

REVIEW ARTICLE

THE PLACEMENT OF ACCENT IN ENGLISH<sup>1</sup>

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a review of

Sometimes writers of English create situations of conflict by placing material in a CADENCE that should be ACCENTed; for example:

"The iDEa deVELOped from exPERiments in MICE, "

Dr. Mathe said in a preliminary report in the British  
Medical Journal.

In the above example, the last twelve words are in CADENCE after the quotation, but at least preLIMinary, BRITish, and MEDical should be ACCENTed because they introduce important new information.

The length of a CADENCE is influenced by the wider context. The general rule for ACCENT is that new and contrastive words are ACCENTed but repetitive and non-contrastive words are not. Taken out of context, the following sentence would read:

"she USED to have to FIND things and reMIND me of  
my apPOINTments. "

But in its wider context it reads:

"SHE used to have to find things and remind me of my  
appointments. "

Here is the wider context:

- (i) Higgins: (explaining about Eliza to his mother)...she's USEful. She KNOWS where my THINGS are, and reMEM-bers my apPOINTments and so forth.
- (ii) Mrs. Higgins: HOW does your HOUSEkeeper get on with her?
- (iii) Higgins: Mrs. PEARCE? Oh, she's JOLLY GLAD to get so much taken off her hands, for before eLIZa came, SHE used to have to find things and remind me of my appointments.

(SHE is accented because it refers to Mrs. Pearce, not to Eliza.)

Vanderslice describes two modifications of ACCENT: DIP and SCOOP. A DIP is an accent that is obtruded downward instead of upward. SCOOP is a delayed pitch peak that occurs on the syllable after the accented syllable instead of on the accented syllable. DIP and SCOOP are rare in factual prose. Vanderslice regards DIP and SCOOP as indexical, not grammatical; so they have been left out of the rules below.

A third modification of ACCENT is EMPHASIS which is marked by an over-high pitch obtrusion. EMPHASIS is used for contrastive words.

In addition to the falling terminal pitch which is called CADENCE, there is a rising terminal pitch which is called ENDGLIDE. CADENCE is symbolized by a superscript 'F' (falling), and ENDGLIDE is symbolized by a superscript 'R' (rising). CADENCE and ENDGLIDE may occur separately or in combination with each other. There are four possible combinations of them:

- a) When CADENCE and ENDGLIDE are both minus value, the terminal pitch falls to the neutral range and remains level or sustained, often corresponding to a 'dash' punctuation;<sup>4</sup>
- b) If CADENCE is plus value but ENDGLIDE is minus value, the terminal pitch falls to an extra-low value, usually corresponding to the 'full-stop' punctuation;
- c) If CADENCE is minus value but ENDGLIDE is plus value, the terminal pitch rises after the last accented syllable, often corresponding to a 'question mark' punctuation;
- d) If both CADENCE and ENDGLIDE are plus value, the terminal pitch falls to the neutral range and then begins to rise in the last few centiseconds of the sense group, thus making a fall-rise contour, often corresponding to the 'comma' punctuation.

Sense groups are terminated by an oblique stroke '/' which is marked by a pause and/or by a slowdown in the pronunciation of the last few phonemes in the sense group. Oblique strokes are introduced into the text at certain grammatical boundaries by the first rule.

The final prosodic features to be assigned by Vanderslide are the two different tessituras: DOWNSHIFT and UPSHIFT. DOWNSHIFT is a lowering and compressing of the range of pitch variations and is symbolized by square brackets ' [...] '. UPSHIFT is a raising and compressing of the range of pitch variations and is symbolized by angle brackets ' < ... > '. DOWNSHIFT is generally used for parenthetical material, and UPSHIFT is used for material in quotation marks and for sentence-initial, non-subject material.

#### RULES FOR ASSIGNING THE PROSODIES

**RULE I:** Pause assignment.

- a) Locate an oblique stroke '/' at each syntactic boundary.

It is assumed that the text has been parsed by a program that assigns grammatical boundaries and associates with each boundary a number that corresponds to the level of the node in the derivation tree that is represented by the boundary. For example, the boundary between a preposition and the rest of a prepositional phrase represents a low level node

division and hence the boundary has a low number. The boundary between the subject and the predicate of a clause is a high level node and the boundary receives a high number. A boundary between sentences represents a higher node, so such a boundary receives a higher number. Boundaries between paragraphs and major discourse breaks receive the highest numbers.

- b) Delete obliques with low numbers.

The extent of the deletions is influenced by the stylistic options selected. 'Fast' causes the deletion of more obliques than does 'slow'. Generally, some threshold number is selected, corresponding to the speed of utterance, and all obliques with numbers equal to or less than the threshold number are deleted. Other considerations such as the number of accented and unaccented syllables between obliques must also be taken into account, because an oblique is not likely to be deleted if a large number of syllables separate it from the previous oblique.

RULE II: Accentuation.

RULE IIA: Initial assignment of accents.

- a) Assign an accent, ' / ' (=full stress), to every canonically heavy accentable syllable.
- b) Assign a macron, ' - ' (= half stress), to every canonically heavy unaccentable syllable.
- c) Assign a breve, ' ˇ ' (=no stress), to every canonically light syllable.

Note, however, that time and location adverbs occurring at the end of a sentence are assigned only macrons, otherwise they imply some contrast with the previous context, <sup>5</sup> e.g.

I admired his <sup>F</sup>conduct last night.

The last two words in the above example have received only macrons and are included in the CADENCE. To have given them ACCENTS would have been to imply some contrast in time with the previous context, i.e. 'last night' would be contrastively different from the time setting in the previous sentences.

Note, also, that certain function words have two forms, one with a light syllable and one with a heavy unaccentable syllable. One form or the other must be selected for each context.

RULE IIB: Accent reduction on echoic elements.

Reduce accents to macrons on all echoic elements unless they participate in an anti-thesis or are a part of a thematic summary.

Echoic elements are elements that are semantically equivalent to, or partly or wholly

homophonous with, some item in the previous context. The Higgins example given earlier shows the effects of accent reduction on echoic elements.

In the following example, which I came across recently, the echoic think in the second line is de-accented by the present rule, while the two think's in the third line are not de-accented because of the contrast between the third line and the first two lines. (The accent on the think in the first line is de-accented by Rule IIC below; the pronouns I and you are accented by Rule IIG below; and the third line is a bit difficult to pronounce satisfactorily because it violates Rule IIE below.)

Ī am nót what Ī think Ī am,  
 Ī am nót what you think Ī am,  
 Ī am what Ī think you think Ī am.

A thematic summary, according to Vanderslice, "is one or more sentences, typically at the end of a paragraph or comprising a separate short paragraph at the conclusion of a series of paragraphs on the same theme, which (a) terminate a sequence of sentences sharing an inventory... of related lexical items, and (b) contain only echoic elements, or at least a very small proportion of new lexical items."

The following example is the one brief example of a thematic summary that I have found, in which : sounds somewhat summarizes noisy and talking, while jumble somewhat summarizes machinery and everyone; hence, jumble of sounds is not de-accented.

The mǎchíněry wǎs nóisy,  
 éveryōne wǎs tǎlkǎng,  
 there wǎs ǎ jǔmblě of sǔnds.<sup>F</sup>

RULE IIC: Accent reduction of pre-echoic<sup>6</sup> elements.

Replace accents with macrons on all pre-echoic elements (the antecedents of echoic ones) if they occur in the same sentence as their echoic partners.

For example:

He hās ǎ rēd shírt and ǎ rēd tíe.<sup>F</sup>

In this example, the second red is the echoic element and the first red is the pre-echoic element, and both have had their accents replaced by macrons by Rules IIB and IIC.

This rule is less mandatory than the previous rule, but it is obeyed more often than not. It may also be extended to cover two contiguous sentences if not too many elements intervene

between the pre-echoic element and its echoic partner. Thus, in the following example, the second (or echoic) engineering has lost its accent by Rule IIB, and the first or pre-echoic) engineering has lost its accent by Rule IIC, even though the two are in separate sentences.

John studies electrical engineering.  
 Bill is in mechanical engineering.

**RULE IID: Accent shift on parallel elements.**

If two words meeting certain rules of parallelism and proximity are morphemically identical or homophonous except for differing prefixes and are not canonically fore-stressed, place accents on the prefixes and replace the accents with macrons on the subsequent syllables. If one of the words has no prefix, its accent remains unaffected, e.g.

- a) Speech uses concrete,  
       singing discrete intervals.
- b) I said deplane, not complain.
- c) They should just intercede,  
       not try to supercede.
- d) You ravel it and I'll unravel it.

This rule is the only rule that can change the status of a syllable from that of a light syllable to that of a heavy syllable, with the accompanying change of vowel. We need some way to predict the change in vowel, and it seems that if syllable type were made a distinctive (emic) feature of English, perhaps we could analyse the vowels of light syllables as conditioned variants of the vowels in heavy syllables, in which case the heavy-syllable vowels could be predicted from the light-syllable vowels.

If the contrasting syllables are not recognized as prefixes, this rule does not apply, e.g.

Let's use, not abuse health insurance.

where the ab- of abuse is not commonly recognized to be a suffix. (health has been de-accented by Rule IIE below.)

Shifts of accent to the right are infrequent and occur mainly where the differentiating syllables are canonically heavy unaccentable syllables. e.g.

I said half life, not half light.

where the canonical forms of the compound nouns (in the absence of contrast) are 'half,life and 'half,light.

In the following example, no shift to the right occurs because the differentiating syllables are light syllables.

ī sāid pōultice, nōt pōultry.

When the accented syllables are identical but each has a differentiating syllable both to the right and to the left, no accent shift occurs, e.g.

Shē thinks shē's thē picture of efficiēcy,  
būt really shē's a picture of officiousness.

Note that both occurrences of picture are de-accented by Rules IIB and IIC as echoic and pre-echoic elements.

RULE IIE: Rhythm rule.

a) Reduce the accent to a macron on the middle one of three consecutive accented syllables in the same sense group.

b) Reduce the middle accent to a macron similarly if the middle syllable is separated from the others by only a small number of unaccented syllables, no more than one of which may be a heavy unaccented syllable. The number of possible intervening syllables varies with the speed and style of speech.

c) In a sequence of more than three accented syllables meeting the above criteria, apply the rule to sequences of three as follows until the conditions of a) and b) no longer apply:

- 1) If two of the accented syllables are in the same word (or hyphenated pair), include them in the first three chosen;
- 2) otherwise take the closest three accented syllables;
- 3) or if 1) or 2) do not resolve the choice, start with the three farthest to the right.

Some words do have two heavy accentable syllables, as for example do the following:

'cla_ri'net	'sys_te'mat_ic
'home-'made	'rep_re'sent
'four'teen	'per_i'od_i_cally
'be_ne'fi_cial	'mic_ro'scop_ic

The application of Rule IIE to sentences or phrases containing such words gives pairs

such as the following:

hē plays thē clarīnēt	vs	it was ā clarīnēt solō
thē unknōwn sōldiēr	vs	thē sōldiēr is unknōwn
sōme hōme-māde jam	vs	thē jam is hōme-māde

Many other words have two heavy syllables, only one of which is accentable. The following words have two heavy syllables, the second one of which is ordinarily unaccentable. These are called 'falling stress' words.

'ver_tī,go	'ob_fus,cate
'can,not	'fruc_tī,fy
'black,bird	'op_e,ra_tor
'nit,wit	'sky,scra_per

In the following words, the first heavy syllable is unaccentable. Such words are called 'rising stress' words.

,com_pen'sa_tion	,ob_ser'va_tion
,con_fi_gu'ra_tion	,or_ien'ta_tion

I have found that when the rhythm rule applies in such a way as to de-accent a word that is participating in an antithesis, the application of the rule is optional. For example, should the words grey and white be de-accented or should they not, in the following sentence?

Shē was bōrn in ā small grēy hōvel,  
but shē diēd in ā big whīte cāstle.

Some speakers will de-accent the colour adjectives but others will not.

I have found that a similar conflict arises in a noun phrase with a series of accented modifiers and an accented noun. For example, if the following sentence is pronounced without previous context (so that none of the accented words is an echoic element), people will often disregard the rhythm rule.

Thē wēre twō nēw cārs in thē drivēway.

Of course, many more such conflicts are found in written English that was written without regard for how it is to be pronounced.

**RULE IIF: Accent reduction on verbs.**

Reduce the accent to a macron on a verb if it comes between (a) its subject and (b) an object, complement, or adverbial and if both (a) and (b) are accented.

John enjoys parties.  
 The government is going to prosecute tax evaders.

Here the verbs enjoys and going have been de-accented by Rule IIF.

Rule IIF is similar to the more general rhythm rule (Rule IIE), its main difference is that it allows a greater number of intervening unaccented syllables than does the general rhythm rule.

Again it seems to me that this rule is suspended when the verb to be de-accented is participating in an antithesis. e.g.

John rented a truck  
 but Bill owned a Jeep.

Here, as before, some people will apply the verb rule and de-accent the verbs, but others will not.

**RULE IIG: Pronoun accentuation.**

A personal pronoun is accented whenever (a) it participates in an antithesis, or (b) the unmarked antecedent is not the true antecedent.

In their canonical forms, pronouns have heavy unaccentable syllables, and thus will receive macrons (half stresses) by Rule IIA. This present rule replaces the macron with an accent when the pronoun is in contrast. (This rule does not cover the weakening of pronouns to light syllables in their Jonesian 'weak forms' -- as in "see ya later".)

One example of the operation of this rule is in the 'I am not what I think I am' example given earlier, in which the antithetical I and you in the first two lines were accented.

The following two sentences show the contrast between unmarked and marked antecedent relationships of a pronoun.

Unmarked:

Bill saw John across the room and he ran over to him.

Marked:

Bill saw John across the room and he ran over to him.

In the unmarked example above, it was Bill who ran over to John. In the marked example,



the accenting of the pronouns signals that there is something unexpected about them, and the only other available interpretation is that John ran over to Bill. This automatic reinterpretation takes place only in the most obvious instances, as for example in the Higgins example given earlier where SHE was accented. In more complicated situations, the hearer must rely upon subsequent context to fill in the right interpretation, or he must stop the speaker and ask for clarification.

This pronoun rule remains, however, and if the unmarked antecedent is not the true antecedent of the pronoun, then accent the pronoun, however the hearer may react.

RULE III: Emphasis assignment.

Assign EMPHASIS (a) to all accented syllables in a sentence terminated by an exclamation mark, and (b) to accented syllables in an antithesis, as follows: (1) if the second element is negated, assign EMPHASIS to the first element only, and (2) if the second element is not negated, assign EMPHASIS optionally to the first element and obligatorily to the second element.

This rule gives the following examples:

He didn't go to Chicago,<sup>FR</sup>  
 he went to New York.<sup>F</sup>

or:

He didn't go to Chicago,<sup>FR</sup>  
 he went to New York.<sup>F</sup>

but:

He went to Paris,<sup>F</sup>  
 not to London.<sup>F R</sup>

For this rule to operate, the contrasting words must not have been de-accented by any of the rules in Rule II.

Not also that many of the examples given so far will now have some of their accents replaced by EMPHASIS.

RULE IV: CADENCE and ENDGLIDE assignment.

a) Assign falling 'F' intonation (+CADENCE, -ENDGLIDE) to a sense group terminated by a full stop, an exclamation mark, or a semicolon in the orthographic text.

b) Assign fall-rise 'F-R' intonation (+CADENCE, +ENDGLIDE) to those sense groups which are terminated by a colon or a comma.

c) Assign sustained (unmarked) intonation<sup>4</sup> (-CADENCE, -ENDGLIDE) to sense groups terminated without punctuation or by an unpaired dash unless the second of the two sense groups is an antithesis, in which case assign fall-rise.

d) Assign rising 'R' intonation (-CADENCE, +ENDGLIDE) (1) to sense groups terminated by a question mark, and (2) to the first of two sense groups in an antithesis.

Rule IV d) (1) is an oversimplification, since many questions end with falling intonation in ordinary speech. Vanderslice chose this solution because in reading factual prose most questions can be read with a rising intonation quite acceptably. For conversational texts, we would have to devise more elaborate rules.

RULE V: Tessitura assignment.

a) Assign DOWNSHIFT (square brackets) to (1) material between pairs of orthographic brackets, (2) material between pairs of orthographic dashes, (3) non-restrictive clauses enclosed in commas, (4) medial and final vocatives, and (6) medial and final ascriptions and material subordinately conjoined. Note that (4), (5) and (6) are also (-ACCENT, +CADENCE, +ENDGLIDE).

b) If an accented function word immediately precedes a left square bracket, assign rising 'R' intonation (-CADENCE, +ENDGLIDE), otherwise assign fall-rise 'F-R' (+CADENCE, +ENDGLIDE).

c) Assign UPSHIFT (angle brackets) to (1) any sentence-initial structure not belonging to the subject, and (2) any material that was assigned DOWNSHIFT in rule a) that contains an element that is participating in an antithesis.

d) If no punctuation, or only a comma, intervenes between a left angle bracket and the preceding word in the text, then rewrite the intonation contour at that point to a sustained intonation (-CADENCE, -ENDGLIDE).

This completes the list of rules. Vanderslice concludes his presentation by taking an article from a scientific journal and applying his rules to it. I will include only the first three sentences of his example here:

S1: 'Hu\_man\_ex'per\_i\_ence<sup>4</sup> \_and<sup>2</sup> 'hu\_man  
\_be'hav\_iour<sup>5</sup> ,are<sup>3</sup> \_ac'ces\_si\_ble<sup>2</sup> \_to  
<sup>1</sup> ,ob\_ser'va\_tion<sup>3</sup> \_by<sup>1</sup> 'ev(e)\_ry\_one.<sup>7</sup>

S2: \_The\_psy'cho\_lo\_gist<sup>4</sup> 'tries<sup>3</sup> \_to<sup>2</sup>  
'bring<sup>1</sup> ,them<sup>2</sup> ,un\_der<sup>1</sup> 'sys\_te'ma\_tic  
'stu\_dy.<sup>7</sup>

S3: 'What <sup>3</sup> ,he <sup>2</sup> \_per'ceives, <sup>4</sup> \_how'ev\_er, <sup>5</sup>  
 'an\_y\_one <sup>2</sup> ,can <sup>1</sup> \_per'ceive; <sup>6</sup> ,for <sup>1</sup>  
 ,his 'task <sup>5</sup> ,he <sup>2</sup> \_re'quires <sup>3</sup> ,no  
 'mi\_cro,scope <sup>2</sup> \_or <sup>1</sup> ,e,lec'tro\_nic  
 'gear. <sup>7</sup>

(I have changed Vanderslice's \_e,lec'tro\_nic to ,e,lec'tro\_nic in the last sentence above.)

By Rule I, insert an oblique stroke at each numbered juncture. In this example, Vanderslice selected a threshold number of '3', so delete all obliques associated with numbers '1', '2', and '3'. Then delete all the numbers, leaving only the oblique strokes that were associated with numbers higher than '3'.

Note that these boundaries and numbers could have been assigned by a parsing program and that the canonical forms of the words could have been obtained from a dictionary. This is the form that the text must have before the prosodies are to be assigned. Actually, for this example, Vanderslice only simulated what the parsing program should produce.

By Rule IIA, assign 'ˈ' (accent) to all heavy accentable syllables, 'ˉ' (macron) to all heavy unaccentable syllables, and '˘' (breve) to all light syllables.

After all the rules have been applied, the text has the following resultant shape:

S1: Húman expérence/and hūman beháviour/are  
 accéssible to óbservátion by éveryone./

S2: The psychólogist / tries to bríng thēm  
 under systématíc study. /

S3: < What hé perceives> [however,] ányone cān perceíve:/fór hīs tās̄k/ hē  
 requíres nō microscōpe / or ēlectrónic géar./

(In the text above, all the breves have been omitted.)

In the specific notes below, the first number refers to the sentence number and the second number refers to the number of the word in that sentence.

1.01 Húman

accent retained on this pre-echoic member of a pair (c.f. 1.04 (human) ) because it is paragraph initial.

1.02	ex <sup>F</sup> per <sup>R</sup> i <sup>ː</sup> ence /	pause retained because both elements of the compound subject contain adjectives.
1.04	hu <sup>ː</sup> man	accent deleted because it is echoic to 1.01 (human).
2.02	psy <sup>F</sup> ch <sup>R</sup> ol <sup>ː</sup> ogist /	emphasis has been assigned because of the antithesis with 1.11 (everyone). The pause has been retained because of the emphasis.
2.03	tr <sup>ː</sup> ies	de-accented by the verb rule.
2.05	br <sup>ː</sup> ing	infinitive forms are excepted from the verb rule when they are conjoined with finite verbs.
2.06	th <sup>ː</sup> em	anaphoric to 1.01 - 1.05 ( <u>Human experience and human behaviour</u> ).
2.08	sys <sup>ː</sup> tem <sup>ː</sup> atic	emphasized by contrast with 1.09 ( <u>observation</u> ), and the second heavy syllable has been de-accented by the rhythm rule.
2.09	stu <sup>F</sup> dy /	emphasized heuristically; the text is ambiguous as to whether <u>observation</u> (1.09) is a kind of study that is nonsystematic or is an activity contrasting with the entire concept of <u>systematic study</u> (2.08 - 2.09)
3.01	<Wh <sup>ː</sup> at	UPSHIFT for initial non-subject elements.
3.02	h <sup>ː</sup> e	accented although anaphoric to <u>psychologist</u> (2.02) because of the antithesis with <u>anyone</u> (3.05).
3.03	per <sup>F</sup> ce <sup>R</sup> ives>	could be de-accented as pre-echoic to <u>perceive</u> (3.07).
3.04	[h <sup>F</sup> ow <sup>R</sup> ever]	DOWNSHIFT because it is a sentence medial adverb; the CADENCE is continued by the DOWNSHIFT rule.
3.05	any <sup>F</sup> one	emphasis by contrast with <u>he</u> (3.02).
3.07	per <sup>ː</sup> ceive; /	de-accented as echoic to 3.03 ( <u>perceive</u> ); semicolon assigns falling intonation.
3.08	fo <sup>ː</sup> r	<u>for</u> is accented when it is a clause-initial preposition, as opposed to being a conjunction.

- |      |                                     |  |
|------|-------------------------------------|--|
| 3.10 | $\bar{R}$<br>task /                 | de-accented as being anaphoric to 2.03 - 2.09 (i.e. the task of bringing human experience and human behaviour under systematic study). |
| 3.12 | $\bar{R}$<br>requires               | de-accented by the verb rule.  |
| 3.14 | $\bar{F}$ $\bar{R}$<br>microscope / | a canonically falling-stressed word.   |
| 3.16 | $\bar{R}$<br>electronic             | a canonically rising-stressed word.  |
| 3.17 | $\bar{F}$<br>gear /                 | accented heuristically, ignoring the possibility that <u>microscope</u> (3.14) may imply <u>gear</u> pre-echo echoically.              |

Although there are refinements still needed in the rules, as some of the notes above show, Vanderslice is to be complimented for making such important advances in the understanding of the placement of accent in American English. It will be interesting to see what different rules, if any, may be needed for Australian and British English.

#### FOOTNOTES

1. This paper was originally presented at a meeting of the Linguistic Society of Papua New Guinea at the University of Papua New Guinea on 2 March, 1971.
2. Charles W. Peck, 1969. An Acoustic Investigation of the Intonation of American English; Natural Language Studies No. 1. Ann Arbor: The University of Michigan.
3. Vanderslice originally used the feature STRONG (vs. WEAK) to describe syllable types, but to meet the objections of other linguists, he has changed and now uses the terms HEAVY (vs. LIGHT). The latter terms will also be used in this review.
4. Vanderslice now recognizes only three basic intonation contours. The feature complex (-CADENCE, -ENDGLIDE), rather than designating a sustained intonation pattern, is now taken to characterize a non-nuclear syllable. The sustained intonation contour is now regarded to be a variant of the fall-rise contour.
5. The restrictions on accenting sentence-final adverbs of time and location are related to the linear ordering effects described by Dwight Bolinger in his 1952 article "Linear Modifications," in the Publications of the Modern Language Association, also reprinted in Dwight L. Bolinger, 1965, Forms of English: Accent, Morpheme, Order, edited by Isamu Abe and Tetsuya Kanekiyo. Tokyo: Hokuou Publishing Company.

I am indebted to Professor Andras Balint of the University of Papua New Guinea for calling Bolinger's article to my attention.

6. Vanderslice originally used the term 'procatarctic' to describe the antecedent partner of an echoic element. Many objected to this rare word, and so Vanderslice has changed the term to 'pre-echoic', a rather more comfortable word.