

More Arguments against Japanese as a Mora Language

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1. Introduction

This paper examines the recent debate on the status of Japanese syllables. Ever since McCawley's (1968) seminal work, it has been assumed that Japanese is a "mora-counting syllable language," which means that, even though mora-counting is necessary to account for the patterns of Japanese prosody such as accentuation, the "core" of the prosodic peak must be placed on a syllable, not on a mora. As a supporting argument for the claim, the fact is often cited that the accentuation of regularly accented words, foreign borrowings for example, necessarily counts the number of moras from the edge of the word, but the actual accentuation site must be a syllable, because peripheral moras of a long syllable, such as a moraic nasal and a moraic obstruent, never receive an accent.

However, Labrune (2012) gives a counterargument to this well-cited theoretical claim. According to Labrune, it is not a syllable but the "full status of mora" that matters in accentuation. Moraic nasal and obstruent never receive an accent because the moras composed by them are not full, while the accentable CV mora is. This paper will point out that the hierarchy on the "full" status of moras that Labrune (2012) proposes in place of the notion syllable does not stand as is if we observe Tokyo Japanese data more carefully, and that, other things being equal, the purely mora-based account of Tokyo Japanese phonology is not superior to the syllable-based ones.

2. Labrune's (2012) Argument for Japanese as a Mora Language

In her thought-provoking paper, Labrune (2012) argues that the so-called phonological evidence for the syllable in Tokyo Japanese can be reanalyzed in terms of moras if we adopt her theory of the hierarchy of moras, and, given the lack of phonetic and psychological evidence for the notion syllable in Tokyo Japanese, she concludes that there is no such thing as a syllable in Tokyo Japanese. In place of syllables, which are often considered to be an accent-bearing unit as opposed to mora as a tone-bearing unit (Poser (1990), Haraguchi (1999) among others), Labrune proposes that there is a hierarchy of moras in Tokyo Japanese as follows:

(1) (Full) CV > •V > C • (Deficient) (Labrune's (2012) (19))

In (1), CV stands for a regular consonant-vowel mora such as *ra*, *mi*, *su*, *ko*, *ne*, and so on. It is true that the CV mora is the most prevalent in Japanese or, actually, in any language. •V stands for the second mora of a diphthong and a long vowel. They cannot receive an accent when it is immediately preceded by a full mora.

(2) a. •V preceded by a full mora
ko.i.n "coin"¹
HLL

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¹ Accent, in Japanese, is marked with a H(igh) tone, followed immediately by a L(ow) tone. Even though there are several theoretical discrepancies on the way to represent it, the basic point remains the same as far as the author recognizes.

*ko.i.n

LHL

- b. •V not preceded by a full mora

e.n.do “end”

HL L

C • stands for a consonantal mora, and it never receives an accent in Tokyo Japanese.

- (3) a. pa.n.da “panda”

HL L

- b. *pa.n.da

LH L

- (4) a. ha.t.to “hat”²

HL L

- b. *ha.t.to

LHL

Labrune claims that the fuller the mora is, the more probable it is that it has a special status such as being an accent- (tone-)bearing unit, accounting for the pseudo-syllable-based nature of Tokyo Japanese accentuation with discrepancies between accent-bearing units and tone-bearing units. According to Labrune, if the pattern of accentuation among others can be accounted for in terms of the status of moras, we do not need reference to the notion syllable.

3. Kawahara’s (2016) Reply to Labrune

As a reply to Labrune (2012), Kawahara (2016) points out that there indeed are pieces of evidence that a syllable is a meaningful unit in Tokyo Japanese phonology. For example, Kawahara, citing Vance (2008), points out that vowel nasalization in Tokyo Japanese distinguishes between the coda and onset status.

- (5) Vowels are nasalized before a tautosyllabic nasal

a. [hõ.n] “book”

b. [hõ.n.da] “Honda”

c. [hõ.m.ma] “Homma” (personal name)

- (6) Vowels are not nasalized before an onset nasal

a. [ho.ne] “bone”

b. [ko.me] “rice”

(Kawahara (2016), (1-2))

The coda nasal triggers nasalization, whereas the onset nasal does not. Note that, because Labrune does not have a notion syllable in her analysis of Japanese phonology, the nasal consonants in question are identical in their phonological status. For the immediately preceding vowel, nasal in (5) and (6) are all nasals (C) that begin the following mora. Let’s say that they are indeed distinguishable in that nasals in (5) are a part of a defective mora while those in (6) belong to a full mora. However, Labrune’s basic argument is that, the fuller a mora is, the more likely it is to be active in phonology. In (5) and (6), it is the defective mora that triggers the phenomenon.³ With the notion syllable, the description is much more straightforward. Nasalization is triggered inside a syllable, not across syllables.

² In fact, it is quite doubtful that the moraic obstruent even receives a tone. Thus, the tonal mark here is only conventional.

³ We could say that a defective mora has a weaker boundary than a full one, but it is the same as saying that there is a notion syllable bounded by strong boundaries.

Kawahara cites many other pieces of psycholinguistic evidence for syllables, which is beyond the scope of this paper as the purpose of this paper is to introduce more phonological pieces of evidence.

4. Another Reply to Labrune: The Hierarchy of Moras May Not Stand as Is

In addition to Kawahara's argument, this paper adds some facts that show Labrune's hierarchy of moras does not necessarily work properly.

4.1. Initial Lowering

Labrune points out that the characteristics of syllables do not behave uniformly concerning the phenomenon called Initial Lowering (McCawley (1968)). In Tokyo Japanese, unless a word is accented on the initial mora, the initial mora bears a low tone. However, it is said that if the initial mora is the initial mora of a long syllable with a long vowel, diphthong, or moraic nasal /N/, there will be no lowering.⁴ Interestingly, if the initial syllable ends with a moraic non-nasal consonant /Q/, there will be initial lowering.

- (7) a. Yo.ko.ha.ma (LHHH) "Yokohama" (a place name)
 b. To.o.kyo.o (HHHH) "Tokyo"
 c. Sa.n.ri.ku (HHHH) "Sanriku" (a place name)
 d. Sa.p.po.ro (L?HH) "Sapporo" (a place name)⁵

Simply put, Labrune claims that the distinction between (7bc) and (7d) will cause a problem for the syllable based theory because they all begin with a heavy syllable and there is no particular reason why they differ in relation to Initial Lowering.

However, the mora-based account also faces a similar problem. First, if the fullness of a mora triggers Initial Lowering, why does it care about the second syllable, not the first one? Initial Lowering is a phenomenon on the initial mora of a word, whether it will turn out to be phonological or phonetic in nature. The initial moras in words in (7) are all "full", and if we are talking about the "Initial" Lowering, we should expect there would be no difference in probability. Suppose we accept that the second mora triggers it, then we are faced with a problem of the reason why the status of the second mora affects the tonal property of the initial mora. In a syllable-based account, we have a straightforward account: Initial Lowering is nullified/loosened in the word-initial syllable with a sonorant second mora.⁶

Secondly, the mora-based account given by Labrune (2012) is empirically contradictory. In a mora-based account, the only imaginable analysis will be that the more deficient a mora will be, the less likely it will trigger Initial Lowering on the preceding mora. However, this potential analysis falls short of an account for (7d) with the most deficient mora, with Initial Lowering. Why do only moras with intermediate deficiency nullify the Initial Lowering effect? The theory by itself does not give us any satisfactory explanation.

Moreover, the following words, with the second mora/syllable being onsetless, appear to be distinguished.

⁴ Although this "rule" of initial lowering will most probably be a matter of phonetic realization of a phonological representation, and, as Pierrehumbert and Beckman (1988) point out, there is an initial lowering in words like (7b,c) to some extent, the author believes that the degree of lowering (more explicitly with CVCV-initial word) will stand as is.

⁵ For this example, the tonal mark on the moraic obstruent (marked with "?") is avoided.

⁶ Note that the syllable-based account of Japanese phonology does not deny the existence of moras. They co-exist as prosodic units of language.

- (8) a. A.o.shi.ma (LHHH) “Aoshima (a place name)”⁷
 b. A.i.o.i (HHHH) “Aioi (a place name)”

With *Aoshima* all native speakers of Japanese agree that Initial Lowering occurs, but with *Aioi*, it is not the case. In Labrune’s theory of mora hierarchy, the second mora is a V mora in both examples, and we find no reason to distinguish between them as they are defective to the same degree.

With the notion syllable, the pattern here is straightforward again. *Aoshima* contains four moras and four syllables, while *Aioi* has four moras but three syllables.

- (9) a. <a><o><ji><ma>
 b. <ai><o><i>

(9a) triggers Initial Lowering as other words do, with two initial moras being in separate syllables.

Labrune (2012) actually recognizes the difference between /i/ and /o/ moras in terms of deficiency. The detailed hierarchy of moras, as suggested by Labrune, places *o* above *i* ($\bullet a > \bullet o, \bullet e > \bullet i, \bullet u$ (cited from Labrune (2012), (20)), and it may do the job. Because /i/ is more defective than /o/ it fails to trigger Initial Lowering.⁸

However, onsetless /i/ is not always diphthongal, contra Labrune’s expectation.

- (10) a. [<ko><i><ta><ro.o>] “Koitaro” (a person’s name)
 L H L L L
 b. [<o><i><ru>] “get older”
 L H L

If it is diphthongal, then it should behave in the same way as the following, without Initial Lowering:

- (11) [<ke.i><ta><roo>] “Keitaro” (a person’s name)
 HH H HH

Keitaroo is unaccented and without Initial Lowering. According to Kubozono (1999), *-taroo*, a suffix for Japanese first names, creates an unaccented first name after a stem with one syllable (short, diphthongal, long vowel, or nasal)⁹; otherwise, words with *-taroo* are accented.

- (12) Unaccented Words with *-taroo*
 a. <ko.o><ta><ro.o> “Kohtaro” (a person’s name)
 HH H HH
 b. <ke.i><ta><ro.o> “Keitaro”
 HH H H
 c. <ka.n><ta><ro.o> “Kantaro” (a person’s name)
 HH H HH
 d. <ko><ta><ro.o> “Kotaro” (a person’s name)
 L H HH

- (13) Accented Words with *-taroo*
 a. <mo><mo><ta><ro.o> “Momotaro” (a person’s name)
 L H L L L

⁷ The basis of this judgment is mostly intuitionistic as noted above, but the distinction between (8a) and (8b) is clear enough, as the previous literature based on intuition tells us. There is no phonemic glottal stop in Japanese, and the insertion of a glottal stop before [o], making the mora CV, is unacceptable unless you are spelling out the kana syllabary of the word intentionally.

⁸ Note that even this account is not immune to the conceptual problem of the second mora affecting the initial mora’s tonal status.

⁹ Roughly speaking, a word is unaccented in Tokyo Japanese if there is no HL tonal sequence in it.

- b. <yo><ji><ta><ro.o> “Yoshitaro” (a person’s name)
 L H L LL

The pattern here can most easily be explained in terms of syllables. Monosyllabic stems derive unaccented words, while longer words derive accented words. *Koitaroo* and words like *Kaitaroo* and *Toitaroo* (all person’s names) are the only exceptions. The most straightforward analysis would be that the second mora <i> in these words are in a separate syllable from the first.

The same applies to (10b), *oiru* “get older”, in which the second “deficient” mora is accented. Note that words in (10) with an accent on the second mora <i> contrast with (14), in which it is the first mora that is accented:

- (14) a. [<ha.i><ru>] “enter”
 HL H
 b. [<o.i><ru>] “oil”
 HL H

Hairu and *oiru* have an accent on /a/, not /i/, with the second mora of a diphthong being devoid of accent (McCawley (1967)). We cannot account for such contrasts, without the notion syllable. In a purely mora-based theory, moras are only moras whether they are accented or not, and we cannot give any systematic explanation of the fact that the cases above are distinguished with regard to accentuation. The distinction between the two types of onsetless /i/ cannot be done without the notion syllable, in a language like Japanese, in which there is no phonemic glottal stop.

4.2. Syllabification and Borrowings

Labrune (2012: 131-132) discusses Borrowings into Japanese. Due to the difference in phonological structures in the two languages, when an English word is borrowed into Japanese, various kinds of phonological alternation are triggered. For example, the word *strike* in English turns into *sutoraiku* in Japanese, with Vowel Insertion triggered.

Labrune points out that diphthongs and long vowels are often shortened in the adaptation of English into Japanese.

- (15) a. [re.n.zi] “range”
 b. [ko.n.bi.i.ϕu] “corned beef”

The diphthongal/long nature of the initial syllable is lost in words in (15) ([ei] > [e], [oo] > [o]).

Labrune’s explanation relies on the fact that Japanese feet are optimally bimoraic. By shortening of diphthongs, bimoraicity of the initial foot is kept intact: [re.n][ji], [ko.n][bi.i][ϕu].¹⁰ Also, Labrune states that Japanese words must begin with a full mora (= CV in Labrune’s term); thus the words in (15) avoid the word-initial sound sequences with defective moras such as /rein/ and /koon/.

However, it must be pointed out the shortening fact is not empirically exceptionless. If the two triggering factors, foot-bimoracity and preference for the initial full-mora, are both significant, we cannot account for the existence of types of words that are deviant in two different ways. First, observe the following:

- (16) a. [re.i.n.ko.o.to] “rain coat”
 b. [ko.on.su.ta.a.ʃi] “corn starch”
 c. [ko.i.n] “coin”

¹⁰ With an assumption that moras “defective” in Labrune’s sense cannot initiate a foot.

The shortening is not necessarily triggered by the bimoraicity of feet.¹¹ It may be that the trigger of the phenomena is something about the foot, but it is by no means systematic or productive.

Moreover, a similar effect is observed with the following words:

- (17) a. [e.n.ʒe.ru] “angel”
 b. [o.n.su] “ounce”

Shortening will be triggered even if the output is not with an initial “full” mora. The use of this series of examples does not justify the syllable-less analysis of Japanese by any means, nor does it justify Labrune’s hierarchy of moras.

In relation to loanword adaptation, Labrune’s analysis faces an empirical problem with respect to the analysis of a moraic nasal /N/. Labrune does not use the notion syllable, so her analysis of this element must have been that a moraic nasal is a nasal consonant hanging below a deficient mora (N •), and there is no distinction between it and a usual onset /n/. It causes trouble with the following words, with prenasals in the original language:

- (18) a. [n.dʒa.me.na]/[u.n.ʒa.me.na] “N’Djamena (a place name in Chad)”
 b. [ŋ.ko.mo.ʒi] “N’ko alphabet”¹²

Because there is no theoretical distinction between onset /n/ and coda /N/ and because full moras are the most preferred in Labrune’s analysis, it is expected that we have such forms as /nuzamena/ and /nuko-moʒi/ with a “full mora” /nu/ in the initial position, which *never* occurs. These forms are pronounced as either /ndʒamena/ or /unzamena/, which can only be accounted for in terms of syllables as *un-* forms are the results of seeking for the second best optimal syllables.¹³ However, in the mora-based account, the insertion of /u/ turns out to be the unnecessary addition of moras and should be avoided, and there is no reason why this option is superior to *nuzamena* with initial “full” mora. A syllable-based analysis will give a coherent analysis to the phenomena of loanword adaptation, while a purely mora-based account fails to do so.

5. Conclusion

Labrune’s (2012) analysis of Japanese phonological phenomena with her hierarchy of moras has various empirical and conceptual problems. If we take the notion syllable to be a phonological universal and we have analysis of the same phenomena that Labrune discusses in terms of it, then it must be inferred by the Occam’s Razor logic that Japanese is a mora-counting syllable language.

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¹¹ In fact, a word *reinkoto* “rain coat” had a variant *renkoto*, but the latter is only used among native speakers of certain age groups. In this case, the language chose the non-shortened option. Shinobu Mizuguchi suggested to me that a word like *reinbuutsu* “rain boots” had never adopted the shortened version **renbuutsu*, suggesting that the choice of shortening is a lexical matter.

¹² Among examples of borrowings of prenasal consonants, [e.mu.bo.ma] “Mboma (the name of a Cameroonian football player)” is with a special history. It was imported from the French adaptation of the word, *M'boma* where *M* was pronounced as [ɛm]. Thus, this example should not be considered a genuine borrowing of a prenasal consonant.

¹³ *ndʒamena*, of course, is a result of direct adaptation.

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