, the rule is not held to operate in a monomorphemic or derivationally opaque environments.

4.2 Does usefulness outweigh exceptions?

Given variation in morphologically simple words, and considering the exceptions in derived words, the utility of the rule for the classroom should be verified. A random list of trisyllabic words with initial stress was compiled (see Appendix) to test the rule: out of the 225 items only 30 words do not have the predicted lax pronunciation: one belongs to the ASK words (*chancellor*), others are modified by a preceding /w/ (*qualify*, *quality*, *quantity*), some of them have a different checked value than the one that should correspond to the letter (*company*, *constable* (variable), *government*), and finally, a few words occur with a free vowel (*agency*, *radio*, *frequency*, *medium*, *isolate*, *library*, *motivate*, *photograph*, *curious*, *funeral*, etc.). The other 195 words are regular. Hence, we can say that although the rule is not entirely reliable it can be recommended for learners; its efficiency lies in the simple formulation coupled with the practicality of word pairs having alternating vowels. Stress-imposing endings like -ity, -ety, -ify, -efy, -ible, -ate, -ical, -itude, -icide provide hundreds of fairly common words with a regular lax value.

As a final remark, the trisyllabic laxing rule is a rule only in its name. Evidence suggests that in the history of English words like *sane* and *sanity* were borrowed at different times and with different vowels. Endings, such as -ity, became productive suffixes later on (towards the seventeenth century), and started to be used in derivation. The pronunciation rule thus historically began operating on existing tense-lax pairs, and many irregularities can be explained by historical processes.

5) CONCLUSIONS

No matter how much a teacher strives to focus on spoken English, nor how much priority s/he intends to give to speaking skills in class, a majority of learners pass through the written word to learn. Thus, instead of having to deal with the obvious disadvantages of relying excessively on written English, it is a welcome turn to discover how we can actually benefit from it. The written word is stable, easy to rely on, stays (more or less) the same across accents contrary to the often destabilizing effects of hearing so many and so different English accents around the globe. Also, a lot of learning is based on the written form: reading and writing in and outside the classroom, precious learning stemming from pure personal motivation done at home at the expense of personal time, many forms of autonomous learning in untutored contexts (browsing the web, reading articles, magazines, books, etc). While it is obvious why this can

¹⁵ Relating to or based on the number nine.

easily cause problems in pronunciation, teachers can actually try to use spelling to their advantage.

To conclude the paper, here are some final remarks that are no more than common sense:

- it is useless to insist on the learners using the rules, they should grasp their utility and draw on them as far as they actually serve a good purpose
- given sufficient exposure to oral English, a lot of students might get many of the rules anyway, it is the exceptions that are more difficult for them to handle
- graphophonemic rules never suffice in themselves, they have to be connected to actual pronunciation teaching
- word (and sentence) stress cannot be predicted from spelling, and is crucial for the intelligible pronunciation of English words.

We have seen that English spelling is very far from being phonemic, but despite the seeming unpredictability of pronunciation, it is worth devoting some time to the discussion of the relationship between spoken English and the written word. As our mind looks for order and regularity, the teacher has to choose between helping the learner to cope with the chaos or ignoring the issue and correcting pronunciations on the spot. The most important pedagogical points raised in the paper include the disadvantages and benefits of relatively simple pronunciation rules with regard to gains in learner autonomy. From the first steps of raising awareness concerning sounds vs. letters, word and sentence stress, through some rules-of-thumb that can be used to predict default values, to the undermining effects of high frequency words that do not obey basic rules, there is a conclusion to draw for every teacher. The purpose of this paper was to set in motion very basic considerations about graphophonemic rules without getting entangled in the details and precisions of a comprehensive account. Nevertheless, teachers should not be reluctant to browse through one of the introductory books on English phonology such as Carr (2013), Cruttenden (2008) or Ginésy (2004) in order to appreciate the complexity of different aspects of spoken English.

The selection of graphophonemic rules discussed in this paper involved single vowel letters in a stressed position. Having considered the disadvantages and the benefits of the rules in relation to word frequency and learner competence, three rules types were examined in detail: the default values attributed by a set of four basic rules (*fin-fine-fir-fire*) accompanied by a careful guidance regarding exceptional words (*ask, after, answer, all, call, small* and *right, find, kind*), the pronunciation of <a> and <o> following /w/ (*word, work, world, was, what, want*), and the series of lax (checked, short) vowels in longer words governed by the trisyllabic laxing rule (*fable-fabulous, mine-mineral, sole-solitude*) especially useful in the context of some endings.

Although there are many ways to teach pronunciation, and every teacher will have their priorities and favourite methods, rules that rely on connecting the written word to its spoken form are very complicated, and therefore, rarely used in the classroom. Making sense of graphophonemic rules and keeping a selection at the forefront (at the expense of other rules) can help students make useful generalisations and avoid mispronunciations guided by logical but mistaken overgeneralisations. The aim is to use the written form actively in remedying problems in speaking skills and to circumvent the otherwise unavoidable results of relying too much on written forms.

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Appendix

1. Fry's Instant Words - The first hundred

1 the	13 for	26 or	38 your	51 will	63 would	76 number	88 oil
2 of	14 on	27 one	39 can	52 up	64 make	77 no	89 sit
3 and	15 are	28 had	40 said	53 other	65 like	78 way	90 now
4 a	16 as	29 by	41 there	54 about	66 him	79 could	91 find
5 to	17 with	30 words	42 use	55 out	67 into	80 people	92 long
6 in	18 his	31 but	43 an	56 many	68 time	81 my	93 down
7 is	19 they	32 not	44 each	57 then	69 has	82 than	94 day
8 you	20 I	33 what	45 which	58 them	70 look	83 first	95 did
9 that	21 at	34 all	46 she	59 these	71 two	84 water	96 get
10 it	22 be	35 were	47 do	60 so	72 more	85 been	97 come
11 he	23 this	36 we	48 how	61 some	73 write	86 called	98 made
12 was	24 have	37 when	49 their	62 her	74 go	87 who	99 may
	25 from		50 if		75 see		100 part

2. Fry's Instant Words - The second hundred

101 over	126 say	151 set	176 try
102 new	127 great	152 put	177 kind
103 sound	128 where	153 end	178 hand
104 take	129 help	154 does	179 picture
105 only	130 through	155 another	180 again
106 little	131 much	156 well	181 change
107 work	132 before	157 large	182 off
108 know	133 line	158 must	183 play
109 place	134 right	159 big	184 spell
110 years	135 too	160 even	185 air
111 live	136 means	161 such	186 away
112 me	137 old	162 because	187 animal
113 back	138 any	163 turn	188 house
114 give	139 same	164 here	189 point
115 most	140 tell	165 why	190 page
116 very	141 boy	166 ask	191 letter
117 after	142 follow	167 went	192 mother
118 things	143 came	168 men	193 answer
119 our	144 want	169 read	194 found
120 just	145 show	170 need	195 study
121 name	146 also	171 land	196 still
122 good	147 around	172 different	197 learn
123 sentence	148 form	173 home	198 should
124 man	149 three	174 us	199 America
125 think	150 small	175 move	200 world

3. Basic rules: occurrences of single-letter vowels in a stressed position in the first two hundred Fry's Instant Words

	a	e	i	o	u	y
total list 1	22	16	19	20	4	3
not fit	4	8	1	7	0	3
obey	12	6	17	8	4	0
not obey	6	2	1	5	0	0
irregular in %	33	25	06	38	0	n/a
total list 2	25	26	14	13	8	4
not fit	7	14	2	1	1	4
obey	11	11	8	4	7	0
not obey	7	1	4	8	0	0
irregular in %	39	8	33	67	0	n/a
total lists 1 and 2	47	42	33	33	12	7
total fit	36	20	30	25	11	0
total irregular in %	36	15	17	52	0	n/a

Typically because in an unstressed position, or at the end of the word, or followed by one consonant and a vowel.

This shows how frequent the letter is in the 200 words.

This shows the number of occurrences of the letter in a position where one of the 4 rules apply.

This shows the overall percentage of irregular words.

4. The commonest words in the *Oxford English Corpus*

1 the	13 not	26 they	38 there	51 when	63 year	76 come	88 first
2 be	14 on	27 we	39 their	52 make	64 your	77 its	89 well
3 to	15 with	28 say	40 what	53 can	65 good	78 over	90 way
4 of	16 he	29 her	41 so	54 like	66 some	79 think	91 even
5 and	17 as	30 she	42 up	55 time	67 could	80 also	92 new
6 a	18 you	31 or	43 out	56 no	68 them	81 back	93 want
7 in	19 do	32 an	44 if	57 just	69 see	82 after	94 because
8 that	20 at	33 will	45 about	58 him	70 other	83 use	95 any
9 have	21 this	34 my	46 who	59 know	71 than	84 two	96 these
10 I	22 but	35 one	47 get	60 take	72 then	85 how	97 give
11 it	23 his	36 all	48 which	61 people	73 now	86 our	98 day
12 for	24 by	37 would	49 go	62 into	74 look	87 work	99 most
	25 from		50 me		75 only		100 us

5. A collection of three-syllable words stressed on the first syllable

absolute	accident	activate	advertise	advocate	agency
alcohol	allocate	ambulance	analyse	analyst	animal
applicant	architect	area	argument	article	attitude
avenue	barrier	battery	benefit	businessman	cabinet
calculate	camera	candidate	capital	carrier	casual
catalogue	celebrate	century	chancellor	character	charity
chemical	chocolate	cinema	circulate	circumstance	citizen
clarify	classify	colony	company	compensate	compromise
concentrate	conference	confidence	consciousness	consequence	constable
contemplate	continent	corridor	creditor	criticise	criticism
criticize	curious	currency	customer	decorate	dedicate
deficit	delegate	democrat	demonstrate	density	deputy
difference	discipline	dividend	document	dominate	editor
educate	element	emperor	emphasise	enemy	
energy	enterprise	entity	envelope	episode	equity
estimate	evidence	execute	exercise	factory	fantasy
festival	formula	formulate	frequency	funeral	furniture
gallery	general	generate	gentleman	government	governor
graduate	guardian	heritage	hesitate	history	holiday
hospital	illustrate	implement	incidence	incident	indicate
industry	influence	injury	institute	instrument	integrate
interest	interface	interval	interview	isolate	justify
liberty	library	magistrate	management	manager	mechanism
medium	membership	mineral	minimum	minister	ministry
modify	molecule	monitor	motivate	multiply	mystery
negligent	nursery	occupy	officer	opening	operate
organise	origin	oxygen	parliament	particle	
passenger	penalty	penetrate	pensioner	period	photograph
poetry	policy	preference	pregnancy	premium	president
principle	prisoner	privilege	property	publisher	punishment
purchaser	qualify	quality	quantity	radio	ratio
recipe	recognise	reference	register	regulate	
relative	remedy	residence	resident	restaurant	revenue
salary	satellite	satisfy	scientist	seminar	separate
settlement	situate	specialist	specify	specimen	stimulate
stimulus	strategy	studio	subsidy	substitute	summary
supplement	surgery	sympathy	telephone	tendency	therapy
tragedy	traveller	uniform	unity	universe	vehicle
victory	video	violence	visitor		

Words with initial stress were retained from the list of trisyllabic words taken from http://www.syllablecount.com/syllables/words/3_syllable_words.