PREDICTING ENGLISH WORD ACCENT ON MORPHOLOGICAL GROUNDS

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ABSTRACT

Learners of English as a foreign/Second Language (EFL/ESL) can easily learn the correct pronunciation of English words. Linguists have tried to simplify English phonology in general, and English accent in particular, over the past 50 years or so; some scholars have talked about four degrees of primary, secondary, tertiary and weak stress (e.g., Bowen, 1975); some have considered only three degrees of stress: primary, secondary and weak (e.g., Stageberg, 1964) and some have concentrated on two levels of stress: accented vs. unaccented, or stressed vs. unstressed (e.g., Chomsky and Halle, 1968). No one of these scholars, however, has adopted an orthography-based approach to their discussion of English accent. Since orthography or spelling is the most fixed and static way of representing words in English, like in almost any other language, spelling- or orthography-based rules of accent/stress placement can relieve almost any ESL/EFL learner. In this paper, four easy-to-understand spelling-based rules for stress placement are presented which can help EFL/ESL learners to master correct pronunciation of English words.

Keywords: Orthography; Accent; Stress; Stress rules; Accent rules; Phonology; Phonetics

INTRODUCTION

Many EFL/ESL teachers and scholars believe that the degree of predictability of word stress is very low in English. O'Connor (1967, p. 115), for instance, says "There is no simple way of knowing which syllable or syllables in an English word must be stressed, but every time you learn another word you must be sure to learn how it is stressed." Gordon (1974), as yet another example, recommends that if you are in doubt about the stress pattern of a given word in English, the simplest way to make sure is to look it up in a good dictionary. Thus, many linguists and foreign language teachers are reluctant or even unable to give effective accent pattern rules that can be of significant to EFL/ESL learners.

More recently, authors and teaching texts have tried in various ways to acknowledge the basic importance of word accent. They are, however, unable to help EFL/ESL learners to predict word accent and vowel quality because they believe that accent like vowel quality is not that predictable. In the generative analysis of English phonology, there are insights which are relevant to the learner's task of predicting accent and vowel quality of words on the basis of spelling. This means that we can

determine the place of the strong accent and the quality of vowels to a great extent through the ways words are spelled. Dickerson (1978, 1981, 1982, 1985, 1986, 1989), and Dickerson and Finney (1978) have tried to provide a number of pedagogical rules for EFL/ESL learners to utilize spelling as a guide to detect both word accent and the pronunciation of words in harmony with the generative phonological approach advanced by Chomsky and Halle (1968).

The present paper has tried to consolidate, simplify, and put together the information provided by Dickerson concerning only the accent placement on English words. The reader will see, how spelling and the morphological make-up of English words i.e., the written forms of words contribute to the placement of primary accent on a given syllable in a word.

1. Key Syllable (KS) and Left Syllable (LS)

Before any discussion of the four accent rules, it is necessary to supply from spelling the information these rules need. The location of the Key Syllable (KS) within a given word is the most basic piece of information required by the four accent rules. In any given word, there is a particular syllable that stands as reference point within

that word; this syllable is called the Key Syllable (KS). Defined in terms of spelling, a KS is "*the last vowel spelling pattern and all extra letters at the end of a word or before an ending.*" (Yarmohammadi, 1995, p. 88). As Yarmohammadi (1995) argues, all spelling-based accent rules assign primary word stress in relation to KS, and the choices are limited: the rules can place the accent either on the Key or on the syllable immediately to the left of the Key- syllable called the Left Syllable (LS).

A very important, and apparently paradoxical, point in connection to KS is that KSs do not necessarily correspond to morphological and/or syllabification units. Rather, they all begin with a vowel (shown as V) which may be followed by some other vowel, one or more consonant(s) (shown as C), and maybe the letter 'e' (shown as e). Take the following examples:

KS shape:	VCe	VV	VCC	V	VC
Example:	dec<u>line</u>	deg<u>ree</u>	en<u>act</u>	forg<u>o</u>	reg<u>ret</u>

As Yarmohammadi (1995) noted, The two patterns, VV and VCC, may have extra following letters, none of which affects the basic pattern. Take these examples:

KS shape:	VV	VV	VV
Example:	<u>feed</u>	<u>geese</u>	b<u>ounce</u>

In English morphology, there are two types of endings: (a) neutral, and (b) accent-governing. The criterion to distinguish between the two types of endings is a very simple one: endings that begin with a consonant are neutral (e.g., s, 's, ly, ful, ness, kin, less, let, like, man, ment, ship, some, word, and wise) whereas those that begin with a vowel are accent-governing (e.g., es, al, ion). It is noteworthy that the neutral ending 's' is never preceded by an -e. In cases where an 'e' precedes a word-final 's', the 'e' must always be included with the 's' which, in that case, is accent-governing. Accent-governing endings have profound effects on both accent and vowel quality. By way of contrast, neutral endings have no effect on the placement of word accent. As such, neutral endings are treated as invisible with regard to accent assignment. On the other hand, accent-governing endings leave such a significant influence on accent assignment that they are often categorized according to their effects on accent. Accent-governing endings fall into different categories

each of which will be discussed in due course when the related accent rules are explained.

Once the Key Syllable is identified, it will be very easy to identify the Left Syllable (LS). According to Yarmohammadi (1995, p. 89), "*The Left Syllable is the vowel spelling pattern and all extra letters immediately to the left of the Key.* As such, the Left Syllable (LS), too, begins with a vowel letter in much the same way as did KS. LS includes all consonant letters up to the first vowel letter of KS. For example since the presence of a prefix may determine the placement of primary word accent, EFL/ESL learners need to be able to recognize major Anglo-Saxon (AS) and Latinate (L) prefixes before they can apply accent placement rules correctly. They should also know that, depending on the types of the following stems, some L prefixes undergo assimilation and, therefore, take different alternate forms. Appendices A through C provide a summary of major AS and L prefixes as well as alternate forms of L prefixes.

f/<u>org</u>/o	d/<u>egr</u>/ee	r/<u>egr</u>/et	c/<u>ouns</u>/el/ing	ref/<u>in</u>/ish/es
LS	LS	LS	LS	LS

2. Types of Accent Rules

As stated above, this paper is an attempt to provide ESL/EFL learners with stress-assignment rules which are based on the morphological make-up of English words. To this end, four accent rules are presented and explained; they are: (1) Prefix Weak Accent Rule (PWAR), (2) V / VC Weak Accent Rule (V / VCWAR), (3) Key Strong Accent Rule (KSAR), and (4) Left Strong Accent Rule (LSAR). Each rule will be discussed and appropriate examples will be provided.

2.1. Prefix Weak Accent Rule (PWAR)

The Prefix Weak Accent Rule (PWAR) says: From the Key, accent Left, but not a Prefix; if you cannot accent Left, then accent Key.

In order to be able to assign word accent using this rule, EFL/ESL learners need to answer two questions:

(1) Does the word to be accented belong to the domain of PWAR?

(2) Does the Left Syllable contain any part of a prefix?

The term 'domain' as used in the first question is synonymous with the more familiar term 'part of speech'. It

is a cover term that includes verbs, adverbs, adjectives and nouns. To answer the first question, EFL/ESL learners can refer to table 1, which contains a sample of the word domains with appropriate weak endings and relevant examples in which PWAR assigns the major accent. In 'consider' and 'defines', for example, the accent is on the Key as the Left Syllables are prefixes, but in 'yellowing' the accent is on the Left. In 'objectively', the ending '-ly' is a neutral one and does not count, '-ive' is a weak ending and it is within the domain of the application of PWAR. But 'ob-' is a prefix and the accent falls on the Key. Note that, in the examples of each domain, the accented vowel is underlined and the Key Syllable is italicized. The letter N which follows some of the examples stands for "noun head" and indicates that examples are adjectives; likewise, verbs are indicated by 'to' or '-ing' and nouns by 'a', 'an', or 'the'. Unfortunately, they have to memorize the endings as well as the word domains.

EFL/ESL learners should also be aware that there are three

possible answers to the second question: (a) the word contains no prefix; (b) the word contains a prefix; or (3) there is no Left Syllable (LS). Each of these three possibilities entails a specific type of accent placement. In cases where there is no prefix in the left syllable, the accent will pass to the left syllable. If there is a prefix, or if there is no Left Syllable (LS), the accent will stay on the Key Syllable (KS).

It is, therefore, important to know that to use the PWAR, the EFL/ESL learner does not have to know the meaning of the word he is accenting. He only needs to be able to supply some crucial pieces of information about the word. The part of speech and the kind of suffix, if any, are necessary clues for determining which rule applies to the word. If the PWAR applies, the location of the Key Syllable and the presence or absence of a prefix are important in order to apply the rule.

As shown in Table 1, categories 1 and 19 have been marked with an asterisk (*). The reason for this is that, except for these two categories, all other domains are identified by a weak ending an ending that begins with a consonant as it appears on words belonging to given parts of speech within the domains. Words that fall within domain 1 (i.e., verbs) may have no endings or may include any one of the endings -es, -ed, or -ing. EFL/ESL learners should, however, notice that a very important restriction applies to this category. Verbs of three or more syllables ending in -ate, -fy, -ize, -ment, and -ute are excluded from this category; they are governed by other rules of accent placement. Domain 19 includes all -ible words. The -ible is the Key and may stand uninflected or be pluralized. In the latter case (i.e., in plural nouns with -ible Keys) the -ibl is the Key, and -es is considered to be a weak ending.

2.2. V/VC Weak Accent Rule (V/VCWAR)

This rule says: From a V or VC Key, accent Left; if you cannot accent Left, then accent Key. In other words, if the KS contains a V or VC, the accent must fall on the Left Syllable (LS). However, where there is no Left Syllable or when KS is not a V or a VC, accent must obligatorily remain on the Key Syllable. Table 2 illustrates the word domains

	Category	Part of Speech	Examples
1*	verbs	V	to cons*i*der, to def*i*ne, y*e*llowing
2	-atize	V	to *a*nthem*a*tize, to dem*o*cratize
3	-atist	N	a syst*e*m*a*tist, a d*o*gm*a*tist
4	-al	N	a c*a*nni*bal*, the surv*i*val
5	-ure	N	the dep*a*r*ture*, the f*u*rn*i*ture
6	-ature	N	the l*i*ter*ature*, a s*i*gn*ature*
7	-atism	N	the separ*a*tism, the pragm*a*tism
8	-est	Adj	fl*att*est N
9	-age	N, Adj	the d*o*s*age*, *a*ver*age* N
10	-ery	N, Adj	the sl*a*very, sl*i*pp*ery* N
11	-or	N, Adj	a b*a*che*lor*, m*i*n*or* N
12	-ed	Adj, Adv	Unf*i*n*i*shed N, rep*ea*tedly
13	-y	Adj, Adv	t*u*ssocky N, h*au*ghtily
14	-er	N, Adj, Adv	the J*u*p*i*ter, sh*a*llow*er* N, dis*o*rderly
15	-ative	N, Adj, Adv	a pres*e*rv*ative*, g*e*ner*ative* N, sp*e*cul*ative*ly
16	-able	N, Adj, Adv	A s*yll*able, unim*a*gin*able* N, rem*a*rkably
17	-ary	N, Adj, Adv	a l*a*pid*ary*, s*o*lit*ary* N, n*e*cessarily
18	-ar	N, Adj, Adv	a c*a*len*dar*, p*o*l*ar* N, c*i*rcularly
19*	-ible (Keys)	N, Adj, Adv	a conv*e*rt*ible*, inv*i*s*ible* N, *au*d*ibly*
20	-ory	N, Adj, Adv	a dir*e*ct*ory*, s*e*nsory N, comp*u*lsorily
21	-ive	N, Adj, Adv	a f*u*git*ive*, perv*a*sive N, obj*e*ctively
22	-ing	N, Adj, Adv	a c*a*vil*ing*, surpr*i*sing N, f*i*ttingly
23	-atory	N, Adj, Adv	a ref*o*rm*atory*, c*i*rculatory N, obl*i*g*atory*ly
24	-ish	2-syllable Adj	L*a*fish N, sl*u*ggish N
25	-ize	2-syllable V	b*a*ptize, c*o*gnize
26	-ist	2-syllable N	a l*e*ftist, a fl*u*tist
27	-ism	2-Syllable N	the r*a*cism, the b*a*ptism
28	-en	all words	the p*o*llen, un*e*ven N, to m*oi*sten, *o*penly

* indicates categories that include exceptions
Adopted from Yarmohammadi (1995) with permission and modifications.
Table 1. Word Domains of the Prefix Weak Accent Rule

	Category	Part of Speech	Examples
1*	-ic Keys	All words	a mech*a*nic, class*i*c N, to p*i*cnic
2	-ance	N	the t*o*lerance, an all*o*wance
3	-ancy	N	the irr*e*levancy, the flamb*o*yancy
4	-ence	N	a r*e*sidence, the conv*e*rgence
5	-ency	N	his const*i*tuency, an em*e*rgency
6	-is	N	the g*e*nesis, a syn*o*psis
7	-oid	N	a tr*a*pezoid, an ell*i*psoid
8	-um	N	a cont*i*nuum, the refer*e*ndum
9	-us	N	an *e*xodus, the thes*au*rus
10	-ous	Adj, Adv	g*e*nerous N, trem*e*ndously
11	-al	V, Adj, Adv	to t*o*tal, monum*e*ntal N, al*a*lytically
12	-an	N, Adj, Adv	a tob*o*ggan, Amer*i*can N, h*u*manly
13	-ant	N, Adj, Adv	an acc*ou*ntant, ab*u*ndant N, mil*i*tantly
14	-ent	N, Adj, Adv	the pr*e*sident, diff*e*rent N, cons*i*stently
15	-On	N, Adj, Adv	the phlog*i*ston, cr*i*mson N, c*o*mmonly

* indicates categories that include exceptions
Adopted from Yarmohammadi (1995) with
permission and modifications

Table 2. Word Domains of the V/ VC Weak Accent Rule (V/ VCWAR)

with which V/VCWAR is operative:

A close look at the table reveals that the V/ VCWAR applies principally to words with weak endings. However, in the case of category 1 there is no ending. This category encompasses all words that have a word-final '-ic'. In words that fall within this category, '-ic' is the Key Syllable.

The first step in the application of the V/ VCWAR is to recognize which word domains fall within the realm of this rule. To this end, ESL/EFL learners must be able to do two things: (a) identify the part of speech of a given word, and (2) recognize word endings. As the list shows, the combination of these two pieces of information determines if the V/ VCWAR operates. A second important step is to decide where in the word to place the accent according to V/VCWAR. EFL/ESL learners can take this step only if they are able to (1) identify the Key Syllable (KS) and (2) determine the spelling pattern of the Key. For example,

Strong Sequences	Examples
eVSS	*a*rea, c*o*rneal, *o*cean, l*i*nerar, cl*y*peate, r*o*deo, p*i*geon, petr*o*leum, cad*u*ceus h*i*deous
iVSS	virg*i*nia, I *a*riat *a*lien, obe*d*ience, grad*i*ent, I *e*niency, id*i*om, ch*a*riot, aud*i*tion, s*e*nior, stu*d*io, grac*i*ous, p*o*dium, jul*i*us fam*i*liar Ar*a*bian, dem*o*niac, r*a*diate, me*d*ia, tr*i*vial, f*o*liage, W*i*lliam, *a*viary, br*i*lliant, dev*i*ance, *a*miable, m*y*riad,
Exceptions	words containing 'es', 'ied', 'ier', and 'iest' strings and ie# words with VV Keys except for 'au', 'eu' and 'ou'

\# shows boundary; w# means word-final and
#w means word initial (#ie means word-final ie).
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Table 3. Word Domains of the Key Strong Accent Rule (KSAR)

as table 2 indicates, in 'monumental' the Keys is VCC, in 'thesaurus' the Keys is VVC, and in 'flamboyancy' VV (as indicated by bold type face). The accent will, therefore, remain on KS in these words. In 'analytically', the '-ly' ending is a neutral and does not count; because here the Key is VC, the V/ VCWAR assigns accent to the Left Syllable. In 'total' there is no Left Syllable and, therefore, the accent has to fall on the Key Syllable.

2.3. Key Strong Accent Rule (KSAR)

The rule simply states that for Strong Sequences (SS), the speaker should accent the Key Syllable. In English words, there are two distinct strong sequences: (a) iV Strong Sequences (iVSS), and (b) eV Strong Sequences (eVSS). The iV Strong Sequence (iVSS) includes *iar*, *ian*, *iac*, *iate*, *ia*, *ial*, *iage*, *iam*, *iant*, *iance*, *iable*, *iad*, *iat*, *ien*, *ience*, *ient*, *iom*, *iot*, *ion*, *ior*, *io*, *ious*, *ium*; of course, the iVSS category does not include the strings '-ies', '-ied', '-ier', '-iest' or word-final '-ie'. The eV Strong Sequence (eVSS), on the other hand, includes *ea*, *eal*, *ean*, *ear*, *eate*, *eo*, *eon*, *eum*, *eus*, *eous*. As Yarmohammadi (1995) argues, in the discussion of Strong Sequences (SS), the term 'ending' should be avoided since "the patterns of accent occur not only at the end of the word but also deeply inside words" (p. 95). As such, the designation 'ending' is not appropriate for these word-medial strings (e.g., stat*ion*ary, behav*ior*ism); the term 'sequence' is neutral to position and is, therefore, preferred over the term 'ending'. The reader should also notice that eV sequences should not be preceded by any prefix. For example, 'nuclear' includes a strong eV sequence whereas 'unclear' contains no eV sequence. Nevertheless, in word-medial position, eV sequences are unrestricted. EFL/ESL learners should also notice that word domain (i.e., part of speech)

Category	Description	Example
1	heavy words* which do not end in a weak ending, a strong sequence, or any highly recurrent syllable	m*a*verick, ap*o*calypse, str*a*tagem, t*e*nebrith
2	heavy nouns that end in 'y'	ind*u*stry, c*o*mpany
3	bi-syllabic nouns which contain no special endings	c*a*mel, c*i*ty, pr*o*duct, c*o*nvoy
4	other heavy words not accented by PWAR, V/VCWAR, or KSAR	env*e*lope, c*o*mpensate, d*e*mocrat, *e*nergize

* Words with three or more syllables are often called 'heavy words'.

Table 4. Word Categories Where LSAR is Operative

is irrelevant where a word contains a strong sequence; the strong sequence alone defines the domain of the accent rule. Table 3 illustrates the sequences with which KSAR is operative.

In both eVSS and iVSS, the syllable immediately to the left of the Strong Sequence is the Key Syllable (KS). The Key Syllable may be preceded by a Left Syllable (e.g., 'etr' in petroleum) or may not (e.g., area). Fortunately, KSAR makes only minimal demands on EFL/ESL learners. They only need to be able to (a) recognize strong sequences and (b) identify the Key Syllable within words that contain eVSSs and iVSSs. By excluding 'ies', 'ied', 'ier', and 'iest' strings, and also 'ie#' (i.e., word-final 'ie'), the learner can be sure that all other iVSs are strong. Except for ie#, the other exceptions come about as a result of the operation of spelling rules. In English, in some words with a final 'y' (i.e., y#), the 'y' changes to 'i' before plural, superlative, comparative, or past morphemes can operate (e.g., happy + est = happiest). As such, these sequences cannot be treated as real iVSSs. Also notice that, as can be seen from Table 3, the KS in eVSSs and iVSSs should contain only one vowel for KSAR to operate; 'au', 'eu', and 'ou' are, of course, permitted in the Key Syllable (e.g., n*au*seous, Al*eu*tian); notice that 'ue', 'ua' and 'uo' cannot be the Key (e.g., situ*a*tion, influ*en*tial). Other exceptions include 'denial', 'appliance', 'classifiable', 'European', 'museum', and 'idea'.

2.4. Left Strong Accent Rule (LSAR)

The LSAR states: For terminals and short nouns, accent the Left Syllable (LS). But, before I embark on any discussion of the Left Strong Accent Rule (LSAR), I should draw the readers' attention to the very important point that, only after a word has failed to comply with any of the previous rules, should it be submitted to LSAR for accent assignment.

Unaccented by the first three rules discussed hitherto are lots of English words that fall into four categories. Table 4 illustrates these categories.

The last syllable in heavy words is the ultimate syllable, the last-but-one syllable is the penultimate syllable, and the last-but-two syllable is the antepenultimate syllable. In

Category		Part of Speech	Examples
1	-acy (a unit)	heavy N	the *acc*ur*acy*, the cand*idacy*
2	-ate	heavy words	to *all*ocate, some cho*co*late, int*im*ate N
3	-ish	heavy Adj	dev*il*ish N, *yell*owish N
4	-ism	heavy N	the deter*min*ism, the *op*timism
5	-ist	heavy N	a mono*pol*ist, a psy*chol*ogist
6	-ize / -ise	heavy verb	to *west*ernize, to *merch*andise
7	-ute	heavy words	to *const*itute, a *par*achute, dest*it*ute N
8	-y	heavy N	the ge*og*raphy, the univ*ers*ity
9	-y	heavy 'fy' words	to magn*i*fy, an *amp*lifier, *sat*isfying N
10	Less Frequent Terminals	heavy N	an *acr*obat, a *boo*merang, a *cent*ipede, a *phon*ograph, a *tel*egram, a *un*icorn
11	Less Frequent Terminals	heavy V	to *aut*ograph, to *flabb*ergast, to *pant*omime, to *rid*icule, to *sacr*ifice, to *viv*isect
12	Less Frequent Terminals	heavy Adj	*bar*itone N, *der*elict N, *gen*uine N, *opp*osite N, *par*allel N, *tac*iturn N
13	Light Noun	light N	a *buzz*ard, a *fau*cet, a *lant*ern, a *rec*ord, a *reb*el, a *pyg*my

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Table 5. Word Domains of the Left Strong Accent Rule (LSAR)

words that belong to category one, the penultimate syllable acts as the Key Syllable (KS), and the antepenultimate syllable is, therefore, the Left Syllable (LS). The LS in words that belong to this category is the one that received primary stress or accent. The second category consists of heavy nouns that end in 'y' (i.e., y# heavy nouns). Here again the LS is accented. In relation to the third category, the majority of bi-syllabic nouns in this category are accented on the penultimate syllable. The accented syllable in words within this category is the LS and final syllable the KS. In the case of the words that fall within category four, too, the accent falls on the antepenultimate syllable (i.e., the LS), and the penultimate syllable can be considered as the Key Syllable (KS) in these words.

The words that belong to categories 1, 2, and 4 share three important features: (a) they all receive accent on the LS; (b) they consist of three or more syllables in their uninflected form (i.e., they are heavy); and (c) the Key Syllable (KS) is not the last spelling pattern in words within these categories (i.e., the Key Syllable or KS is in the next-to-the-last spelling pattern within these words). The last spelling pattern within these words can, therefore, be used a guide to the KS. In other words, the last spelling pattern in these words often acts in much the same way as do 'weak endings' and 'strong sequences' in words that fall within the realms of the other three accent rules discussed above as a lead to the Key. Because these last spelling patterns are neither 'sequences' nor 'endings', they are called 'terminals'. Stated in a more simple way,

the designation 'terminal' should be reserved for the last spelling pattern of heavy words not accommodated PWAR, V/VCWAR, and KSAR. As such, the Key Syllable in words that fall in categories 1, 2, and 4 is the vowel spelling pattern and all extra letters immediately to the left of the terminal.

Words with more than two syllables in their uninflected forms as 'heavy' words have already been discussed in the earlier section. By way of analogy, words that contain only two syllables in their uninflected forms can be called 'light' words, and probably we may reserve the designation 'kernel' to refer to monosyllabic words. As such, words that fall within the third category where LSAR operates can safely be called 'light nouns' (e.g., camel, product). Treated in this way, light nouns contain a KS and an LS. For light nouns, the Key Syllable (KS) is the last vowel spelling pattern and all extra letters at the end of the word.

On the basis of the discussion made up to this point, we can claim that the LSAR applies to two large domains of words: (a) words with terminals; and (b) light nouns not accented by PWAR, V/ VCWAR, or KSAR. Table 5 illustrates the word domains on which LSAR operates.

In Table 5, categories 1 to 9 list 'terminals' that have a relatively high frequency in English. Categories 10 to 12 include less frequent terminals, but care has been taken to keep words apart according to their 'part of speech' (or domain). Category 13 includes light nouns. In each example, the Key syllable (KS) has been italicized, and the accent carrying vowel of Left Syllable (LS) underlined.

EFL/ESL learners should be aware that certain conditions may refine the word domains and even affect the accent-assignment rules that apply to word domains. As the first refinement in words that end in 'terminals', if a Strong Sequence (SS) occurs immediately to the left of the terminal, the KSAR applies rather than the LSAR (e.g., choreograph, unionist, bacteriostat). Here are the analyses for these examples:

ch / _or_ / eogr / aph   _un_ / ion / ist   b / act / _er_ / ios / tat
ch + KS + SS + T   KS + SS + T   b + LS + KS + SS + T

Where: LS = Left Syllable; KS = Key Syllable;
SS = strong Sequence; T = Terminal

As you will remember from the discussion presented for

KSAR above, in words with a Strong Sequences (i.e., eVSS and iVSS), the syllable immediately to the left of the strong sequence is the Key.

The second refinement applies to heavy verbs; heavy verbs must have no prefix immediately to the left of the terminal. It is this second refinement that distinguishes between verbs like 'reinstate' (PWAR) and 'reinstigate' (LSAR). The analyses are given below:

re / inst / ig / ate   re / in / st / _a_te
p + LS + KS + T   P + P + Φ + T

where: P = prefix; Φ = letter sequence that fails to count as a syllable

The third refinement has to do with words that end in '-ize', '-ist', '-ism', and '-ish'. The LSAR operates on such words only if they include no weak ending or strong sequence (SS) immediately to the left of the terminal (e.g., w_e_st_er_n_i_ze, det_er_m_i_nism, d_e_v_i_lish, psych_o_1_o_gist). However, in words that include internal weak endings, accent will be assigned according to the rule demanded by the weak ending in question (e.g., feverish, positivism, capitalize).

Accent assignment becomes more complicated when it comes to light nouns. Light nouns with a V or VC in the Key Syllable quite regularly receive accent on the Left Syllable (LS). There are, however, light nouns that contain VCC, VCe, or V V Key Syllables; these light nouns follow no solid basis for accent assignment and are accented on the KS and on the LS with about equal frequency. A few KSs that are found within this category of light nouns retain accent consistently on themselves (e.g., '-oon', '-oo', '-ese', '-ade'). Here are some examples:

EXAMPLE: baboon   bamboo   Chinese   arcade

It is often stated by some phoneticians that in Latinate verb-noun pairs, the major accent regularly falls on the last syllable of the verb, but on the first syllable of the noun (e.g., 'conflict' (N) versus 'conflict' (V) or 'rebel' (V) versus 'rebel' (N)): however, this rule of thumb is not generalizable enough. There are lots of Latinate nouns which receive accent on the same syllable as their verbal counterparts do (e.g., 'report' (N) and 'report' (V) or 'control' (N) and 'control' (V)).

To be able to use the LSAR safely, EFL/ESL learners need to be able to distinguish weak endings and strong sequences (SS). This is important for two reasons. On the

one hand, EFL/ESL learners must not mistake a weak ending or a strong sequence at the end of a word for a terminal. On the other hand, having found a terminal, EFL/ESL learners will need to identify any weak endings or strong sequences to the left of the terminal in order to determine which stress rule (i.e., PWAR, C/ VCWAR, KSAR, or LSAR) applies. EFL/ESL learners should also be able to judge the number of spelled syllables a word contains; this will insure that the word which appears to have a terminal is indeed a heavy word (also called 'long word'). Moreover, they should be able to locate the Key. They need to work on their spelling-pattern skills in order to separate terminals from the remainder of the word. To be able to apply the LSAR to light nouns, too, EFL/ESL learners must be able to (a) identify nouns by context clues, (b) judge the number of spelled syllables in them, and (c) locate the Key.

EFL/ESL learners should notice that two general sets of words remain exceptional for the LSAR. Both involve morphologically complex words of Greek origin. In American English, the first set includes words with secondary accent on the Key Syllable before a '-y' terminal. Many of these words receive accent on the syllable immediately to the left of the Left Syllable. Words that end in '-archy', '-mony', '-dxy', '-epsy', '-choly' fall in this category (e.g., hierarchy, oligarchy, matrimony, testimony, epilepsy, melancholy, orthodoxy). In the second set are words that contain trisyllablic prefixes that require accent on the first of the three syllables in the prefix. Prefixes of this type form a small group and include 'cinema-', 'encephalo-', 'entero-', 'cephalo-', 'hetero-', 'platino-', and 'sidero-' (e.g., h<u>e</u>terodox and s<u>i</u>deroscope).

3. Special Accent Cases

The four accent assignment rules discussed hitherto cover the majority of English words, but they do not exhaust all cases of accent assignment. Very often English words contain auto-accented sequences that are of a foreign origin (e.g., '-ide', '-alre', '-ee', '-eer', '-esce', '-esque', '-eur', 'Vque', '-ehe', '-ier', '-oo', and '-oon'). In words of these types, accent placement patterns are, in fact, the opposite of what is normally expected of words that contain terminals. That is, instead of carrying the major

accent on their antepenultimate syllables, words containing such sequences ordinarily carry the major accent on the word-final auto-accented sequence the position where a terminal often has a secondary accent.

Conclusion

A close look at the four accent-assignment rules explained in this article may reveal that in English, there is often a tendency toward placing the accent near the beginning of any given word. Instances, where the final syllable receives the accent, are not very many. This stands in overt contrast to such languages as Persian where there is a tendency for most words to receive primary accent on their last syllables. Yazdi dialect, a regional form of Persian spoken in the central province of Yazd in Iran, however, is very much like English in that most words in this dialect tend to receive primary accent on the word-initial syllable.

In a seminal study of the position of primary word accent in 1965, Delattre analyzed 5800 words from contemporary short story texts in English. In the analysis, Delattre ignored words of five or more syllables because they were very small in number. The accent positions for the rest of the words (i.e., words of one syllable to four syllables) were counted. Table 6 reports the percentages of accent placement as found by Delattre.

Table 6 shows that disyllabic words frequently receive accent on penultimate syllable (74%) and less often on the ultimate syllable (26%). In much the same way, trisyllabic words, too, show a tendency towards receiving accent on the antepenultimate syllable (55%), then on the penultimate syllable (39%), and least frequently on the ultimate (6%). However, this pattern is less true of quadrosyllabic words. While in 33% of the cases the accent falls on the first syllable, in 36% of the cases it falls on the antepenultimate syllable, in 29% of the cases on the penultimate syllable, and in only 2% of the cases on

Word type	1st syllable	2nd syllable	3rd syllable	4th syllable
Monosyllabic	100%			
bisyllabic	74%	26%		
trisyllabic	55%	39%	6%	
quadrosyllabic	33%	36%	29%	2%

Table 6. Percentages of Stress Assignment as Found by Delattre

the ultimate syllable. This finding implies that the antepenultimate syllable in heavy words is the most prominent syllable in most cases.

Shiri (1987) found that "English words with stress on their penultimate syllables have the largest total of intensity" (p. 342). Shiri's data showed that after the penultimate syllable, the totals of intensity of primary accent placement are gradually reduced in the order of first, third, fourth, fifth, sixth, and seventh syllables to the end of the words or expressions. It is, therefore, possible to generalize that the primary accent in English tends to have its concentration on mid-syllables within words or expressions.

Acknowledgments

References

[1]. **Bowen, D. S. (1975).** *Patterns of English pronunciation*. Rowley, Mass.: Newbury House Publishers.

[2]. **Chomsky, N., & Halle, M. (1968).** *The sound pattern of English*. New York: Harper and Row, Publishers.

[3]. **Delattre, P. (1965).** *Comparing the phonetic features of English, French, German, and Spanish*. Philadelphia: Jlius Groos Verlag Heidelberg.

[4]. **Dickerson, W. (1978).** English orthography: A guide to word stress and vowel quality. *IRAL, XVI* (2).

[5]. **Dickerson, W. (1981).** A pedagogical interpretation of generative phonology: The main stress rules of English. *TESL Studies, 4*, 57-93.

[6]. **Dickerson, W. (1982).** A pedagogical interpretation of generative phonology: Vowels in the key and left syllables. *TESL Studies, 5,* 66-107.

[7]. **Dickerson, W. (1985).** A pedagogical interpretation of generative phonology: Vowels outside the key and left syllables. *TESL Studies, 6,* 38-63.

[8]. **Dickerson, W. (1986).** A pedagogical interpretation of generative phonology: Consonant choice. *IDEAL, 1,* 53-68.

[9]. **Dickerson, W. (1989).** *Stress in the speech stream* (5 volumes). Urbana: The University of Illinois Press.

[10]. **Dickerson, W., & Finney, R. (1978).** Spelling in TESOL: Stress cues to vowel quality. *TESOL Quarterly, 12* (2), 163-176.

[11]. **Gordon, M. S. (1974).** *Speech improvement*. Englewood Cliffs: Prentice Hall.

[12]. **O'Connor, S. D. (1967).** *Better English pronunciation*. Cambridge: Cambridge University Press.

[13]. **Shiri, R. (1987).** *A contrastive study of stress placement on English and Persian words including frequency considerations for pedagogical purposes*. Unpublished masters' thesis, Shiraz University, Iran.

[14]. **Stageberg, N. C. (1964).** *An introductory English grammar*. New York: Holt, Rinehart and Winston, Inc.

[15]. **Yarmohammadi, L. (1995).** *A contrastive phonological analysis of English and Persian: A course book in applied phonological studies*. Shiraz: Shiraz University Press.

ARTICLES

Appendix A: Basic Anglo-Saxon

PREFIX	MEANING(S)	EXAMPLE
A-	at; in; on; in the act of	alike
BE-	to treat as; upon; against; thoroughly	besiege
DOWN-	down	downplay
FOR-	against	forswear
FORE-	before; in front of	forerunner
MIS-	wrongly	misread
OUT-	surpassing; outside	outspell
OVER-	to a greater/excessive degree; to become inverted	overspend
UN-	reverse action of; not	unwise
UNDER-	below standard; defi-cient; beneath	underline
UP-	up	uphold
WTTH-	from	withstand

Appendix B: Most Frequent Latinate Prefixes

PREFIX	MEANING	EXAMPLE
AB-	from; away	abnormal
AD-	to; toward	adverb
CON-	with; together; joint	conveyance; coauthor
CONTRA-	in opposition to	contradict
COUNTER-	in opposition to	counterpart
DE-	down; from; the opposite of	determine; deactivate
DIS-	away from; the opposite of	discuss; dislike
EN-	in; make	enjoy
EX-	out; former	extort; ex-senator
EXTRA-	outside of	extravagant
EXTRO-	outside	extrovert
IN-	in; not	inspire; incomplete
INTER-	between	interleave
INTRA-	inside of; within	intravenous
INTRO-	inside of; within	introduce
MULTI-	many	multiethnic
NON-	not	nonmilitant
OB-	toward; in the way; the reverse of	objective
PER-	through (out); thoroughly	perplexing
POST-	after	postscript
PRE-	before; beforehand	prepare; precondition
PRO-	forward; in favor of	provide; pro-Labor
RE-	back; again	reproach; redesign
RETRO-	Back(ward)	retroactive
SE-	apart; without	selective
SUB-	under; secondary; smaller/less than	subtract; subatomic
SUPER-	above; surpassing in kind	supertalented
TRANS-	across; from one to another	transatlantic
ULTRA-	beyond	ultramodern

PREFIX	ALTERNATE FORMS	EXAMPLES
I. AD-	AC + C/Q	access; acquit
	AF + F	affect
	AG + G	aggressive
	AL + L	allot
	AN + N	announce
	AP + P	appear
	AR + R	arrange
	AS + S	assure
	AT + T	attack
	A + ST	astute
	AD + elsewhere*	admit; advise
2. CON-	COL +L	collect
	COR + R	correct
	COM + B/P/M	combine; compress; commit
	CO + vowel	coerce
	CON + elsewhere	conform; convince
	CO + free stem	Co-partner
3. DIS-	DIF + F	diffuse
	DI + voiced C**	dimension; divulge
	DIS + elsewhere	dispel; distinct
	DIS + free stem	disvalue
4. EN-	EM + B/P	embark, employ
	EN + elsewhere	enchain, endear
5. EX-	EF + F	effect
	E + SC/SP/ST	escape; espouse; establish
	E + voiced C	erupt; emit
	EX + elsewhere	expel; extend
	EX + free stem	ex-wife
6. IN-	KS + N	ignore
	IL + L	illegal
	IM + B/P/M	imbue; impair; immune
	IR + R	irreverent
	IN + elsewhere	intent; invite
7. OB-	OC + C	occupy
	OF + F	offer
	OP + P	oppress
	OB + elsewhere	obscure; obtain
8. SE	SE + C/D/L/V	secede; seduce; select; severe
9. SUB-	SUC + C	succeed
	SUF + F	suffice
	SUP + P	suppress
	SU + SP/ST/SC	suspect; sustain; susceptive
	SUB + elsewhere	submit; subtract
10. SUPER-	SUR-	surpass
	SUPER-	supervise

* Elsewhere means 'in any other context'.
** Voiced C refers to 'stems that begin with the letters b, d, g, l, m, n, j, r, and v, which represent voiced consonant sounds'.

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