What is Counted as a Syllable?:
A Consideration Based on Some Anomalies
Detected in English Suffixation

Takeshi Yamamoto[1]

1．Introduction

The syllable is undoubtedly a useful concept for linguistic generalization. English word stress, especially in cases where suffixation is involved, is a good example. Below is Fudge's (1984: 40–42) classification of English suffixes in terms of accentuation.

(1) a. Stress-neutral
    b. Auto-stressed
    c. Pre-stressed 1
    d. Pre-stressed 2
    e. Pre-stressed 1/2

Auto-stressed suffixes attract the main stress onto itself, and pre-stressed 1 suffixes and pre-stressed 2 suffixes place the main stress on one and two syllables, respectively, leftward. Pre-stressed 1/2 suffixes put the main stress on the syllable preceding the suffix if it is heavy, and one syllable further leftward if it is light. The syllable is seen to play essential roles here.

However, it is also known that this kind of generalization allows

exceptions.　This paper argues that the existence of these exceptions can be attributed to a certain type of syllable they contain, which will lead us to reconsider what we count as a syllable.

　　The organization of the paper is as follows.　In section 2, we will deal in great detail with some accentual complexities *-ate* creates.　In section 3, we will treat a few more suffixes including *-ish* and find that a certain type of syllable is involved with apparent exceptionalities.　The findings will bring us in section 4 to reconsider the exceptions to *-ate* and then how syllables are counted.

2.　Accentual anomalies in suffixation of *-ate*

2.1.　Fudge's (1984) classification of English suffixes

　　Fudge (1984: 40–42) argues, as touched upon in *Introduction*, that English suffixes, inflectional and derivational, are classified into five categories, which are repeated below with his complete set of examples.

(2)　a.　Stress-neutral suffixes

　　　　-s/-es (plural), -'s (possessive), -er$_C$(comparative), -est (superlative), -s/-es (3rd person singular), -ed (past tense, past part.), -en$_A$ (past participle), -ing (present part., gerund);

　　　　-able (m), -acy (m), -age (m), -al$_B$, -ance (m), -ant$_B$ (m), -ary (m), -ce, -cy, -dom, -en$_B$, -en$_C$, -er$_A$ (m), -er$_B$ (m), -ery (m), -ess, -ful$_A$, -ful$_B$, -hood, -ier (m), -iour, -ise$_A$/-ize (m), -ish, -ism (m), -ist (m), -ite$_A$ (m), -less, -let, -ly, -ment (m), -ness$_A$ (m), -or$_A$ (m), -ory (m), -ous (m), -ry, -s, -some, -t (m), -th$_A$, -th$_B$, -ty$_A$, -ty$_B$, -ure (m), -ward, -ways, -wise, -y$_A$, -y$_B$ (m)

b. Auto-stressed suffixes

-ade, -aire, -aise, -ate$_A$ (m), -ee (m), -een, -eer, -elle, -enne,
-esce, -ese, -esque, -esse, -et (m), -ette, -eur, -ier (m), -ine$_D$,
-ique, -ise$_B$, -ite$_C$ (m), -ment (m), -ness$_B$, -oo, -oon, -ose (m),
-otte (m), -teen

c. Pre-stressed 1 suffixes

-erie, -ic, -id, -ion, -ish (m), -itory, -ity/-ety, -uble

d. Pre-stressed 2 suffixes

-able (m), -acy (m), -ast, -ate$_A$ (m), -ate$_B$, -cide, -ene, -er$_A$ (m),
-fy, -gon, -ine$_C$, -ise$_A$/-ize (m), -ism (m), -ist (m), -ite (m), -ite$_B$,
-ite$_C$ (m), -ment (m), -oir(e), -ose (m), -tude, -y$_B$ (m)

e. Pre-stressed 1/2 suffixes

-ad, -age (m), -al$_A$, -an, -ance (m), -ant$_A$, -ant$_B$ (m), -ar, -ary (m),
-ate$_C$, -ative, -ature, -ee (m), -ée, -ence, -ent, -ery (m), -ible,
-ide, -ile, -ine$_A$, -ine$_B$, -ine$_E$, -is, -ive, -oid, -on, -or$_A$ (m), -or$_B$, -or$_C$,
-ory, -our, -ous (m), -um, -ure (m), -us

Those labeled "(m)" above are what he calls "mixed suffixes," which have
more than one mode of operation.   For example, *-age* behaves as a stress-
neutral suffix when attached to a free morpheme and as a pre-stressed
1/2 suffix when attached to a bound morpheme.

2.2.   Several kinds of *-ate* and their behavior in accentuation

It seems true that each suffix imposes on suffixed words a particular
stress pattern including a stress-neutral one, but it is also true that such a
descriptive generalization as Fudge's (1984) in (2) above allows exceptions.

　　Fudge (1984: 60–61) mentions that several suffixes written as -*ate* need to be distinguished in the following way, where A, B, and C correspond to subscripts found in (2).[2]

(3)　A.　Verb-forming
　　　　1.　Pre-stressed 2 in words of three or more syllables
　　　　　　délegàte, démonstràte
　　　　2.　Auto-stressed in disyllables
　　　　　　cre.áte, ròtáte, rè-cre.áte
　　　B.　Noun-forming in chemical terms
　　　　3.　Pre-stressed 2
　　　　　　hýdràte,[3] permánganàte (or permánganate)
　　　C.　Noun- or adjective-forming
　　　　4.　Pre-stressed 1/2
　　　　　　àltérnate (*Brit.*), clímate, degénerate, délegate, epíscopate

Of the four kinds of -*ate* above, we will be concerned with all but auto-stressed verbs.　Fudge (1984: 60–61) shows some exceptional words to (A1) and (C4), which are given in (4) and (5) below.　Plus signs show that the items also have a regular pattern.[4]

(4)　Exceptions to -*ate*$_{A1}$
　　(a)　Pre-stressed 3
　　　　améli.oràte, detéri.oràte, disóri.entàte, éti.olàte, óri.entàte, óxygenàte, péregrinàte, térgiversàte[5]
　　(b)　Pre-stressed 1
　　　　cìrcumvállàte, ⁺dèhýdràte, ⁺ìmprégnàte, sequéstràte

(5) Exceptions to -ate$_{C4}$ [6]

cárdinalàte,[7] pátri.àrchàte,[8] pòmegránate/pómegrànate,

cónsummate

We will think about what motivates these exceptional cases.

Of these exceptions, Fudge (1984: 61) says something only for *pome-granate* and *consummate*.   He regards *pòmegránate* as exceptional in that the syllable /græ/ attracts primary stress in spite of its lightness.   Conversely, he looks on *cónsummate* as an exception because its second syllable escapes stress irrespective of its heaviness.   He also says that *pómegrànate* shows a compound pattern.

Despite his explanation, *cónsummate* is not considered an exception—its second syllable is indeed light, its "heaviness" being due to the double consonant in orthography.   In contrast, *pomegranate* is an idiosyncratic exception.   Its peculiar stress pattern seems to come from its origin as a compound just as Fudge mentions.[9]

Among what remains, those in (4b) seem to be the easiest to explain. Here we can find that prefixes play a vital role in accentual anomalies—the pre-stressed 2 pattern is placed inside the stem domain.

(6) cìrcum[vállàte], dè[hýdràte], ìm[prégnàte], se[quéstràte]

The explanation above can also be confirmed by the fact that *sequestrate*, together with *dehydrate* and *impregnate* Fudge mentions, also has a regular pattern as references show,[10] which means that these regular forms have a whole word as their accentual domain as illustrated in (7) below. The reason *[*circúmvallàte*] is not detected might be that this prefix is conspicuous enough to be treated as such because of its disyllabicity, or that an uncommon sequence of /mv/ reminds us of the existence of a

morpheme boundary in-between.

(7) [déhẏdràte], [ímpregnàte], [séquestràte]

What about other types of exceptions? As for (4a), Liberman and Prince (1977: 276–77) also give preantepenultimately stressed *-ate* verbs as examples showing "Long Retraction,"[11] which would constitute exceptions to the antepenultimate generalization in *-ate*$_{A1}$. Fudge's labels such as "pre-stressed 3" and his classification in (3) will be used for convenience hereafter also.

(8) Liberman and Prince's (1977) pre-stressed 3 exceptions of *-ate*$_{A1}$
    a. áli.enàte, améli.oràte, detéri.oràte, éti.olàte,[12] óri.entàte
    b. óxygenàte, péregrinàte

Liberman and Prince give different accounts to (8a) and (8b). They attribute the stress pattern of (8a) to the sequence of two adjacent short vowels, as well as the anomalous patterns of the following words in (9).

(9) ìde.ológical, méte.orìte, méte.oròid, tóre.adòr

Hayes (1982: 265–69) also mentions this type of irregularity in stress placement but explains it by regarding the first member of each vowel sequence as nonsyllabic /j/[13] underlyingly, noting that the first member is always [i] and that this vowel can optionally appear as [j] in cases such as *alienate* and *ameliorate*. He gives additional examples as below, which are classified into three groups here for convenience.[14]

(10) Hayes' (1982) exceptions of -*ate*

    a. A pre-stressed 3 exception to -*ate*$_{A1}$

       vári.egàte

    b. Pre-stressed 3 exceptions to -*ate*$_{B3/C4}$

       péti.olàte, própi.onàte

    c. Other pre-stressed 3 exceptions

       Ébi.onìte, vesúvi.anìte, vári.olòid

    Turning back to Liberman and Prince (1977), they classify the two words in (8b) into the "miscellaneous" class, suggesting that an internal word boundary keeps the original stress intact.

(11) [óxygen]àte (< óxygen)
     [péregrin]àte (< péregrine, péregrìne)

Tergiversate in (4a) has the following forms as references show, which are interpreted in the same way.   Subsidiary stress in the base can be lost, just as *péregrìne*, as well as *péregrine*, becomes *péregrinàte* as shown in (11).

(12) [térgivèrs]àte/[térgivers]àte (< térgivèrse)

The following two words in (5) above, which are exceptions to -*ate*$_{C4}$, can be accounted for in the same manner.

(13) Exceptions to -*ate*$_{C4}$
     [cárdinal]àte (< cárdinal)
     [pátri.àrch]àte (< pátri.àrch)

More examples of the same kind are found in literature, which are shown below in our familiar classification.

(14) a. Pre-stressed 3 exceptions to -ate$_{A1}$

 [hýdrogen]àte[15] (< hýdrogen)

 [í.odin]àte[16] (< íodìne, íodine)

 b. A pre-stressed 3 exception to -ate$_{B3/C4}$

 [vácu.òl]ate/[vácu.ol]àte[17] (< vácuòle)

Note that *vacuolate* will fulfill Liberman and Prince's condition that there be a sequence of two adjacent short vowels, but that it violates Hayes' constraint on the first vowel.

 Some of the above-mentioned exceptions have also a regular pre-stressed 2 pattern as confirmed by references.

(15) oxýgenàte[18]/[óxygen]àte (< óxygen)

 hydrógenàte[19]/[hýdrogen]àte (< hýdrogen)

 i.ódinàte/[í.odin]àte (< íodìne, íodine)

The following two words also show a regular pre-stressed 2 pattern; however, it is not realized by changing the stress position, but by coalescing the medial vowel sequence leading to one syllable decrease.

(16) quadrisyllabic   trysyllabic

 vári.egàte   →   vár[ɪ~ə]gàte

 vácu.olàte   →   vác[jə]làte

 Another anomalous stress pattern is seen in *tèrgivérsàte*, *pàtri.árchàte/pàtri.árchate*, and *vàcu.ólate*, where the primary stress falls

on the penultimate syllable containing a two-mora vowel.   This corresponds
to Liberman and Prince's "Weak Retracting" pattern (see n. 11 above),
which is quite regular for *-ate* adjectives and nouns but irregular for *-ate*
verbs.   Note also the variants *térgivèrsàte, pátri.àrchàte/pátri.àrchate*,
and *vácu.òlate* as shown in (12)–(14) above, where primary stress falls
preantepenultimately, but where the penultimate syllable also bears sub-
sidiary stress.   The fact that these three words have several accentual
variants seems to be attributed to their uncommonness, which means
that they have not yet been accommodated sufficiently to the phonology
of English.   To put it differently, the various forms will enable us to see
the processes of accommodation of the words in the following way.

(17)   Base   Suffixation   Fully accommodated

    térgivèrse   →   [térgivèrs]àte → [térgivers]àte

                              tèrgivérsàte

                              tèrgíversàte → tergíversàte

    pátriàrch   →   [pátri.àrch]àte → pàtri.árchate

    vácuòle   →   [vácu.òl]ate   →   [vácu.ol]àte → vác[jə]làte

                              vàcu.ólate

    All the complexities seen thus far about pre-stressed 3 exceptions
of *-ate*$_{A1}$ and *-ate*$_{C4}$ would be recapitulated in (18) and (19), respectively.

(18)   Pre-stressed 3 exceptions to *-ate*$_{A1}$

    a.   Containing a vowel sequence.

       1.   Attaching to free morphemes, main stress coinciding with the
          original.

       [áli.en]àte, [óri.ent]àte

    2.   Attaching to bound morphemes.

       améli.oràte, detéri.oràte, éti.olàte, vári.egàte (→ vár[ɪ~ə]gàte)

  b. Not containing a vowel sequence. Attaching to free mor-phemes, main stress coinciding with the original. Pre-stressed 2 also detected in most cases.

    1. [óxygen]àte (→ oxýgenàte), [hýdrogen]àte (→ hydrógenàte), [í.odin]àte (→ i.ódinàte), [péregrin]àte

    2. [térgivèrs]àte/[térgivers]àte (→ tèrgivérsàte/tèrgíversàte/ tergíversàte)

(19) Exceptions to *-ate*$_{C4}$

    Attaching to free morphemes, main stress coinciding with the original.

  a. Containing a vowel sequence.

    [péti.ol]àte, [própi.on]àte, [pátri.àrch]àte (→ pàtri.árchate), [vácu.ò]ate/[vácu.ol]àte (→ vác[jə]làte/vàcu.ólate)

  b. Not containing a vowel sequence.

    [cárdinal]àte

We are now facing the question whether these types of exception are driven by different motives. In other words, can we find a single princi-ple governing all of these or not? To answer this question, let us observe another case of suffixation in the next section.

3. Accentual restrictions detected in "stress-neutral" suf-fixes

    Fudge (1984: 80) distinguishes two kinds of *-ish*, adjective- and verb-forming. He regards the former as stress-neutral and the latter as pre-stressed 1, this difference being partly due to the fact that the

adjective-forming suffix attaches to free morphemes, but that the verb-forming suffix attaches to bound morphemes, where the concept "stress-neutral" is meaningless.

(20)   A.   Adjective-forming, meaning 'rather X(-like)'
            Stress-neutral
                kíttenish (< kítten)
                yéllow.ish (< yéllow)
       B.   Verb-forming suffix, with no fixed meaning
            Pre-stressed 1
                abólish, demólish
            Pre-stressed 2 exception
                impóverish

However, Burzio (1994: 293) argues that some of the stress-neutral suffixes including adjective-forming -ish$_A$, though not changing the stress pattern of the base, only attach to oxytonic or paroxytonic bases, that is, those having stress on the first or second syllable from the last.   Burzio's (1994: 293) examples for -ish$_A$ follow.

(21)   [féver]ish, [bláck]ish, [babóon]ish, [yéllow]ish, [tíger]ish
         *[ví.olet]ish, *[élephant]ish

Although Burzio (1994) makes no mention of it, there is an important regularity noticed in antepenultimately stressed -ish adjectives. Yamamoto (2009: 292) points out that the onset of the final syllable of -ish adjectives formed from paroxytonic bases is limited to sonorants or zero. If we limit ourselves to monosyllabic and trochaic bases, the latter have to end with a sonorant including vowels while the former do not have such

a restriction.   The following are his examples.

(22) a.   [bláck]ish, [chíld]ish, [gráy]ish, [gréen]ish, [lóng]ish, [síck]ish

      b.   [áctor̲]ish, [dévil̲]ish, [héathen̲]ish, [mónkey̲]ish, [tíger̲]ish,
           [wóman̲]ish

It is important to point out that *impóverish*, the verbal exception Fudge
(1984: 80) gives as in (20), would fall in this generalization, the only differ-
ence being that the base is not a free morpheme having a fixed stress
pattern.

      Yamamoto (2009: 292–93) also argues that similar restrictions are
found in *-age*, forming nouns, and *-er* and *-est*, forming adjectival compara-
tives and superlatives.   His examples follow.

(23) a.   [blóck]age, [bónd]age, [fóot]age, [míle]age, [póst]age,
           [shórt]age

      b.   [ánchor̲]age, [bárrel̲]age, [cómmon̲]age, [gállon̲]age,
           [pílgrim̲]age, [tútor̲]age

(24) a.   [cóld]er, [déep]er, [smáll]er

      b.   [áwfull̲]er, [cléver̲]er, [cómmon̲]er, [fríendli̲]er, [hándsom̲]er,
           [háppi̲]er, [méllow̲]er

It can be summarized that derived or inflected words containing a
sonorant- or zero-onset syllable can be fitted into accentual molds which
are one syllable smaller.   In other words, such a syllable can be over-
looked by accentual molds because of its degeneracy.

      In what position syllables with a sonorant or zero onset can be
regarded as degenerate in this sense remains an issue.   Considering the

words in (22b, 23b, 24b) above, degeneracy appears immediately before
the suffixes; words such as *de.vi.lish* are allowed, but those such as
**o.li.vish* are not.

Returning to Burzio (1994), he states that verb-forming -en$_C$, which
Fudge (1984: 67) regards also as stress-neutral, attaches only to monosyl-
labic bases (pp. 257–58). Carstairs-McCarthy (1998: 144), cited by Yama-
moto (2009: 298–99, n. 11), points out that this suffix is attached to bases
ending with an obstruent as in (25a), but that it is not attached to those
ending with a sonorant including vowels as in (25b).[20]

(25)   a.   blacken, dampen, redden, loosen, stiffen
       b.   *coolen, *grey en, *thinnen, *puren

Here we see the situation in which words containing a sonorant- or zero-
onset syllable cannot be fitted into a disyllabic mold. According to
Yamamoto (2009: 299, n. 11), this view is further confirmed by the exis-
tence of *quieten*, a trisyllabic exception, which has an onsetless syllable.

(26)   qui eten

All the cases seen so far in this subsection suggest that syllables
with a sonorant or zero onset are degenerate in a sense to the extent that
they are sometimes ignored by morphological and phonological rules.

4.   Reconsidering the pre-stressed 3 exceptions to *-ate*

What light does the view obtained in the previous section cast on the
pre-stressed 3 exceptions to *-ate* we saw in section 2.2? Pre-stressed 3
exceptions to *-ate* are divided into two categories: those containing a

vowel sequence (18a, 19a) and those not containing one (18b, 19b).   It is obvious that the former exceptions have at least one zero-onset syllable by definition, but almost all of the latter shown in (18b) and (19b) have at least one—but in many cases more than one—sonorant- or zero-onset syllable to the right of the main-stressed one.   The only exception is *tergiversate*, in which every syllable begins with an obstruent; but it has also a regular pre-stressed 2 pattern, the irregular patterns considered unaccommodated as we argued before.   Pre-stressed 3 exceptions listed in (18) and (19), but not accommodated pre-stressed 2 forms, are given again as (27) and (28), respectively, with the relevant sonorant or zero onsets underlined.

(27)   Pre-stressed 3 exceptions to -*ate*$_{A1}$
    a.   Containing a vowel sequence.
      1.   Attaching to free morphemes, main stress coinciding with the original.
        á.li. e.n̲àte, ó.ri. en.tàte
      2.   Attaching to bound morphemes.
        a.mé.li. o.r̲àte, de.té.ri. o.r̲àte, é.ti. o.l̲àte, vá.ri. e.gàte
    b.   Not containing a vowel sequence.   Attaching to free morphemes, main stress coinciding with the original.   Pre-stressed 2 also detected in most cases.
      1.   ó.xy.ge.n̲àte, hý.dro.ge.n̲àte, í. o.di.n̲àte, pé.re.gri.n̲àte
      2.   térgivèrsàte/térgiversàte

(28)   Exceptions to -*ate*$_{C4}$
    Attaching to free morphemes, main stress coinciding with the original.
    a.   Containing a vowel sequence.
      pé.ti. o.l̲àte, pró.pi. on̲àte

    pá.tri.‿àr.chàte, vá.cu.‿o.làte

b.   Not containing a vowel sequence.

    cár.di.na.làte

    How do we interpret the fact—the fact that almost all the exceptions have a sonorant- or zero-onset syllable?　If they are not true exceptions and if syllabic generalizations are on the right track, it would be considered that how we count syllables as we do have some problems.　Here we face a rather naive question that arises: What in the world do we count as syllables?　A naive answer to this naive question seems to be nuclei—the most sonorous part of each syllable, as is illustrated in (29a) below.　Yet given the fact that syllables with sonorant or zero onsets are disregarded by stress rules, onsets too play a vital role.

    In terms of sonority, a succession of syllables can be regarded as alternations of hills and troughs, which correspond roughly to vowels and consonants, respectively.　So even if we do not count nuclei themselves, we will be able to count syllables by counting sonority hills.　The only exception will be a juxtaposition of two heterosyllabic vowels, in which case syllable duration might help.　This is illustrated in (29b) below in a simplified way, where only three degrees of sonority—vowels, sonorant consonants, and obstruents—are distinguished.

    It is not argued that nuclei play no roles in counting syllables; but, rather, they are definitely counted when syllables are counted in a strict way.　It seems, however, that syllables can be counted in a "rough" way if need be.　In suffixation, this "rough" count helps accommodate more words to the accentual mold than the strict count does.　Conceptually, this way of counting is realized by loosening the distinction in sonority: two degrees—sonorants, including vowels, and obstruents—seem to be enough to explain the data seen so far.　This is illustrated in (29c),

where trisyllabic *monkeyish* and *devilish* are seen to have two sonority hills just as disyllabic *blackish* does.

(29) a. bla̲cki̲sh   mo̲nkey̲.ish   de̲vi̲lish
           N   N   N   N N   N N N

      b. blackish   monkey.ish   devilish

                                                vowels
                                                sonorant Cs
                                                obstruents

          b l æ̲ k ɪ ʃ   m ʌ̲ ŋ k i̲ ɪ ʃ   d ɛ v ə̲ l ɪ ʃ

      c. blackish   monkey.ish   devilish

                                                sonorants
                                                obstruents

          b l æ̲ k ɪ ʃ   m ʌ̲ ŋ k i̲ ɪ ʃ   d ɛ v ə̲ l ɪ ʃ

If we here again take up the issue in what position degenerate syllables can be overlooked, it can be reworded as in what position two adjacent syllables can be counted as one.   For the words in (22b, 23b, 24b), the last two syllables are regarded as one, with a sonorant consonant or a hiatus in-between, as in *devilish* and *monkeyish* in (29c) above.   As for the *-ate* words in (27, 28), the penultimate syllable and either one of the preceding or following syllable are treated as one syllable.   Below are some illustrations.

(30)   mon.key.ish, de.vi.lish, o.ri.en.tate, hy.dro.ge.nate

Ambiguity arises in many other cases such as *alienate* and *ameliorate*.

5.　Conclusion

We have thus far seen syllables with a sonorant or zero onset play a

vital role in exceptional stress placement observed rather extensively in suffixation of verb- and adjective/noun-forming *-ate*, adjective- and verb-forming *-ish*, noun-forming *-age*, inflectional *-er* and *-est*, and verb-forming *-en*. As a consequence, we have concluded that a "rough" count of syllables, which is realized by counting sonority hills more loosely, is utilized when necessary in suffixation besides the normal counting of nuclei which is used in other cases.

It should be pointed out that this sort of "rough" count of syllables is actually found in the accentuation of trimoraic given names in Japanese, a completely different language in terms of genealogy.[21] Further research will be needed in this field.

Notes

1) The author can be contacted at <Takeshi.Yamamoto@ma6.seikyou.ne.jp>.

2) Here and hereafter, primary stress and subsidiary stress are marked with an acute accent and a grave accent, respectively, no matter how they are shown in the works cited.   Lines are added under vowel letters for convenience of counting syllables.

3) Because this word contains only two syllables, pre-stressed 2 is forced to be pre-stressed 1.

4) Fudge uses asterisks instead, but the use of them is avoided here so as not to confuse them with those showing ill-formedness.

5) Also mentioned in Kingdon (1958: 69).

6) Fudge gives as exceptions normally stressed nouns and adjectives with the suffix *-ate* pronounced with a full vowel instead of a schwa, but they are not counted here.   Auto-stressed exceptions he gives are also excluded.

7) Also mentioned in Kingdon (1958: 70).

8) Also mentioned in Kingdon (1958: 69).

9) This word comes from Old French *pome grenate*.   See Simpson and Weiner (1989) for details.

10) The references consulted for stress here and hereafter are the following:

Jones (2003, 2006), *Merriam-Webster's Collegiate Dictionary* (1993/1999, 2003), *Random House Compact Unabridged Dictionary* (1987/1993/1996), Upton et al. (2001), *Webster's Ninth New Collegiate Dictionary* (1983/1990), *Webster's Third New International Dictionary* (1961/1993), and Wells (1990, 2000, 2008).　　The references vary as to the policy for indication of secondary stress, including whether to put the mark on non-reduced *-ate* [eɪt]. We will always indicate secondary stress in this case following Fudge (1984), resulting in unmarked *-ate* always representing reduced [ɪt～ət].

11)　"Long Retracting" words are those which have two unstressed syllables between stresses, one corresponding here to the primary stress, and the other, the secondary stress on *-ate*.　　The reason they call this pattern "Long Retraction" is that they think the left stress is given regressively on the basis of the right stress, skipping over two syllables instead of one or zero in the other modes of retraction — one heavy or light syllable in the case of "Strong Retraction" (*dé.sig.nàte*, *o.rí.gi.nàte*), and one light syllable or, when the syllable immediately preceding the right stressed one is heavy, no syllable in the case of "Weak Retraction" (*py.rá.mi.dòid*, *mo.llús.còid*).　　Note also that the Strong Retracting characteristic of *-ate*$_V$ (*cf.* (2)) and the Weak Retracting characteristic of *-oid* (*méte.oròid*) are overridden by Long Retraction.

12)　They give "etoilate" instead, which is, as Hayes (1982: 266) points out, apparently a misprint.

13)　His notation is /y/.

14)　*-ate*$_A$, *-ite*, and *-oid* are listed as Weak Retractors (pp. 242, 247); see n. 11 above.

15)　In Burzio (1994: 266).

16)　In Plag (1999: 216–17).

17)　The latter form is in Kingdon (1958: 70).

18)　In Burzio (1994: 86 n. 39, 266).

19)　In Burzio (1994: 86 n. 39, 266).

20)　More is mentioned on this suffix in Halle (1973: 13–14).

21)　Yamamoto (2009: 295–96) argues, on the basis of data found in literature, that the accentuation of trimoraic given names in Tokyo dialect of Japanese has the following two patterns depending on their final elements.

(A) a.   Accentless

　　　　-e (江, 枝), *-yo* (代, 世), *-o* (夫, 男, 雄), *-mi* (美, 実), *-ne* (音), *-no* (乃)

　　　　Masae, Masayo, Masao, Masami, Hatsune, Ayano.

　　b.   Initially-accented

　　　　-ko (子), *-ki* (樹), *-to* (人), *-go* (吾), *-ji* (二, 治, 次), *-ta* (太), *-ka* (香), *-na*
　　　　(奈, 菜), *-shi* (史, 詞, 志, 士), *-ya* (也, 弥, 哉), *-ho* (穂), *-ma* (馬)

　　　　*Maꜜsako, Maꜜsaki, Maꜜsato, Shoꜜugo, Maꜜsaji, Shoꜜuta, Haꜜruka,
　　　　Aꜜkina, Maꜜsashi, Maꜜsaya, Hiꜜdeho, Kaꜜzuma.*

According to him, the above can be generalized as follows.

(B) a.   Accentless:

　　　　when the last mora has a high or mid vowel and has a sonorant or no
　　　　onset.

　　b.   Initially-accented:

　　　　when the last mora has a low vowel or has a high or mid vowel and an
　　　　obstruent onset.

He further generalizes (B) in the following way, supposing that the sonorities of
obstruents, low vowels, and other segments including zero be 1, 3, and 2, respec-
tively, which can be thought of as another kind of "rough" count of syllables.

(C) a.   Accentless:

　　　　when the difference in sonority between the nucleus and the onset is 0.

　　b.   Initially-accented:

　　　　when the difference in sonority between the nucleus and the onset is
　　　　1 or 2.

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