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On the Syllabification of English Intervocalic Glides

Takeshi YAMAMOTO

1. Introduction—Why Toyot.a?

This is not a slogan of a Japanese car company, of course, but was my motive for this study; an astute reader might have noticed that it was, without missing the underlined y and the period that indicates a syllable break. Although an English-speaking person might have felt nothing particular, I, as a native speaker of Japanese, thought it weird when I happened to find the trademark in Wells (1990; henceforth LPD) and saw the difference of its syllabification between English and the source language.

(1.1) Toyot.a ← Jpn. Toyota

[toj 'o] [to 'ota] [j] [to 'oji] [t] [j] [tj 'oti] [j]

The point lies in the fact that the syllable onset glide [j] in Japanese has been changed into part of the English diphthong [oj], and this can be regarded, for the reason explained immediately below, as the problem of the syllabification of intervocalic glides.

The two glides of English, [j] and [w], appear only syllable-initially and, therefore, together with their phonetic similarities, can be considered positional allophones of nonsyllabic /i/ and /u/ respectively.

(1.2) [j, i] = /i/; [w, u] = /u/

(1.3) 'yea, 'wow

['jei] ['waz] /'jei/ /'uau/

The phonemes /i, u/ are realized as [j, w] at syllable onsets and as [i, o] in syllable rhymes. This phenomenon is comparable with such well-known alternations as these:
Various authors have said various things about English syllabification, but it seems that little has been said on the issue of intervocalic glides. In what follows, I will argue, giving additional examples, that English intervocalic glides tend to be resyllabified leftward against the widely believed "onset maximality"—the principle which states that segments are syllabified so that the onset may be maximized. I will also point out that English contrasts remarkably with Japanese and Hungarian in glide insertion and discuss to what differences among languages these glide-related matters might be ascribed.

2. The syllabification of intervocalic /i/

In this chapter, we will look at how intervocalic /i/′s behave, by classifying examples into three groups, to each of which one section will be allotted.

2.1. Maya, lawyer, buoyant

Let us first look at the following words—they are all loanwords with an orthographic y between two vowel letters.

(2.1) kayak, Maya 'Central American people', Toyota

Their pronunciations seem to be usually as follows.

(2.2) 'kay.ik, 'May.a, Toy.'ota

The counterparts in their source languages, however, have different syllable breaks.

(2.3) Yupik qa.yaq, Spanish Ma.ya, Jpn. To.yota

—their pronunciations and counterparts—
Some authors mention the last one—the “peculiar” word that led me to write this paper. Kreidler (1989, 126) writes, “Even before a stressed vowel the front glide may be part of the preceding vowel unit, as in Toyota /toiˈoutə/,” but does not say any more. Jensen (1993, 37) says:

[C]onsider the syllabification of such a sequence where C is a glide w or y, as in Toyota. In Japanese, this word is syllabified to·yo·ta, following the Onset Principle. But, in English, the syllabification is clearly toy·ota. We will have to claim either that English violates the Onset Principle in certain cases of intervocalic glides, or that English diphthongs are simple vowels at the time syllabification takes place. In this study we make the latter choice.

Even if we allow him to “make the latter choice,” the question still remains why English prefers the diphthong.

For the words in (2.1), some of the references I used give forms nearer to the originals, and some also record pronunciations that seem in-between. They are shown in (2.4) and (2.5) respectively.

(2.4) 'Ma.ya, To.ˈyota
[ˈmɐː.jə] /tɔː.ˈjæːtə/  

(2.5) 'ka(y).ˈyak, 'Ma(y).ˈya, To(y).ˈyota
[ˈkaː.ʃək] /tɔː.ˈjæːtə/  

Comparing the three groups (2.2), (2.4), and (2.5), we can assume that the phonetic forms in (2.2) are derived from those in (2.4), the closest to their models, through the intermediate stage as in (2.5). Since [j] and [ʃ] are both allophones of /i/, this derivation can be regarded as a resyllabifying process of that nonsyllabic phoneme. The relationship among the three stages is illustrated with Maya as below.

(2.6) (Sp. Ma.ya → ) Eng. 'Ma.ya → 'Ma(y).ya → 'May.a
[ˈmaː.jə] /ˈmaː.ja/ /ˈmeɪ.ə/ 
[ˈməː.jə] /ˈməj.ə/ /ˈmej.ə/
What is happening here is the resyllabification of /i/ from the onset of the second syllable into the nucleus of the first, during which exists a stage where the /i/ stretches over both syllables.

Now let us think about another group of words, namely derivatives.

(2.7) law/lawyer, buoy/buoyant

_Lawyer_ derives from _law_ with an epenthetic _y_ inserted to prevent the hiatus. It has two phonetic forms as given below.

(2.8) 'law.yer, 'lawy.er ← 'law

\[ ['lɔː,jɪ] ['lɔː,i] ]^{8} \quad ['lɔː:] \]

Clearly, the first form is the original one, which has produced the second by taking the /i/ into its preceding syllable, through a hypothetical intermediate stage as shown below in ( )

(2.9) \[
('law \rightarrow 'law.yer \rightarrow ('law(\text{y}).yer) \rightarrow 'lawy.er

\[ [\text{['lɔː,jɪ]} [\text{['lɔː,i}] ] \quad [\text{['lɔː,i} ] \]
\]

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<th>/lɔː.iər/</th>
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Things are a little different about _buoyant_, which again has (at least) two variants, but whose base form, _buoy_, also does.

(2.10) 'buo.yant, 'buoy.ant ← 'buo.y, 'buoy

\[ ['bɔː,jənt] ['bɔː.ənt] \quad ['bɔː,i] [\text{['bɔː]} \]

At first sight, the first and the second forms of _buoy_ have produced each counterpart of _buoyant_, but, although only the second forms seem to be used in RP, the situation is not so straightforward in GA: ['bʊ̯ː.i] and ['bɔː.jənt] appear to be predominant there. If we intend to relate these two, the following change must be assumed.

(2.11) \[
('buo.y \rightarrow 'buo.yant \rightarrow 'buo(y).yant \rightarrow 'buoy.ant

\[ [\text{['bʊ̯ː,i]} [\text{['bʊ̯ː,jənt} [\text{['bɔː,jənt]}^{3} [\text{['bɔː.ənt]} \]
\]

| /bʊ̯ː.i/ | /bʊ̯ː,jənt/ | /bɔː.jənt/ | /bɔː.jənt/ |
Although the origin of the /i/ is not epenthesis,\footnote{21} we can see a route similar to the one in (2.9), except that an “in-between” form is attested and that the first element of the stressed vowel is changed. These two points might need some comment; let us begin with the latter.

As can be seen, /oij/ appears instead of the expected /uij/, for English normally does not allow this diphthong.\footnote{22} From a different standpoint, this situation can be regarded as neutralization between /u/ and /o/ in the environment of _/i/. This kind of neutralization is also seen in the environment _/a(r)/ in current RP, which is merging two diphthongs, increasing homophones (Wells 1982, esp. 236-37, 287-88; Gimson and Cruttenden 1994\superscript{5}, 134).

\begin{equation}
(2.12) \quad \text{RP poor} \rightarrow \text{poor} \rightarrow \text{poor} = \text{pour, pore, paw}
\end{equation}

\begin{itemize}
\item \text{sure} \rightarrow \text{sure} \rightarrow \text{sure} = \text{shore, Shaw}
\end{itemize}

\begin{equation}
[u_\text{a}(i)] \\
[u_\text{o}(r)]
\end{equation}

\begin{equation}
/o_\text{a}(r)/
\end{equation}

Note also the possibility that it is because of the difference of the degree of Anglicization that buoy is likely to be pronounced with [u:i] but buoyant, with [o:i]; prestige is pronounced à la française [piɛstiːʒ, piɛstiːdʒ], but its adjectival counterpart prestigious [piɛstiːdʒəs, piɛstiːdʒəs] would not sound so French.

One may argue, looking at the “in-between” form [ˈboɪˌænt] in (2.11), that this is not an intermediate stage between [ˈbuːˌænt] and [ˈboʊˌænt] but is derived from [ˈboɪˌænt] by way of the epenthesis of [j] just as in lawyer. He or she will, however, have to admit that such words as giant, defiant, and reliant would normally never be pronounced with a [j] epenthesized; the epentheses in lawyer, sawyer, and a few others are no doubt highly lexicalized.

\subsection*{2.2. Naive}

Next think about naive, or naive, where you find no intervocalic orthographic y, but which nevertheless has more than one pronunciation as the above examples.
Taking its French origin into consideration, the first form of (2.13) seems to have produced the second. The process is likely to be as follows.

(2.14) na.'ive \(\rightarrow\) na(y).'ive \(\rightarrow\) na(y).'ive

The trigger of this phonological process seems to have been a [j] epenthesized to break the hiatus, which is represented as "(y)" in the second form of (2.14), the left one in the brackets to show its hypotheticality. This [j] is then resyllabified through an intermediate stage, the right one in brackets, into the preceding syllable, leading to the rightmost, attested form.

Incidentally, Wells (1982, 300) makes an interesting remark: "[W]hy do I say /'ko:i:n/ for coin when everyone else says /'ko:i:n/?" He says so in the context of "personal idiosyncrasies," but, considering he records this form as a second choice in LPD eight years later, he might have found that there are some people, other than himself, who pronounce the word in this way. Anyway, this "idiosyncratic" pronunciation could be interpreted to have undergone the following processes.

(2.15) \textit{syllable split}

The first process is a syllable split, which could be justified by the fact that the final output is disyllabic; the subsequent steps are substantially the same as those of (2.14): the analysis above has made it clear that it is only in its disyllabicity that the "idiosyncrasy" of this pronunciation of Wells' lies.
2.3. **Beyond**

We will now go on to the last group of words in this chapter.

(2.16) beyond, Riyadh, Fujiyama

Each of these words has a pronunciation where the intervocalic orthographic $y$ is unpronounced.\(^2\)

(2.17) $be.\text{'}yond$, $be\text{'yond}$

\[
\begin{align*}
\text{Ri.'yadh, Ri'yadh} & \quad \leftarrow \text{Arabic Ri.yadh} \\
\{i.i.'ja:d\} & \quad \{i.i.'a:d\} \quad \{i.i.'ja:d\}
\end{align*}
\]

\[
\begin{align*}
\text{Fuji.'yama, Fuji'yama} & \quad \text{Cf. Jpn. Fuji, yama} \\
\{fu:d3i.'ja:mo\} & \quad \{fu:d3i.'a:mo\}\quad \{fu:d3i\} \quad \{ ji:mi\}
\end{align*}
\]

It is obvious, in each pair, that the form with a $[j]$ is the fundamental one: the first word consists of the prefix $be$- and the base $yond$, the latter itself and its derivative $yonder$ being, or having been, used as independent words with their $y$'s, naturally, pronounced; the Arabic original of Saudi Arabia's capital is as quoted above, and the name of the highest mountain in Japan, though such is not the way Japanese people refer to it, is composed of two Japanese words, Fuji and yama, as also given there.\(^3\) How the $[j]$ disappears is illustrated below with beyond taken as an example.

(2.18) $be.\text{'}yond \rightarrow be(y).\text{'}yond \rightarrow bey.\text{'ond}$

\[
\begin{align*}
\text{be.'yond} & \quad \text{be(y).'yond} \quad \text{bey.'ond} \\
\{bi.'ja:nd\} & \quad \{bi.'ja:nd\} \quad \{bi.'a:nd\} \\
/bi.'ja:nd/ & \quad /bi.'ja:nd/ \quad /bi.'a:nd/
\end{align*}
\]

The $/j/$, originally pronounced $[j]$, "spreads" to the preceding syllable, changing the lax vowel $[i]$ into a tense $[i]$, and disappears from its original syllable.\(^4\) The fact is not that the orthographic $y$ has come unpronounced, but that it has gone to the preceding syllable. Incidentally, the expected syllabifying dots in the forms of (2.17) with...
their \(y\) italicized had been deliberately omitted; had they not been, such notations as “beyond” would have been appropriate. Resyllabification of /i/ is seen, here again, to play a vital part in producing variation.

3. The syllabification of intervocalic /u/

In this chapter, what we have found as to intervocalic /i/ will be observed to apply to /u/ in the same context.

3.1. Kawasaki, leeward

The following are proper nouns from Japanese with an orthographic \(w\) between two vowel letters.

\[(3.1) \text{IKa.wa'saki, } \text{Kaw.a'saki} \leftarrow \text{Jpn. Ka wasaki}\]
\[\text{[i:kə.wa'sə.ki]} [\text{i:kə.wə'sə.ki}]\]

\[\text{Oki'nawa, } \text{Oki'naw.a} \leftarrow \text{Jpn. Okina.wa}\]
\[\text{[oːkə'nə.wə]} [\text{oːkə'nə.wə}]\]

\(Kawasaki\), used for a motorcycle company, for a suburb of Tokyo, or as a family name, is pronounced in its source language with the glide [\(w\)] clearly as the onset, and so is Okinawa, for the southernmost prefecture consisting of the Ryukyu Islands; therefore, it is reasonable to derive the latter phonetic form, in either case, from the former, just as we did in (2.6) with regard to Maya. Below is the derivation of \(Kawasaki\).

\[(3.2) \text{(Jpn. Ka wasaki } \rightarrow \text{Eng. Ka.wa'saki } \rightarrow \text{Ka(w).wa'saki} \rightarrow \text{Kaw.a'saki}\]
\[\text{[kɪ.wəsə.ki]} [\text{i:kə.wə'sə.ki}] [\text{i:kə.wə'sə.ki}]\]

\(/\text{i:kə.wə'sə.ki/} /\text{i:kə.wə'sə.ki/} /\text{i:kə.wə'sə.ki/}\]

The intervocalic /\(y\)/’s are resyllabified, just like /\(i\)/’s, against the onset maximality.

Next we will look at leeward, which has two kinds of pronunciation: ordinary and nautical, alias “uninteresting” and “interesting”
respectively. The ordinary pronunciation is uninteresting in that it is simply composed of *lee* and -*ward*; the "interesting" pronunciation cannot be so separated.

(3.3) \[1^{\prime}\text{lee}.\text{ward}, \text{i}^{\prime}\text{lee}\text{.ard} \leftarrow \text{i}^{\prime}\text{lee}\]
\[[\text{li:.w}d] \text{[li:.id]}\]

The basic form is, of course, that for ordinary use, the left one above, and derives from itself that for nautical use, the right one. The derivation should be as follows.

(3.4) 
\[
\begin{align*}
\text{prominence} & \quad \text{yod} \\
\text{shift} & \quad \text{dropping}
\end{align*}
\]

\[
\left[\text{li:.} \right] \left[\text{li:.w}d\right] \left[\text{li:.g}d\right] \left[\text{li:.u:.id}\right] \left[\text{li:.u:.id}\right] \\
\left[\text{li:.u:.id}\right] \left[\text{li:.u:.id}\right] \left[\text{li:.u:.id}\right] \left[\text{li:.u:.id}\right]
\]

Three pairs of brackets of the ( ) type are used above, but the forms in them, especially the last two, are not completely hypothetical. Historically speaking, what I label "prominence shift" is thought to have occurred gradually from the 16th century to the 18th century through a process like this (Nakao 1985, 290).

(3.5) \[1^{\prime}\text{i} \rightarrow \left[\text{i}^{\prime}\text{u:.id}\right] \rightarrow \left[\text{i}^{\prime}\text{u:.id}\right] \rightarrow \left[\text{i}^{\prime}\text{u:.id}\right] \rightarrow \left[\text{i}^{\prime}\text{u:.id}\right]
\]

Wells (1982, 206-07) says that the /iu/ type diphthongs are still found in certain conservative Welsh, north-of-England, and American (southern and New England) accents; *PDAE* includes this type of diphthong in such entries as this word. "Yod dropping," which Wells (1982, 206-08, 247-48) calls in this way, takes place between certain coronal consonants and [u:]. where the triggering coronals vary among dialects; [‘lju:.ad] is actually found in RP.38 We can conclude that the final output in (3.4) was generated through the resyllabification of /u/ followed by two additional phonological processes.39 This case corresponds to *lawyer* and *buoyant* in that suffixation is involved, though the motive glide [w] is originally from the suffix.
Pewit, or peewit, is a parallel to leeward, because it has two varieties of pronunciation likewise.

(3.6) 'pe(e).wit, 'pe(e)w.it
     ["pi:.wit] ["pju:.et, "pju:.it]  
Cf. 'pee.wit, 'pe(e).wee
     ["pi:.wit] ["pi:.wi:]  

Its variant peewit and a related word peewee or pewee, though all the three may not refer to the same bird, allow us to decide that the left form, having [i:] as its first vowel, is the more basic, even if we have never heard the birds' cries from which the names are supposed to have originated echoically. The difference in the degree of stress between the second syllables of the two phonological forms of pe(e)wit, and the accompanying vowel reduction in the right variant, will enforce our decision. OED² helps us to be more secure about this judgment: "The original Eng. type is prob. ("pi:'wi:t), whence by stress shift ("pi:'wi:t, "pi:wit, "pju:.it)" (under the entry for "pewit, peewit"). The derivation, then, parallels part of that of leeward.

3.2. Raul

Let us see a naive type word in this section.

(3.7) Ra.'ul, Ra(w).'ul ← Sp. Ra.úl
     [ia:.'u:l] [ia:.u:l]  
According to LPD, its Anglicized pronunciation has two variants as above, the second of which is "recommended" there.⁴³ The relationship between these two is just the same as that between the two forms of naive in (2.13), except that the supposed trigger is an epenthesized [w].⁴⁴

(3.8) (Sp. Ra.úl → Eng. Ra.'ul → Ra.'(w)ul → Ra(w).'(w)ul) → Ra(w).'ul
      [ra:.uul] [ra:.uul] [ra:.uul] [ra:.uul]  
      /raa.'uul/ /raa.'uul/ /raa.'uul/ /raa.'uul/
3.3. Luwian

The last example in this chapter is the name of an Anatolian language, which can be identified, in the sense of the resyllabification here considered, with beyond.\(^5\)

\[(3.9) \text{Luw.ian, Luwian} \quad \text{Cf. Lu.vian; German lu.visch, Lu.vier} \]

\[['lu:.wian]' ['lu:.ian] \quad ['lu:.vian]' ['lu:.visch]' ['lu:.vij]' \]

Luwian is pronounced both with and without a \([w]\), but the form with the glide can be looked upon as the more fundamental, taking into consideration its variant Luvian, with a \([v]\) in the same place, and German luvisch and Luvier, with a \([v]\) also included, from which OED\(^2\) says, under the entry for “Luvian,” the name of the language comes. The process of \([w]\) deletion works like this.

\[(3.10) \text{Lu.wian} = \text{Lu(w).wian} \rightarrow \text{Luw.ian} \]

\[['lu:.wian]' ['lu:.wian] ['lu:.ian] \quad \] /'luu.uian/ /'luu.uian/ /'luu.ian/ 

The /\(u\)/ at the onset, hence realized as a \([w]\), is resyllabified and disappears just like the \([j]\) of beyond that we saw in (2.18), the difference being that the preceding vowel here is by nature tense, with the result that the second stage in (3.10), where the /\(u\)/ seems to spread over both syllables, is identical with the input.

4. Discussion

We have seen in the previous two chapters that both of the English intervocalic glides \([j, w]\) tend to be resyllabified from the onset into the rhyme of the preceding syllable, resulting in changing themselves into the latter halves of diphthongs and long vowels; and it was also pointed out in the introductory chapter that this leftward resyllabification contravenes the widely accepted “onset maximality.”

As for resyllabification, Borowsky (1986, ch. 4) discusses the validity of stress-sensitive resyllabification, which she claims explains such alternations as below (259).\(^6\)
What she says is to the effect that the /t/ in atom is pronounced [ɹ] because the phoneme is within a foot and has been resyllabified from the onset of the unstressed second syllable to the coda of the stressed first syllable. Of the examples that I have given—readers might have been curious about why they also included stress marks—May.a, lawy.er, buoy.ant, co(y).in, Kaw.a'saki, Oki'naw.a, leew.ard, pe(e)w.it, and Luv.ian could be explained in the same way; but kay.a'ak would be a dubious case, and Toy.'ota, which was my motive for this study, na(y).i've, bey.'ond, Riy.'adh, Fujiy.'ama, and Ra(w).'ul certainly could not.

Then what accounts for the phenomena seen above? Some people might say, in seeing the above samples such as May.a and Kaw.a'saki, that they must be spelling pronunciations; but they must also be reminded that, if those pronunciations really were, the underlined parts would be sounded as [eɪ] and [ɪː] respectively, and that, more importantly, why they are so syllabified would still be unexplained; na(y).i've and Ra(w).'ul, and such intermediate cases as To(y).'ota, would also be highly problematic to them.

The crucial point seems to be the directionality of the resyllabification of /i/ and /u/, and the direction is obviously leftward. In none of our cases have we witnessed the opposite—every one of them has been a loan, a derivative, or a variant, whose character has determined which of its forms is the basic one. Even though Ma.ya ['ma:ja] becomes May.a ['maɪ.ə] and Ka.wa'saki ['ka:wa'saki] becomes Kaw.a'saki ['kɑːwə'sa:kɪ], di.amond ['daɪ.əmɑnd] would not become *[daɪ.əmænd], nor would pow.er ['pɔ:wə] become *[pɔ:wə]. The proportion of the May.a type of syllabification to the Ma.ya one is unimportant—it is likely that the former type will be more popular, the more familiar the word is; it is the direction that counts.

As for the directionality, Japanese contrasts strikingly with English. When an English word including a diphthong such as [eɪ], [aɪ], [ɔɪ],...
followed by [ə] or [i] is adopted into Japanese, an intervocalic glide is often seen in the borrowing.

(4.2) Eng. 'di.amond → Jpn. dai.yamondo
      [ˈdaɪ.əmənd]     [dai.ʃi.mʊndo]

Eng. 'pow.er → Jpn. pa.wà
      [ˈpəʊ.ə]        [pi.ʊi]  

The following are their likely processes.

(4.3) (Eng. 'di.amond → Jpn. dai.amondo) → dai.yamondo
      [ˈdaɪ.əmənd]     [dai.ʃi.mʊndo]     [dai.ʃi.jʊmʊndo]
      /dai.əmʊndo/   /dai.ʃi.jʊmʊndo/

(4.4) (Eng. 'pow.er → Jpn. pau.à) → pau.wà → pa.wà
      [ˈpəʊ.ə]        [ˈpəʊ.ə]        [pi.ʊi]  
      /pəʊ.ə/        /pəʊ.ə/        /pi.ʊi/

Compare these derivations with those of *naive* and *Raul*.

(4.5) (= (2.14)) na.ˈive → na.ˈ(y)ive → na(y).ˈive → na(y).ˈive
      [naː.ˈiːv]     [naː.ˈyiːv]     [naː(ˈyiːv)]     [naː(ˈyiːv)]
      /naː.ˈiːv/    /naː.ˈyiːv/    /naː(ˈyiːv/)    /naː(ˈyiːv/)

(4.6) (= (3.8)) Sp. Ra.ˈul → Eng. Ra.ˈul → Ra.ˈ(w)ul → Ra(w).ˈ(w)ul → Ra(w).ˈul
      [ɾa.ˈuɫ]     [ɾa.ˈuɫ]     [ɾa.ˈuɫ]     [ɾa.ˈuɫ]
      /ɾa.ˈuɫ/    /ɾa.ˈuɫ/    /ɾa.ˈuɫ/    /ɾa.ˈuɫ/

In the borrowings in Japanese, the /i/ and /u/, the second elements of diphthongs in the source language, are resyllabified rightward into the onset glides of the following syllables, whereas, in those in English, the glides at onsets are resyllabified leftward into the second elements of diphthongs of the preceding syllables. Evidently related to this is the fact that the nature of glides epenthesized to avoid hiatuses is itself completely opposite between the two languages: they are homorganic.
with their preceding, heterosyllabic vocal elements in Japanese, but with their following, tautosyllabic ones in English—remember I pointed out, in the context of the “in-between” form [ˈboʊ.jənt] in (2.11), that words such as giant, defiant, and reliant would normally never be pronounced with a [j] epenthesized.

Now, to what differences between the two languages is this ascribed? One big difference between them lies in the syllable types which they often utilize: open syllables in Japanese and closed syllables in English;81 but this difference seems to have little to do with the matter. According to Waseda (1994, 12), in Hungarian, a glide [j] can be inserted between an [i] and the following back vowels.62

(4.7) Hung. diák ‘student’, fiu ‘boy’, tokiói ‘of Tokyo’

[ʼdi.ja:k]  [ʼfi.ju]  [ʼto:ki.jo:i]

These instances appear to show that Hungarian is of the Japanese type, but this language is clearly categorized as a closed-syllable type.

What we could safely say for the present is that languages would have their own inherent directionalities as to the “spreading” of high vowels—by “spreading” I mean that autosegmental spreading: leftward in English, and rightward in Japanese and Hungarian. The representations below will make the point clear.63

(4.8) naïve

\[
\begin{align*}
\text{na} & \text{'ive} \\
[\text{n} & \text{a}!i : v] & \rightarrow & [\text{n} & \text{a}!j i : v] & \rightarrow & [\text{n} & \text{a}!j i : v] & \rightarrow & [\text{n} & \text{a}!i : v] \\
O & N n.0 & N & n C & \rightarrow & O & N n.0 & N & n C & \rightarrow & O & N n.0 & N & n C \\
/\text{n} & \text{a} & i & v/ & \rightarrow & /\text{n} & \text{a} & i & v/ & \rightarrow & /\text{n} & \text{a} & i & v/ & \rightarrow & /\text{n} & \text{a} & i & v/
\end{align*}
\]

(4.9) Jpn.

\[
\begin{align*}
da.i.ama\text{ndo} & \rightarrow & da.i.yamo\text{ndo} \\
[\text{d} & \text{i} & \text{i}. & \text{i}. & \text{m} & \text{o} & \text{n} & \text{d} & \text{ō}] & \rightarrow & [\text{d} & \text{i} & \text{i}. & \text{i}. & \text{m} & \text{o} & \text{n} & \text{d} & \text{ō}] \\
O & N & n.0 & N & O & N & n.0 & N & \rightarrow & O & N & n.0 & N & n.0 & N & \rightarrow & O & n.0 & \text{O} & N & n.0 & N & \rightarrow & O & n.0 & \text{O} & N & n.0 & N \\
/\text{d} & \text{e} & i & s & m & o & n & d & o/ & \rightarrow & /\text{d} & \text{e} & i & s & m & o & n & d & o/ \\
\end{align*}
\]
Note, however, that this directionality alone does not account for the whole issue, for it is still to be explained why English na(y)i ve finally loses the [j] at its onset, this being shown in (4.8) as the dissociation of the line in the rightmost representation, and becomes na(y)i ve.

It seems that languages also vary as to how much they require onsets, albeit it is generally believed that onsetless syllables are marked and, therefore, the "onset maximality" principle is usually employed in syllabification. In English, this demand is relatively weak at least for glides, and onset glides are sometimes lost if they are also associated with the preceding slot as a result of their leftward spreading, which looks as if they had been syllabified against the onset principle. Syllables which have a coda are said, besides onsetless syllables, to be universally marked, but the new syllables thus generated are no more marked than the old ones, since the /j/ of 'May.a /'mai.a/, for example, is not at the coda but in the nucleus (cf. Yamamoto 1997, 254-55). Notice also that only this concept of the degree of onset demand does not suffice again: without the notion of the leftward directionality of spreading, it would be inexplicable why 'Ma.ya ['ma:.ja] becomes 'May.(y)a ['ma1.jə] despite the fact that both have an onset in their second syllable, and why epenthesized glides are homorganic with their following, tautosyllabic vocal elements. The leftward directionality of the spreading of high vowels and the relatively weak requirement of onsets are both traits of the English language.

Last but not least, I dare to mention, in answer to a possible question as to whether the two characteristics of English are synchronic or diachronic, or a possible suspicion that synchronic and diachronic issues have been confused, that a diachronic process is obtained, as it were, as the integral of a synchronic one, and a synchronic process, as
the differential of a diachronic one, just as velocity is obtained as the integral of acceleration, and acceleration, as the differential of velocity. If it were not for the synchronic process of the resyllabification of glides, neither would the same process be seen diachronically: zeros, however many times added up, make zero.

5. Conclusion—Why Toy.ota?

With Toy.ota as our starting point, we have looked at and discussed various cases where intervocalic glides in English tend to be resyllabified, against the widely accepted “onset maximality,” from the onset into the rhyme of the preceding syllable. We can now conclude that what has produced this pronunciation of Toy.ota are the two phonological characteristics of English, namely its leftward directionality of the spreading of high vowels and its relatively weak requirement of onsets.

It has also been mentioned that Japanese and Hungarian exhibit a striking contrast with English in glide insertion, which implies that the former two have a rightward directionality in the spreading and a stronger requirement of onsets than the latter one. Further research will be needed by all means to clarify whether the two phonological tendencies are mutually related and how the matters are in other languages.
Notes

1 This paper is based, and is an advance, upon sections 2.2, 2.3, and 2.5 of my unpublished MA thesis (Yamamoto 1996a); Yamamoto (1996b) could be read as a Japanese summary of those sections.

2 Syllable breaks are indicated only where relevant.

3 Unless otherwise indicated, phonetic forms of English words are those of what is, or was, called General American (henceforth, GA), quoted from the references below. When Received Pronunciation (henceforth, RP) forms are cited, they are so labeled. GA “is a term that has been applied to the two-thirds of the American population who do not have a recognizably local accent . . .” (Wells 1982, 118); RP “is generally taken as a standard throughout southern Britain (i.e. in England and perhaps Wales, but not in Scotland)” (Wells 1982, 117). All phonetic forms, except those in direct quotations, are normalized in the IPA.

References for GA only:

References for RP only:

References for both:

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English (= Lewis 1972);

EPD¹⁵ = English Pronouncing Dictionary, 15th ed. (eds. Peter Roach and James Hartman) (= Jones 1997¹⁵);

LDCE² = Longman Dictionary of Contemporary English, 2nd ed. (1987²)
(prounciation ed. Dinah Jackson, pronunciation adviser J. C. Wells);

LDCE³ = Longman Dictionary of Contemporary English, 3rd ed. (1995³);
(prounciation ed. Dinah Jackson);


In syllable rhymes, they are realized as independent short vowels or the first or second elements of diphthongs; furthermore, the long vowels [iː] and [uː] are interpreted as /ii/ and /uu/ respectively.

Consonants are narrowly transcribed here only.

All the references except NDAEP, which does not include this entry, record this type of pronunciation (minor differences ignored; hereafter also) as the only or the first choice.

In WNCD⁹,¹⁰ (as their sole choice), WNID³ (as one of the main pronunciations), OED² (as an alternative pronunciation), EPD¹⁵ (as the main pronunciation for RP and an alternative for GA), and LPD (as the main pronunciation).

In WNCD¹⁶ (sole, but as the name of a city), EPD¹⁵ (main for RP, alternative for GA), and LPD (sole).

⁹ From DAW² (= Mangold 1974²).

¹⁰ The same as the onset maximality introduced in chapter 1.

¹¹ Letters within [] are nonexistent in the spelling.

¹² In PDAE (sole), WNID³ (labeled “sometimes,” whose meaning is, according to the “Explanatory Notes,” “infrequent” (p. 14a)), OED² (main), EPD¹⁵ (main for GA), and LPD (alternative).

¹³ EPD¹⁴,¹⁵’s alternative pronunciation for RP. GA’s counterpart would be [ts:.ˈʃoːɾə], but is not attested in the dictionaries used; [toʊ.ˈʃoːɾə] might be possible.

¹⁴ In WNID³ (labeled “also,” whose meaning is, according to the “Explanatory Notes,” “appreciably less frequent [than the main pronunciation(s)]” (p. 14a)).

¹⁵ In WNID³ (one of the main pronunciations) and OED² (alternative). See n58 below for its further variation.

¹⁶ In EPD¹⁴ (main) and EPD¹⁵ (main for GA).
The form of kayak to be included in (2.4) is 'ka·ya·k [ˈkaː.je.k], but unattested. As for Toyota, see n13. For vowels in loans in general, see Lindsey (1990).

All the references except two record the [ɔ: .j] type of pronunciation as the only or the first choice for either dialect, the exceptions being CIDE and EPD\textsuperscript{15}: the former gives the [ɔ1] and [ɔ: .j] types as the sole pronunciation for RP and GA respectively, and the latter adds, to each dialectal form that is the same as EPD\textsuperscript{15}'s, the other variant as a second form. NDAEP (which always gives a single form, according to the 'Notes on the Dictionary' (p. ix)), PDAE, WNCD\textsuperscript{10}, and LDCE\textsuperscript{2,3} do not record the [ɔ1] type. The rest, namely WNID\textsuperscript{3}, WNCD\textsuperscript{9}, EPD\textsuperscript{4,13,14}, OED\textsuperscript{2}, CPDBAE, and LPD include it with a subordinate status given.

For RP, the references record only the [ɔ1] form for both words. As for GA, WNCD\textsuperscript{9,10}, LDCE\textsuperscript{2,3}, and LPD adopt both forms for both words, showing the predominance mentioned in the text; WNID\textsuperscript{3}, including other variants in addition (see nn20, 22), is along the same line and says that [ˈbʊə] is usual in the sense of 'life buoy'; NDAEP selects a single form for each word in agreement with this predominance, and so does CIDE; PDAE, CPDBAE, and EPD\textsuperscript{15} include both forms for both words, but giving predominance to the [ɔ1] form in either case. OED\textsuperscript{2}, giving [ˈbʊə] and [ˈbʊəɹ] as a variant of buoy and buoyant respectively, says, under the entry for "buoy, sb.": "The pronunciation (bʊə) . . . is recognized by all orthoepists British and American; but (bʊə) is universal among sailors, and now prevalent in England. . . . Some orthoepists give (bʊə)."

In WNID\textsuperscript{3} (as an alternative).

The underlying representation for 'buo.\textsuperscript{y} [ˈbuː.i] seems to be monosyllabic [ˈbuui] with an /i/ at the coda. See Yamamoto (1997, 255) for the syllable structure of each form of buoy and buoyant.

WNID\textsuperscript{3}'s second choice for buoy is "\b\u1b\u1i\", which should be interpreted as [ˈbʊə], but does not register "\u1b\u1i\" as a diphthong in the "Guide to Pronunciation" (pp. 31a-44a); the dictionary seems to consider this sequence a variant of [uː.i] (under the heading of "\u1b\ [uː] plus unstressed vowel" (p. 44a) in the "Guide to Pronunciation"). See also LPD's note on "compression" (152-53).
The references solely for GA record the [æː] form only, with an exception of WNID, which also records the other form as an alternative. Those solely for RP record both, but with their judgments about the predominance varying: OED gives precedence to the [æː] form of this word, but things are complicated about EPDs. EPD gives to "naïve" not merely the [ɛɪ] and [æː] forms, with the first as the main pronunciation, but also ['næɪ.v] and ['neɪ.v] as variants. Besides, there is another entry, "naive," with only ['neɪv] given. EPD records only [naː.iːv] and [naɪ.ɪːv] for "naïve," with the first as the main form, and nothing is changed for "naive." EPD records, for "naïve," the same things as in the previous edition, but with the frequency judgment reversed. There is no entry of "naïve." Concerning the references dealing with both dialects, CPDBAE and LPD include both the [ɛɪ] and [æː] forms of this word, giving predominance to the former; LDCE has the [ɛɪ] and [æː] forms as those for RP and GA respectively, but CIDR and LDCE have only the former; EPD records both variants for both dialects, but giving priority as the RP and GA forms to the [ɛɪ] and [æː] types respectively. Note also OED's following remark, more exactly, that of its original, A New English Dictionary on Historical Principles, cited in OED under the entry for "naïve (naive)": "'The word being only imperfectly naturalized, the pronunciation is somewhat unsettled: the chief variations given in the leading Dicts. are (naː.iːv), (ˈnaː.iːv), and (neɪ.ɪːv)' (N.E.D., 1906)."

It was mentioned in the preceding section that the [j] in buoyant [ˈbɔɪ.jənt] could not be epenthetic and that such words as giant, defiant, and reliant would normally never be pronounced with a [j] epenthesized, but it will be made clear in chapter 4 that this does not contradict what is stated here about naive.

However, no other dictionaries used record this variety.

In (2.15), the stressed vowel of the form immediately after the syllable split, namely ˈco.in, is assumed to be [oː] phonemicized as /oʊ/, whose GA counterpart is [ɔː]; but it would also be possible that it is [ɔ], which could be phonemicized as /ou/ in the same manner as its GA counterpart [ɔ] is. Even if thus modified, (2.15) still holds true save that the third stage must be altered likewise.

Y's in italic type show that they are not sounded.
and CIDE record the [j] form only, and OED\(^2\), CPDBAE, and LDCE\(^2,3\), the non-[j] form only. NDAEP, also, records only the [j] form, but see n33 below. PDAE and EPD\(^4,13,14\) adopt both forms, with preference given to the [j] variant, and so does WNID\(^3\), labeling [j] forms (again, see n33) as "also." The other two, EPD\(^1,5\) and LPD, disagree with each other: the non-[j] type is provided by them with the exclusive position for RP and GA respectively; the former reference accepts both types as GA pronunciations, while the latter, as RP, giving preference to the glide form.

This word is included in WNID\(^3\), WNCD\(^9,10\), EPD\(^1,5\), and LPD. As for GA, WNCD\(^1,0\), EPD\(^1,5\), and LPD record only the [j] form, and WNID\(^3\) and WNCD\(^9\) indicate the possibility of the omission of the glide. As for RP, both EPD\(^1,5\) and LPD select [iːiː.æd] as the main pronunciation, but they give as alternatives [iːiː.aːd, iːiː.ɪːaːd] and [iːɪ.jaːd, iːɪ.ɪjæd] respectively.

From LPD.

This word is included in PDAE, WNCD\(^9,10\), and EPD\(^1,5\), of which WNCD\(^9\) alone indicates that the [j] can be omitted.

The mountain is called Fujisan [fuːdiʃiːi] in Japanese. Yama is a native Japanese word for 'mountain,' and san is a Sino-Japanese morpheme with the same meaning.

NDAEP's sole selection is actually this form, and it is, in addition, an "also"-labeled alternative of WNID\(^3\)'s, together with, and placed ahead of, [biː.ɪjənds] or [baː.ɪjənds]. It is true that, in the notations of these two dictionaries, [i] is not distinguished from [iː], and, therefore, there may be a possibility that the form they give is not the intermediate stage [biː.ɪjənds], but [biː.ɪjənds] with its prefix pronounced rather independently; however, in such words as bewilder and behind, NDAEP provides the prefix with [biː-], and WNID\(^3\), though recording [biː(ː)ː] as well as [biː-] or [baː-], puts the [biː(ː)-] form in the second place in spite of the fact that the order is reversed in beyond—beyond is definitely "special." Taking the above into consideration, we can conclude that this form is indeed in the course of the phonological process as in (2.18). Incidentally, LPD records [biː-] under all of the above-mentioned words with the prefix, but only as their non-RP forms of British English.
Thus, the resultant *bey.'ond* [bi.'a:nd] is justifiably phonemicized as /biˈəːnd/ as in (2.18); if this phonological process were not taken into consideration, its phonemicization might as well be /biˈəːnd/, for a vowel, even if lax, will be tensed immediately before another.

This word is included in *WNCD*², *EPD*¹⁵, and *LPD*. *WNCD*² record only the [aː.w] type. So does *EPD*¹⁵, as far as GA is concerned, but, as for RP, it treats this type of pronunciation as a second form, giving priority to the diphthong type. *LPD* gives the diphthong and [aː.w] types as the main and subordinate pronunciations respectively regardless of dialectal difference.

This word is included in *WNCD*², *EPD*³, *LPD*, and its adjectival form *Okinawan*, in *WNID*³ and *OED*². As for RP, the references, namely *OED*², *EPD*³, and *LPD*, record only the [aː.w] type. As for GA, the references, namely *WNCD*², *WNID*³, and *LPD*, record both sorts, with precedence given to the [aː.w] type. The only exception being *EPD*¹⁵, where the diphthong type is not comprised at all.

The references generally record both types of pronunciation, placing after the [iː.w] type the [uː] type labeled as technical (by *LDCE*²), as usually nautical (by *WNID*³), or as nautical (by many others), or without such a label (*EPD*⁴, *OED*², *LDCE*³). The exceptions are *CIDE*, in which only the [iː.w] type is given, and *NDAEP*, in which this word itself is not included. Also see n38 below.

The [uː] type of alternative pronunciation that *OED*² gives is actually this form, which is also recorded by *EPD*³, *OED*², *LDCE*³ and *LPD* as an alternative.

I do not claim that (3.4) is a synchronic process. See the last paragraph of chapter 4.

This word is included in all of the references but *NDAEP* and *CIDE*; the situation is, however, a little complex. The American dictionaries, namely *PDAE*, *WNCD*², and *WNID*³, record both types of pronunciation, placing the [iː.w] type first; *PDAE* adds the /iu/ type as it does under *leeward*. As regards its spelling, *WNCD*² and *WNID*³ give "pewit" and "peewit" with preference shown to the former, and *PDAE* gives only this form. Of the British dictionaries, *EPD*³, *CPDBAE*, and *LDCE*² record only the [iː.w] type of pronunciation. under
the entries of "pewit" and "peewit," and so does LDCE. Except that it has no entry of "pewit." OED adopts the phonetic and orthographic forms in the same manner as WNCD and WNID. The other references, namely EPD and LPD, interestingly agree that, although they give the [iːw] type of pronunciation as the sole RP and main GA forms of this word, they record the [juː] type as a GA alternative only under "pewit," but not under "peewit." This discrepancy may be due to spelling pronunciation, or it may be that "peewit" is a spelling used exclusively for the [iːw] type of pronunciation.

The entry "peevit" is recorded by WNID as a variant of "pewit." WNCD and WNID record "peewee" and "pewee"; PDAE, "pewee" only; EPD and LPD, "peewee" only. CIDE gives "peewee," not for a bird, but as an informal American word for "someone or something very small." OED adopts as headwords "peewee," or "pee-wee," and "pewee," the last of which is labeled "U.S. and Canada." No other references used include such entries.

No other references include this name. LPD's main pronunciations are, according to "A Quick Guide to the Dictionary," those "recommended as models for learners of English" (p. viii).

See n24 above.

A w in italic type shows that it is not sounded.

This word is included in WNCD, WNID, and OED. WNID records only the [w] form, WNCD indicates the possibility of the omission of the glide, and WNCD gives the non-[w] form only. OED records "Luwian" and "Luian" as variants of "Luvian," but gives the variants no pronunciations.

This is a headword in OED and a variant of "Luwian" in WNID. The latter dictionary gives "Luian" [ˈluː.ən] as another variant.

From DAW.

Clearly, she deals with such dialects as GA.

More exactly, [tʰ].

Although Borowsky does not mention it, ve[h]icle also actually exists (see the references), which might be interpreted as 've.[h]icle, with the [h] at the onset of a secondarily stressed
syllable.

52 More exactly, [tʰ].

53 'Constitutive is another form (see the references).

54 Likewise, the /h/ becomes silent in (b). As respects (c), the /i/ 's made unpronounced by the yod dropping mentioned in section 3.1 revive thanks to the resyllabification of the preceding coronal consonants. In the cases of (d), heterosyllabic sequences /t.i/ and /d.i/ produced in the same way as in (c) have changed further into [tʃ] and [dʒ] respectively.

55 The second syllable of this word is usually not completely unstressed, which is known by its full, not reduced, vowel (OBD being the only exception) whether the secondary stress mark is shown, as in the American dictionaries, or not, as in the British ones. This will indicate that the word contains two feet, with the consequence that Borowsky's condition would not be met.

56 Remember that Kreidler, as quoted in section 2.1, writes "[e]ven before a stressed vowel."

57 The variants with their first syllables primarily stressed which were mentioned in n29 are classified as "dubious" cases like 'kayˌak (see n55 above).

58 In fact, WNID records ['meɪˌ(j)a] as a "sometimes"-labeled variant of Maya; ['meɪˌə] can be regarded as a spelling pronunciation with the underlined part of 'Mayˌa sounded literally with the diphthong [eɪ], and ['meɪˌjə], as one with the underlined part of 'Maˌya sounded in the same manner—the difference being, here again, that of syllabification. OED, also, records ['meɪˌə] as the last alternative, but not ['meɪˌjə], in spite of the fact that it gives ['maɪˌ(j)ə], or, to put it differently, it accepts both glide and non-glide forms for the [aɪ] type of pronunciation—which would imply that the [aɪ] type is generated in a different way, as represented in (2.6), from the [eɪ] type based on its spelling; as a spelling pronunciation, Maya might be more naturally sounded as ['meɪˌə] than as ['meɪˌjə]. The variants ['neɪˌɪv] and ['neɪv] that BPD record for "naïve" and "naive" (see n23 above) are clearly owing to their spellings.

59 The acute accent in the phonemic representation of Japanese shows the location of the "accent nucleus."

60 The ways the two glides behave appear different: the process of (4.4) is seen to go one step further than that of (4.3); there seems to
be, in Japanese, a difference of status as a diphthong between /yi/ and /yu/—
/yu/ seems to be more independent than /yi/.

61 In Japanese, closed syllables are restricted to two cases: the
closing consonant is a nasal, or the first part of intervocalic geminates.

62 The last example in (4.7) is not from the work, but from Waseda
(1989, 27). This language has no other glides.

63 The last row of each representation is that of “melodies,”
associated with subsyllabic constituents in the third row—“O” for the
onset, “N” and “n” for the first and second morae of the nucleus, and “C”
for the coda, with syllable breaks also added—which are, for convenience,
then connected by broken lines with the segments in the second row. The
long vowel [aː], which has been phonemicized as /aː/, is represented in (4.8)
as bimoraic /aː/; it seems to be, however, of no significance.

64 I express my thanks to Mr. Kensuke Nanjo (Konan University) for
pointing out the markedness-related matter to me.

65 However, it is not yet clear whether the two traits are correlated
or not.
Works Cited


CPDBAE. = Lewis 1972.

DAW². = Mangold 1974².

EPD⁴. = Jones 1937⁴.

— ¹³. = Jones 1967¹³.


— ¹⁵. = Jones 1997¹⁵.


LPD. = Wells 1990.


NDABP. = Silverstein 1994.


PDAE. = Kenyon and Knott 1953.


(山本 武史、京都大学大学院博士後期課程)

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On the Syllabification of English Intervocalic Glides

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Summary

In this paper, we discuss such phonological processes as follows, which seem to be caused by the resyllabification of intervocalic glides:

(1) a. 'Ma.ya → 'May.a; 'law.yer → 'lawy.er; 'buo.yant → 'buoy.ant
   b. 'Kaw.a'saki → 'Kaw.a'saki; 'lee.ward → 'leew.ard
      ['ka:.wa'sa:ki] ['kəw.a'sa:ki] ['li:.wəd] ['lu:.i:d]

(2) a. na.'ive → na(y).'ive b. Ra.'ul → Ra(w).'ul
   [na:.'i:v] [na1.'i:v] [rə:'ul] [rəz.'u:l]

(3) a. be.'yond → be'yond b. 'Lu.wian → 'Luwian
   [bə.'ja:nd] [bi.'a:nd] ['lu:.wiən] ['lu:.iən]

The intervocalic glide, in each case, is resyllabified from the onset into the rhyme of the preceding syllable, against the widely accepted “onset maximality.”

What constitutes this resyllabification, it is concluded, are the two phonological characteristics of English, namely its leftward directionality of the spreading of high vowels and its relatively weak requirement of onsets.

It is also mentioned that Japanese and Hungarian exhibit a striking contrast with English in glide insertion, which implies that the former two have a rightward directionality in the spreading and a stronger requirement of onsets than the latter one.