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# Compound Accentuation in Tokyo Japanese

Examining the underlying location of pitch accents in short loanwords  
containing a deficient mora

**Helena Uddefors**

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Supervisor: Shinichiro Ishihara

# ABSTRACT

This thesis examines two different approaches to noun compounds accentuation: Labrune's (2012a) approach and Kubozono's (1997) approach, in a quantitative study. Although compound accentuation is a topic which has been discussed by many scholars, there are still parts which need more exploration. In this thesis only bimoraic, monosyllabic loanwords as second components in compounds are analyzed. Firstly, the relevant prosodic units are presented, after which two different standpoints are examined and explained together with their relevant claims. Later, the research, methodology and its drawbacks are presented before showing the results. Regrettably, there was a small number of participants which is why only a limited number of claims are made. Even though Labrune's (2012a) assumptions and claims were very vague, the results show that newer words are more likely to make use of the so-called Snack-bar pattern than the older words. Kubozono's (1997) hypothesis, on the other hand, gives rise to some questions, such as why some words seem to not favor the regular, "newer" pattern, even when the speakers are younger, as well as how old the older generation is. In the end, this study provides some support for Labrune's (2012a) model, although the sample size limits the statistical reliability of this evidence.

Keywords: Syllable, mora, foot, Japanese phonology, pitch accent, noun compound

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# Table of Contents

ABSTRACT.....	I
ACKNOWLEDGEMENTS.....	II
CONVENTIONS AND ABBREVIATIONS .....	IV
1. Introduction.....	1
1.1 The topic.....	1
1.2 Organization .....	2
2. Previous research .....	3
2.1 Japanese prosodic organization.....	3
2.1.1 Syllable and mora structure .....	4
2.1.2 The Japanese foot .....	5
2.2 Syllable-utilizing analysis .....	6
2.2.1 Kubozono (1997).....	6
2.3 Syllable-less analysis.....	9
2.3.1 Labrune (2012a) .....	9
3. The study.....	13
3.1 Purpose .....	13
3.2 Method .....	13
3.3 Stimuli .....	14
3.4 Results .....	16
3.5 Discussion .....	19
4. Conclusion .....	21
References.....	22

## CONVENTIONS AND ABBREVIATIONS

The romanization method used in this thesis is modified Hepburn system. This means rather than  $\wedge$  over a lengthened vowel, double vowels will be used, thus *keeki* instead of *kêki*. When a compound will be presented, a hyphen will signify the morpheme boundary, and the accented mora will be presented in **bold**, as in *banana-pan*. The translation of a word will be presented using ‘’, i.e. *pan* ‘bread’. Sometimes phonological transcription is used. /N/ indicates the mora nasal, as in *pan* /paN/, and /R/ indicates the second part of a long vowel, as in *keeki* /keRki/. An asterisk before a morpheme indicates that the morpheme is ungrammatical.

### Abbreviations

OT = Optimality Theory

$\sigma$  = Syllable

C = Consonant

C1 = Initial component, C2 = Final component (in compounds)

$\mu$  = Any mora

$\pi$  = foot

V = Vowel

PrWd = Prosodic word

# 1. Introduction

## 1.1 The topic

This thesis is concerned with the accentuation of noun compounds with a short *gairaigo*, western loanword as the second component in Tokyo Japanese (henceforth Japanese). The goal was to examine part of the potential evidence for a theory proposed by Labrune (2012ab), who claims that the syllable is not a relevant prosodic unit in Japanese, as opposed to what many other scholars claim (McCawley 1968, Shinohara 2000, Kawahara 2016). In her book *The Phonology of Japanese* (2012a), as well as in her paper ‘Questioning the universality of the syllable: evidence from Japanese’ (2012b), Labrune (2012a, b) reexamines the evidence which was presented in the literature to support the existence of the syllable in Japanese<sup>1</sup>, to later propose a syllable-less approach in its place.

This thesis will examine if bimoraic, monosyllabic words potentially have an underlying final accent. The questions this thesis will try to answer are the following:

- Is there an underlying accentuation difference between bimoraic, monosyllabic loanwords?
- Is there a correlation between when the loanword was borrowed and its accentuation?
- Is there a correlation between the age of the speaker and the accentuation pattern used?

These questions are asked because of a claim Labrune made where she stated, “I assume that there exists an accentual difference at the underlying level between these two lexemes” (2012a: 227), in the context of the accentuation of compounds with bimoraic, monosyllabic second components. Kubozono’s (1997) work will also be examined as Labrune’s (2012a) work is built upon it. Moreover, Kubozono (1997) provided his own analysis when first presenting the different accentuation patterns. His analysis was instead based on sociolinguistics, claiming that the difference lay within the speaker, rather than within the lexical accent of the words.

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<sup>1</sup> Labrune (2012a) acknowledges Larry Hyman’s statement (2003[1985]: 27) “It is of course logically impossible to prove that a language does not have syllables, since it may be the case that it has them but does not show obvious evidence of it”.

## 1.2 Organization

The organization of this thesis is as follows: first the thesis topic and questions are presented, after which, in chapter 2, the relevant prosodic units are presented along with previous research, including Kubozono's (1997) and Labrune's (2012a) works. In chapter 3, the study is presented, with a thorough explanation of the methodology followed by the results from the survey along with the discussion. Lastly, in chapter 4, a conclusion is made summarizing the thesis.

## 2. Previous research

The work this thesis is primarily based upon is Labrune's (2012a, b) work and Kubozono's (1997) work, who both use Optimality Theory<sup>2</sup> (OT) to account for the accentuation of noun compound (henceforth, compounds). Though a full examination and comparison would be preferred, only the accentuation of monosyllabic, bimoraic western loanwords (e.g. *pan* 'bread', *baa* 'bar', etc.) as second components (C2) in compounds will be analyzed.

These loanwords will be analyzed because of the accentuation differences which may arise when they are used as second components in compounds. Note that when analyzing the accentuation of compounds, the second component's (C2) length and accentuation seems to dictate the outcome, rather than the first component (C1) (Kubozono & Mester 1995). Kubozono (1997) divided these Mm words into three groups; the regular ones, the 'Snack-bar' patterned ones, and the fluctuating ones. When presented alone, they seem to have the same accentuation pattern, for example, *pan* 'bread', *baa* 'bar', and *in* 'in', respectively. However, when in compounds, they provide different outputs such as, *furansu-pan* 'French bread', *sunakku-baa* 'Snack-bar', and *chekku-in* or *chekku-in* 'check-in'. Kubozono (1997) analyzed this using OT. However, his constraints could not account for the 'Snack-bar' patterns without a sociolinguistic analysis where one of the constraints' positions are lowered. On the other hand, Labrune's (2012a) constraints can account for the 'Snack-bar' group as well as the regular group, under the assumption that words which behave as *pan* 'bread' have an underlying final accent. Thus, what Labrune (2012a) argues for is that words such as *pan* 'bread' would have an underlying accent, which looks like *uma* 'horse', as opposed to what the surface level accent indicates. Thus, *pan* should be analyzed as /paN/.

### 2.1 Japanese prosodic organization

This section briefly describes the relevant prosodic units discussed in this thesis, namely, the syllable, the mora, and the foot.

The Japanese writing system is mora-based. Although the syllable is considered above the mora in the prosodic hierarchy (Blevins 1995), the mora is definitely relevant in the Japanese language. This fact is supported, for instance, by how feet in Japanese are bimoraic (2 $\mu$ ) rather than bisyllabic (2 $\sigma$ ) as shown by Poser (1990). Moreover, Labrune wants to remove the syllable as a relevant prosodic unit in Japanese because of the "specific properties which [...] make [Japanese prosodemes]

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<sup>2</sup> A thorough understanding of OT will not be necessary to understand this thesis. Readers who want to learn more about OT are referred to read Archangeli (2011).

phonologically different from syllable-based languages” (2012a: 168), thus ultimately removing the universal status of the syllable.

The structural differences between the syllable and the mora are described in subsection 2.1.1. The Japanese foot, and Poser’s (1990) work are briefly presented in subsection 2.1.2.

### 2.1.1 Syllable and mora structure

The syllable ( $\sigma$ ) and the mora ( $\mu$ ) are prosodic units. Japanese is a mora-counting language or arguably a mora-counting syllable language, in contrast to English, which is a syllable language. In English a bisyllabic word could be ‘permit’ and a trisyllabic word could be ‘potato’, in both words the syllables are quite easy to count, po-ta-to, per-mit (the hyphen indicates that syllable boundaries). Moreover, in English the syllable plays a role in where stress appears in a word, for instance, ‘**per**mit’ or ‘per**mit**’ (the bold shows on which syllable the stress lies). One would not be able to utter ‘per**mit**’, as ‘rm’ is not a syllable. Although the structure of a syllable might seem straightforward in the examples provided above, many linguists have discussed syllable structure with various approaches. However, Duanmu (2009) is the one who will be referred to in this thesis, since his approach seems to align well with the possible syllabic structures Japanese might have.

First, “[a] syllable can be divided into an onset and a rhyme” (Duanmu 2009: 6). The rhyme includes a nucleus, which is possibly followed by a coda. The onset is what comes before the rhyme. However, it is not obligatory. In Japanese the onset can only be occupied by a consonant (C) and the nucleus only by a vowel (V). The coda may be occupied by either V or C. Thus, the structure of a syllable can be generalized as CVX (Duanmu 2009) (consonant-vowel-consonant/vowel). Moreover, as noted by McCawley (1968), Japanese would therefore have the distinction between a light and a heavy syllable. A syllable with a coda would be considered heavy (i.e CVC *jin* ‘person’, CVV *kuu* ‘air’), and one without a coda, light (i.e CV *te* ‘hand’, V *e* ‘picture’, etc.).

The structure of a mora, on the other hand, is smaller than that of a syllable. “A heavy syllable has two moras and a light syllable has one mora” (Duanmu 2009: 8). In Japanese traditional linguistics the mora is divided into two types; autonomous or regular moras, structured as CV or V, and special or deficient moras, which include, although not limited to, the mora nasal, /N/ in *pan* /paN/, and the second part of a long vowel, /R/ in *biiru* /biRru/ (Labrune 2012a: 144). However as noted above, when dividing a word into units, the number of units may differ depending on if one divides the word into moras or syllables. For instance, a  $3\mu$  word could either be, (C)VCVCV (i.e *banana* ‘banana’), (C)VCVX (i.e *meron* ‘melon’, *gita* ‘guitar’) or (C)VXCV (i.e *biiru* ‘beer’, *panda* ‘panda’), three light syllables or one light and one heavy syllable. Moreover, the deficient moras are

interesting in that they cannot hold accent<sup>3</sup>, i.e *panda* / \**panda*, *beddo* / \**beddo*, *biiru* / \**biiru*. One can clearly observe this quality in the accentuation of *gairaigo* words, where the accent usually appears at the antepenultimate (third from last) mora. If the antepenultimate mora is deficient, the accent moves to the pre-antepenultimate mora, for instance, *karendaa* instead of \**karendaa* (/kareNdaR/ ‘calender’), which would be expected (Kawahara 2015).

### 2.1.2 The Japanese foot

The standard Japanese foot is bimoraic, 2μ, and can have the following structures: (C)VCV, (C)VV, or (C)VC, where the final C can be the mora nasal /N/ or the first part of a geminate /Q/, and the final V would be equivalent to the second part of a long vowel /R/ (Labrune 2012a: 171).

Poser (1990) presented evidence which is commonly deemed uncontroversial for the importance of bimoraic feet in Japanese, with examples from geisha/bargirl client names, kinship terms, hypocoristic formation, and so on. His work showed that the Japanese foot does not need to coincide with the syllables in a word. For instance, when hypocoristic formations using *chan* /chaN/ are made, truncation may occur mid-syllable in order for them to become two bimoraic feet (2π) long.

#### (1) Formations with hypocoristic *chan*

Taroo > Tarochan (/taroR/ > /taroChaN/)

Jiroo > Jirochan (/jiroR/ > /jiroChaN/)

(Poser 1990: 82)

Poser (1990) also noted that this poses concerns regarding the mora as a sub-constituent to the syllable.

The fact that the Japanese foot consists of mora[s] rather than syllables points to the independence of the mora as a phonological constituent. It also poses a problem for advocates of the position that mora[s] are subconstituents of syllables, since the boundaries of feet, composed of mora[s], need not coincide with syllable boundaries.  
(1990: 103)

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<sup>3</sup> However, there are exceptions, such as, *obaasan**kk*o ‘child cherished by his grandmother’ (Labrune 2012a: 156). The reader who wants to learn more about pitch accent in general is referred to Sato (1999) and Jouo (2012).

## 2.2 Syllable-utilizing analysis

The majority of linguists agree that the syllable is a universal prosodic unit that every human language utilizes, some languages more apparently than others. One of the first to describe Japanese in a syllable-utilizing way was McCawley (1968). He stated that “Japanese in reality is a mora-counting syllable language” (1968: 2). This has since been widely adopted by phonologists in the field.

Kubozono (1997) used the syllable as part of his work on compound accentuation. However, the evidence provided by Poser (1990) still applies and feet are still considered bimoraic rather than bisyllabic in Kubozono’s (1997) work.

### 2.2.1 Kubozono (1997)

In his article, Kubozono discusses the accentuation of noun compounds with a short C2, presenting a non-derivational approach using OT.

The constraints and rankings he presented follows as in (1) and (2) (Kubozono 1997: 277-278).

#### (2) Kubozono’s constraints

- a. OCP: No more than one prominence peak (i.e. word accent) is allowed in a single PrWd.
- b. Parse-accent: Parse the lexical accent of the C2 in compound nouns.
- c. Nonfinality ( $\mu$ ): The head mora, i.e. the accented mora, is not final in PrWd.
- d. Nonfinality ( $\sigma$ ): The head syllable, i.e. the accented syllable, is not final in PrWd.
- e. Nonfinality (Ft[ $\pi$ ]): The head foot, i.e. the accented foot, is not final in PrWd.
- f. Edgemostness/Rightmostness: A peak of prominence lies at the right edge of the Word.

#### (3) Kubozono’s constraint ranking

Nonfinality ( $\mu$ ,  $\sigma$ ) >> Parse-accent >> Nonfinality (Ft[ $\pi$ ]) >> Edgemostness

Kubozono assumed the following; “the OCP constraint in [1a] and Nonfinality ( $\mu$ ) in [1c] are undominated in Japanese compound accentuation” (1997: 278), which is why the OCP constraint is not included in the tables. He presented his results as in the tables below (1997:278-279):

Table 1 /perusha/ + /neko/ > *perusha-neko* ‘Persian cat’

/perusha/ + /neko/	NonFin ( $\mu$ , $\sigma$ )	Parse-A	NonFin ( $\pi$ )	Edgemostrness
☞ a) perusha)-(neko)			*	$\sigma\#$
b) perusha)-(neko)		*!		$\sigma\ \sigma\#$
c) perusha)-(neko)	$\mu$ , $\sigma!$	*		

In table 1, (a) is the optimal choice, since it is compatible with both ‘NonFin ( $\mu$ ,  $\sigma$ )’, and Parse-A, contrary to the next table where /abare/ + /uma/ cannot parse its accent because of ‘NonFin ( $\mu$ ,  $\sigma$ )’.

Table 2 /abare/ + /uma/ > *abare-uma* ‘restive horse’

/abare/+ /uma/	NonFin ( $\mu$ , $\sigma$ )	Parse-A	NonFin ( $\pi$ )	Edgemostrness
a) abare)-(uma)	$\mu$ , $\sigma!$		*	
b) abare)-(uma)		*	*!	$\sigma\ \#$
☞ c) abare)-(uma)		*		$\sigma\ \sigma\ \#$

Thus, ‘NonFin ( $\pi$ )’ is the deciding factor between (b) and (c). Since (b) violates ‘NonFin ( $\pi$ )’, (c) is the optimal choice. Similarly, in table 3, /nebada/ + /shuR/ cannot parse its accent because of NonFin ( $\sigma$ ), which makes the deciding factor the number of violations on ‘Edgemostrness’.

Table 3 /nebada/ + /shuR/ > *nebada-shuu* ‘the State of Nevada’

/nebada/+ /shuR/	NonFin ( $\mu$ , $\sigma$ )	Parse-A	NonFin ( $\pi$ )	Edgemostrness
a) nebada)-(shuu)	$\sigma!$		*	
☞ b) nebada)-(shuu)		*		$\sigma\#$
c) nebada)-(shuu)		*		$\sigma\ \sigma\ \sigma\#!$

Even though this accounts for a majority of compounds with a short C2 it does not account for all. Kubozono (1997) presented that there were three groups, the ‘Snack-bar’ pattern, and the ‘Little Mermaid’ pattern, as well as a group of compounds where variation may occur between speakers,

which he could not account for. The Snack-bar pattern violates the NonFin ( $\sigma$ ) constraint, whilst the Little Mermaid pattern violates NonFin ( $\pi$ ).

Thus, Kubozono reranked is constraints in two ways to provide the optimal outputs for these patterns. This is, however, obviously not applicable to the standard patterns (1997:282):

Table 4 Snack bar pattern, constraint reranking: Parse-accent >> NonFinality ( $\sigma$ )

/sunaQku/+/ <b>baR</b> /	NonFin ( $\mu$ )	Parse-A	NonFin ( $\sigma, \pi$ )	Edgemostness
☞ a) sunakku)-(baa)			*	
b) sunak <b>ku</b> )-(baa)		*!		$\sigma\#$

Table 5 Little Mermaid pattern, constraint reranking: NonFinality ( $\pi$ ) >> Parse-accent

/niNgyo/+/ <b>hime</b> /	NonFin ( $\mu, \sigma, \pi$ )	Parse-A	Edgemostness
a) ningyo)-(hime)	$\pi!$		$\sigma\#$
☞ b) ning <b>yo</b> )-(hime)		*	$\sigma \sigma\#$

When Kubozono (1997) observed the different accentuation patterns he noted that there was a significant generational difference between speakers and the extent of deviation from the standard constraints ranking. Older speakers tended to use the Snack-bar pattern, while the younger speakers tended to the Little Mermaid pattern. Kubozono (1997) suggested that this illustrates an ongoing change in the constraint hierarchy, where the faithfulness constraint ‘Parse-accent’ is gradually lowering its position. However, Kubozono (1997) did not specify the age-range of these groups in his paper. Note that the ‘Little Mermaid’ pattern is not relevant in this work as it only applies to bisyllabic words. As one can see in Table 6 if the Little Mermaid pattern is applied to a monosyllabic C2 the regular pattern i.e. *nebada-shuu* would still be the optimal output.

Table 6 Little Mermaid constraint hierarchy applied on a monosyllabic C2

/nebada/+/ <b>shuR</b> /	NonFin( $\mu, \sigma, \pi$ )	Parse-A	Edgemostness
a) nebada)-(shuu)	$\sigma \pi!$		*
☞ b) nebada)-(shuu)		*	**
c) <b>ne</b> bada)-(shuu)	$\mu! \sigma \pi$	*	

## 2.3 Syllable-less analysis

Labrune (2012ab) and other linguists, such as Hyman (2003[1985]), question the universality of the syllable. Hyman observed that the majority of studies on syllable structure have been operated on languages with consonant clusters, rather than on languages with long vowel sequences, “for others it seems simply not to be interesting, since the assumption is made that each vowel will define a syllable” (2003[1985]: 32). Labrune’s (2012a) arguments are inspired by Hyman’s theory of phonological weight (2003[1985]);

[...] which argues that the universal phonological anchor tier consists of weight units, or beats, that correspond to moras, and that the syllable is not a universal constituent but a language-particular construct built out of the weight units.  
(2012a: 161)

### 2.3.1 Labrune (2012a)

Labrune (2012a) based her analysis upon previously mentioned Kubozono’s (1997)<sup>4</sup> work, changing it by removing the NonFin ( $\sigma$ ) constraint as well as adding the constraints AlignCA and Accent. With this she cannot only account for compounds with a short C2, but also those with a long C2<sup>5</sup>.

#### (4) Labrune’s constraints

OCP:	No more than one accent peak in PrWd.
FaithIO (Head Accent):	The accent kernel of the head noun occupies the same position in the input and the output.
NonFinality ( $\mu$ ):	The accented mora must not be final.
NonFinality ( $\pi$ ):	The accented foot must not be final.
AlignRight:	The accent lies at the right edge of the word.
AlignCA:	Align the accent with the boundary between C1 and C2.
Accent:	Compounds must have an accent.

#### (5) Labrune’s constraint ranking

Accent >> NonFin ( $\mu$ ) >> FaithIO(A) >> NonFin ( $\pi$ ) >> AlignCA >> AlignR

(Labrune 2012: 228-229)

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<sup>4</sup> However, she also includes his previous work from 1995, which was not obtained for this thesis. The AlignCA constraint was part of that previous work.

<sup>5</sup> The reader who wants to learn more about this is referred to Labrune (2012a: 232-235)

When analyzing the same compounds as Kubozono (1997), her constraints gave the same, correct output. However, this only applies when assuming her claim, that some words in reality have a final accent at the lexical level whilst carrying an initial accent on the surface (2012: 230), is true. With this Labrune (2012a) can also account for one of Kubozono's (1997) problematic cases, the Snack-Bar pattern. Her tables are presented below (2012a: 230-231):

Table 7 /perusha/ + /neko/ > *perusha-neko* 'persian cat'

/perusha/+/neko/	NonFin ( $\mu$ )	FaithIO(A)	NonFin ( $\pi$ )	AlignCA	AlignR
☞ a) perusha)-(neko)			*		*
b) perusha)-(neko)	*!	*	*	*	
c) perusha)-(neko)		*!			**

Table 7 behaves exactly as Kubozono's (1997) table with *perusha-neko*, table 1. The same can be observed in table 8 with *abare-uma*.

Table 8 /abare/ + /uma/ > *abare-uma* 'restive horse'

/abare/+/uma/	NonFin ( $\mu$ )	FaithIO(A)	NonFin ( $\pi$ )	AlignCA	AlignR
a) abare)-(uma)	*!		*	*	
b) abare)-(uma)		*	*!		*
☞ c) abare)-(uma)		*			**

Table 9 with *nebada-shuu* behaves similarly to Kubozono's (1997) table. However, Labrune (2012a) assumes that *shuu* has an underlying accent on its last mora, /shu**R**/. Therefore, the table presents the correct answer, as (a) would have otherwise been the optimal choice.

Table 9 /nebada/ + /shuR/ (*shuu*) > *nebada-shuu* ‘the state of Nevada’

/nebada/+/shuR/	NonFin ( $\mu$ )	FaithIO(A)	NonFin ( $\pi$ )	AlignCA	AlignR
a) nebada)-(shuu)		*	*!		*
b) nebada)-(shuu)	*!		*	*	
c) <b>nebada</b> )-(shuu)		*			**

Table 10 contains *sunakku-baa* whose pattern was problematic for Kubozono(1997). However, Labrune’s (2012a) method yields the correct results owing to the removal of NonFin ( $\sigma$ ).

Table 10 /sunakku/ + /baR/ > *sunakku-baa* ‘Snack-bar’

/sunaQku/+/baR/	NonFin ( $\mu$ )	FaithIO(A)	NonFin ( $\pi$ )	AlignCA	AlignR
a) sunakku)-(baa)			*		*
b) sunak <u>ku</u> )-(baa)		*!			**
c) sunakku)-(baa)	*!	*	*	*	

With Labrune’s (2012a) treatment, *sunakku-baa* behaves like *perusha-neko*, since in both cases the accent of their second component fall at the penultimate mora. Nevertheless, *nebada-shuu* behaves like *abare-uma*, since their second component’s accents are final. As one can see, the assumption that there is an underlying final accent on *shuu* /shuR/, is crucial for her analysis to work.

Labrune (2012a: 227-228) claims that older loanwords will most commonly contain an underlying final accented as /shuR/ whilst newer loanwords are accented like /baR/, with an initial accent. The morphemes which supposedly were borrowed in between these two ambiguous time periods would be the fluctuating ones.

(6) Underlying final accent

/piN/ ‘pin’ /paN/ ‘bread’

/maN/ ‘man’ etc.

(2012a: 227)

(7) Underlying initial accent

/b̥aR/ 'bar'    /faN/ 'fan'

/kiR/ 'key'    etc.

(2012a: 228)

Moreover, if what Labrune (2012) claims is true, one can assume that the syllable is not relevant in Japanese, as only the nucleus of a syllable can hold an accent.

## 3. The study

### 3.1 Purpose

The purpose of this thesis is to find if there is a difference in the underlying accent of older and newer 2 $\mu$  1 $\sigma$  loanwords in Tokyo Japanese, as if there is a difference it could stand as evidence against the universality of the syllable. Even though both *gairaigo* words and Sino-Japanese words (words borrowed from Chinese) utilize these patterns, the words used are only *gairaigo* words. The chosen words were used in a quantitative study. I made the participants listen to recordings with two different accentuation patterns for a compound, and they had to decide which pattern felt more correct. If these 2 $\mu$  1 $\sigma$  loanwords prefer different patterns in compounds depending on their age, this could be considered evidence for a theory proposed by Labrune (2012a). If there instead seems to be a generational difference between speakers, rather than the compounds, this could be evidence supporting a theory proposed by Kubozono (1997).

### 3.2 Method

To collect data, an online survey was used. The participants had to enter which prefecture they were native to, in order to make sure the analyzed replies were true to the Tokyo dialect, as opposed to other dialects. Their age was also asked, for a potential generational gap between preferred patterns. The participants were then presented with fabricated compounds, containing a 3 $\mu$  food word as the C1, and a foreign loanword as the C2, for instance *ichigo* + *baa* ('strawberry' + 'bar'). They would then listen to two recordings containing different accentuation patterns for each compound, i.e. *ichigo-baa* and *ichigo-**baa***. Lastly, they were asked to pick which of the two sounded more correct. However, the answers 'both are natural', 'both are unnatural', and 'cannot judge' were also included.

There were 20 relevant compounds which had 2 $\mu$  1 $\sigma$  morphemes as their C2. There were also 20 fillers, which included compounds with 2 $\mu$  2 $\sigma$  morphemes, 3 $\mu$  morphemes as well as 4 $\mu$  morphemes, as their C2. Thus, there were a total of 40 compounds in the survey.

An online survey was used in order to reach as many native speakers as possible. However, due to lack of sufficient native speaker contacts, the survey gained very few responses, only 21 participants, with 6 of them native to Tokyo. Because of this, the other prefectures of Kanto will also be included when analyzing the data, in total this yielded 11 participants.

Other limitations, which arose when using this format, includes the limited number of words which could be included, as the survey would have become even longer if more words were added.

There were also words chosen that could not be found in the lexicon series *Nihon Kokugo Daijiten* (NKD) (2000-2002) or no year of the first sighting in literature was assigned together with the word, thus making the data collected more ambiguous. Another limitation was the participants level of knowledge, as well as the potential errors which might have occurred when answering, for instance, accidentally not listening to both recordings, misunderstanding the instructions, among other possibilities. Moreover, participants might have thought of different words when answering, since a translation or synonym was not included. A big flaw, however, was that instead of letting the participants submit their exact age, they had to choose between age-groups.

### 3.3 Stimuli

The words have been divided into 4 groups based on the time-period of their appearance: Pre-Meiji, Meiji, Taishoo-Shoowa, and unknown (the words will also be analyzed as ‘Pre-1900’ and ‘Post-1900’ at times). The words examined were the following:

Table 11 The words analyzed in this thesis

Unknown	Pre-Meiji (-1867)	Meiji (1868-1912)	Taishoo-Shoowa (1913-1989)
<i>*Shoo</i> ‘show’	<i>*Pan</i> ‘bread’ 1592	<i>Jin</i> ‘gin’ 1870	<i>Gan</i> ‘gun’ 1914
<i>Ban</i> ‘bang, van’	<i>*Pen</i> ‘pencil’ 1798	<i>Kan</i> ‘can’ 1886	<i>*Fan</i> ‘fan’ 1922
<i>Fin</i> ‘fin’		<i>*Pin</i> ‘pin’ 1892	<i>Tan</i> ‘tongue’ 1930
<i>Shii</i> ‘sea’		<i>*Kii</i> ‘key’ 1894	<i>Paa</i> ‘par’ 1932
		<i>*In</i> ‘in’ 1906	<i>*Kaa</i> ‘car’ 1935
		<i>*Baa</i> ‘bar’ 1909	<i>On</i> ‘on’ 1965
		<i>Dee</i> ‘day’ 1911	
		<i>*Man</i> ‘man’ 1912	

Some of the chosen words here have been analyzed or referred to by Kubozono (1997), and Labrune (2012a) (they have been marked with an asterisk). The decision to include these words was to examine if the outputs provided by OT apply in practice or not. Something noteworthy is that some words which were included have been said to “obviously belong to a class of loans which are neither very old nor very recent” (Labrune 2012a: 228), the word *kaa* (henceforth, the accent and the

translation will not be given for the analyzed words) was one example given for this ‘neither old nor new’ group, whilst *kii* was considered as newer, and *pin* as well as *man* was considered as very old, or rather as part of “a small number of ancient loans from Western languages” (2012: 228), contrary to the information obtained for this study. However, the information about the age of the loanwords was obtained through NKD (2000-02)<sup>6</sup> which only showed the first sighting of the loanword in literature, in other words, some loanwords might have orally been borrowed earlier.

With Kubozono’s (1997) analysis and constraints all of the words will end up with the regular pattern as the Snack-bar patterned ones seem not to be predictable, Kubozono (1997) only mentioned *baa* and *fan* as part of the Snack-bar pattern. Moreover, since Kubozono (1997) suggested that the difference between the patterns was due to a sociolinguistic change rather than the lexical accent of the words, one might assume that this will show in the results with the older participants choosing the Snack-bar pattern more frequently.

If Labrune’s (2012a) approach applies instead, one would see that the newer the word is the more likely it will be to utilize the Snack-bar pattern. This could then support the claim that older loanwords have an underlying final accent, whilst newer loanwords have an initial accent. Ultimately strongly questioning if the syllable is relevant, as only the nucleus of a syllable can hold an accent. Thus, *pen* a word which obviously would be considered as old, would presumably be analyzed as:

Table 12 /**banana**/+/pe**N**/(*pen*)

/ <b>banana</b> /+/pe <b>N</b> /	NonFin ( $\mu$ )	FaithIO(A)	NonFin ( $\pi$ )	AlignCA	AlignR
a) <b>banana</b> )-(pen)	*!		*	*	
b) <b>banana</b> )-(pen)		*	*!		*
☞ c) <b>banana</b> )-(pen)		*			**

<sup>6</sup> Only NKD (2000-02) was used since it was difficult for the author to find sources on loanword etymology.

Whilst an obviously new one such as *on* would presumably be analyzed as:

Table 13 /banana/+/oN/

/banana/+/oN/	NonFin ( $\mu$ )	FaithIO(A)	NonFin ( $\pi$ )	AlignCA	AlignR
a) banana)-(on)			*		*
b) banana)-(on)		*!			**
c) banana)-(on)	*!	*	*	*	

### 3.4 Results

In this section the results will be presented in graphs together with a summary of the results

In total there were 21 participants out of which 11 were from the Tokyo (Kanto) area. 5 participants were the age 20-39, 6 participants were the age 40-59. As one can see in (7), only 2 of the participants answered, ‘cannot judge’, one time each. However, ‘both are unnatural’ were chosen for 8 words by 5 different participants. The most preferred pattern was the ‘normal’ (*nebada-shuu*) pattern (henceforth referred to as pattern #1), whilst the ‘Snack-bar’ (*sunakku-baa*) pattern was preferred less often (henceforth referred to as pattern #2).

Table 14 The participants’ answers

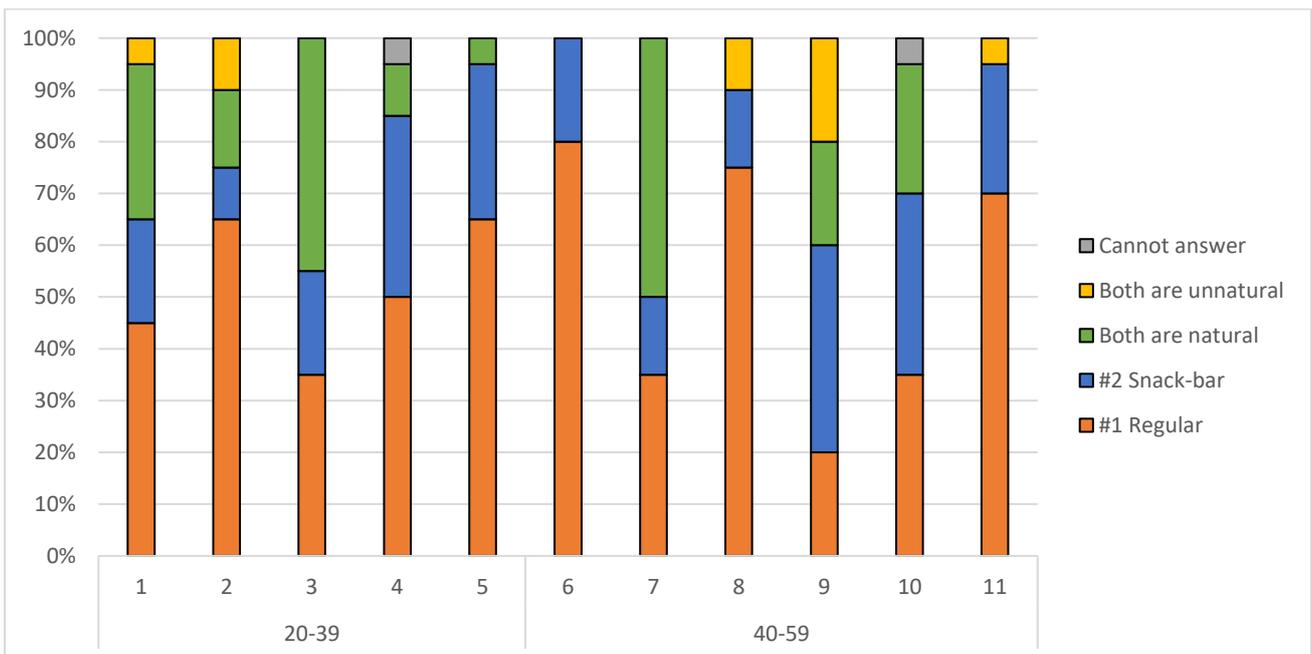


Table 15 The participants' answers: age group 20-39

<i>Participant</i>	<i>#1 Regular</i>	<i>#2 Snack-bar</i>	<i>Both are natural</i>	<i>Both are unnatural</i>	<i>Cannot answer</i>	<i>Total</i>
1	9	4	6	1		20
2	13	2	3	2		20
3	7	4	9			20
4	10	7	2		1	20
5	13	6	1			20
<i>Total</i>	52	23	21	3	1	100

Table 16 The participants' answers: age group 40-59

<i>Participant</i>	<i>#1 Regular</i>	<i>#2 Snack-bar</i>	<i>Both are natural</i>	<i>Both are unnatural</i>	<i>Cannot answer</i>	<i>Total</i>
6	16	4				20
7	7	3	10			20
8	15	3		2		20
9	4	8	4	4		20
10	7	7	5		1	20
11	14	5		1		20
<i>Total</i>	63	30	19	7	1	120

In table 17 below the distribution of the answers on each word is presented, the words have been sorted from new to old, with the unknown words first. As one can see, only the words *man*, and *dee* had 100% votes be on only one pattern, though *pan*, and *pin* where close with only one vote off each. The other words which seem to prefer pattern #1 are, *pen*, *jin*, *kan*, *kii*, *gan*, *tan*, *kaa*, and *shoo*. Not including the 'both are natural' votes, there were only four words which had the majority choose pattern #2, *fan*, *fin*, *shii*, and *on*. If one includes 'both are natural' as votes for both patterns, i.e *baa* then have 100% (11) votes for pattern #2 and 55% (6) votes for pattern #1, one can see that the words *ban*, *paa*, and *in* are highly fluctuating with close to equal votes on both patterns. Moreover, with this analysis one can see that the Snack-bar pattern is more accepted the newer a loanword is. As noted by my opponent, even though pattern #1 is still preferred overall, the newer words (post-1900) preferred pattern #2 for over 25%, whilst the pre-1900 words only had around 9% preference for it. The obvious exceptions to this would be *man*, and *dee*, mentioned earlier, which are post-1900.

Table 17 The distribution of the answers for each word

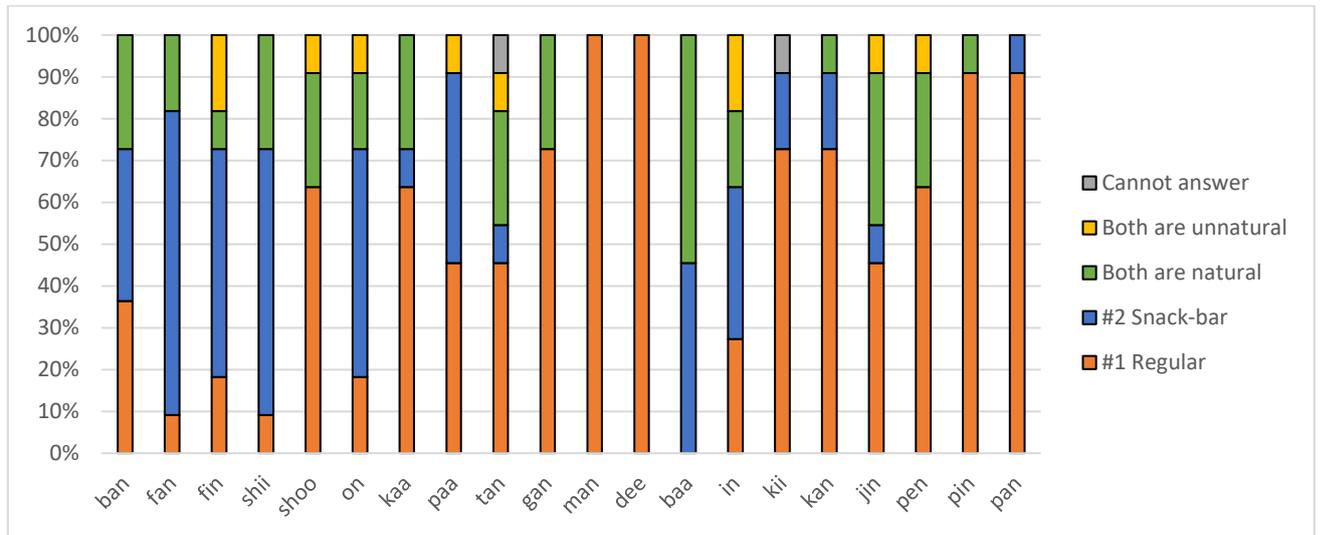


Table 18 Distribution of votes on words

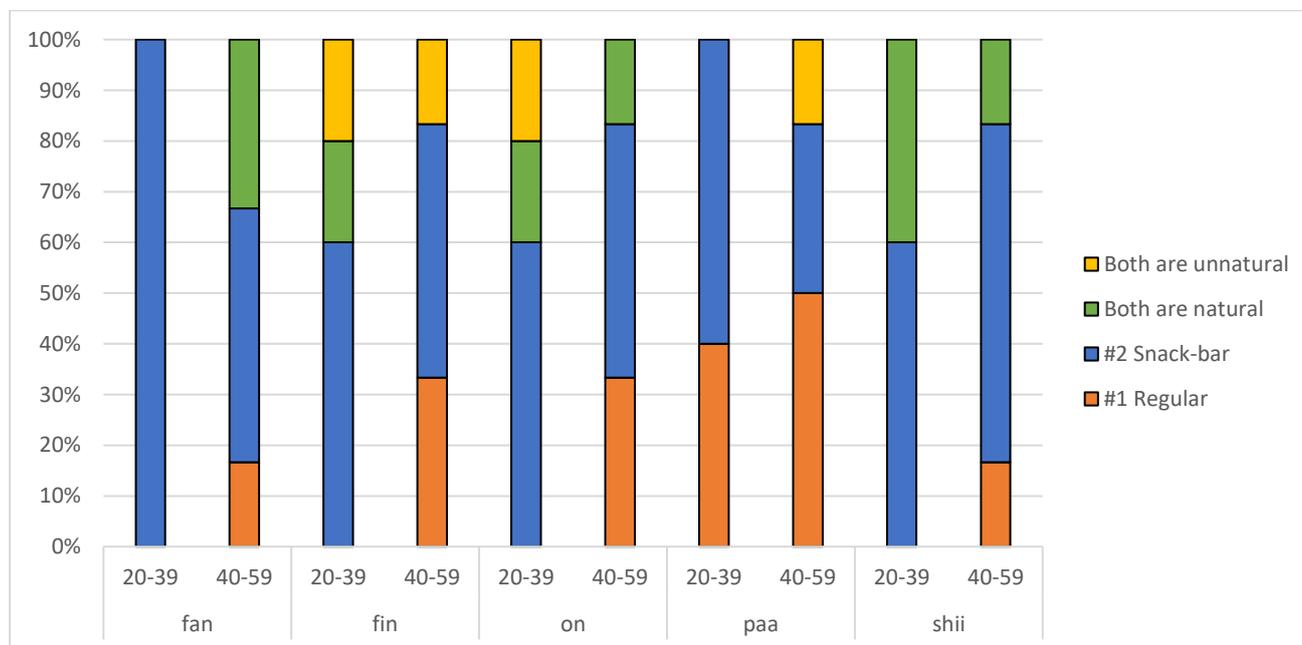
<i>The words</i>	<i>#1 Regular</i>	<i>#2 Snack-bar</i>	<i>Both are natural</i>	<i>Both are unnatural</i>	<i>Cannot answer</i>	<i>Total</i>
<i>Ban</i>	4	4	3			11
<i>Fan</i>	1	8	2			11
<i>Fin</i>	2	6	1	2		11
<i>Shii</i>	1	7	3			11
<i>Shoo</i>	7		3	1		11
<i>On</i>	2	6	2	1		11
<i>Kaa</i>	7	1	3			11
<i>Paa</i>	5	5		1		11
<i>Tan</i>	5	1	3	1	1	11
<i>Gan</i>	8		3			11
<i>Man</i>	11					11
<i>Dee</i>	11					11
<i>Baa</i>		5	6			11
<i>In</i>	3	4	2	2		11
<i>Kii</i>	8	2			1	11
<i>Kan</i>	8	2	1			11
<i>Jin</i>	5	1	4	1		11
<i>Pen</i>	7		3	1		11
<i>Pin</i>	10		1			11
<i>Pan</i>	10	1				11
<b>Total</b>	115	53	40	10	2	220

### 3.5 Discussion

Here the discussion will be made, analyzing the data found in the previous section with Kubozono’s (1997) method and then with Labrune’s (2012a) method.

Kubozono (1997) claimed that the difference between the two patterns lies within the speaker. He wrote that a sociolinguistic change is happening where the FaithIO/Parse-A constraint is lowering its position in the constraint hierarchy. Considering this it is interesting that some words which preferred pattern #2 (Snack-bar), but still had at least one vote in pattern #1 (regular), got votes for pattern #1 from individuals of the older group, contrary to what one would assume. This can be seen in table 19 below. The question also stands as to why these presumably newly borrowed words such as, *fan* ‘fan’, *fin* ‘fin’, and *shii* ‘sea’ would make use of pattern #2. One explanation that comes to mind would be that these younger speakers hear older speakers uttering the word in a compound using this “older” pattern. However, some (if not all) of the words brought up here, would probably be considered as very new loanwords. Thus, it would be the younger generation who most frequently use these words. Moreover, most of the participants in this study might have been considered as part of the younger generation when Kubozono (1997) conducted his study anyway.

Table 19 Vote distribution for each age-group for specific words



Another interesting thing to note is *baa* ‘bar’ which had most votes on ‘both are natural’ rather than on pattern #2. I had assumed that since it was part of the example compound for when Kubozono (1997) introduced the ‘Snack-bar’ pattern (The pattern was even named after its

compound, *sunakku-baa*) that the participants would have a stronger preference specifically towards pattern #2. Moreover, whilst most participants chose pattern #2 for the word *shoo* ‘show’, it was referred to as being part of the fluctuating group by Kubozono (1997). When comparing *shoo* ‘show’ to *in* ‘in’, which was also referred to as fluctuating, *in* ‘in’ got votes in all categories. One would assume that they would have had a more similar distribution if both were to be fluctuating.

In Labrune’s (2012a) work she claimed some words to be “ancient”, or very new, this information did not always coincide with the the information obtained for this study. However, even though the information obtained by NKD (2000-02) might not be accurate, Labrune did not include any references to her claims at all (2012a: 228). She included the words *kii* and *baa* as newer, thus presumably conforming to pattern #2. However, *kii* prefers pattern #1. Moreover, she considered *kaa* neither new nor old, but fluctuating. However, looking at the information obtained through NKD (2000-02), *kaa* is newer than both *baa* and *kii*. Moreover, it is interesting that *kii* ‘key’, which was included as having an initial accent by Labrune (2012a) seems to instead follow pattern #1, suggesting an underlying final accent, if one follows her analysis. As noted by my opponent one can see that newer words do have a higher preference for pattern #2 compared to older words. However, the regular pattern #1, is still preferred. Moreover, since it seems as if Labrune (2012a) only guessed the age of the words, considering the fact that she did not include any years nor time periods to categorize as old or new, as well as a lack of references to support her categorization, it is easy to look over her claim as irrelevant. However, the increase of pattern #2 usage could be considered evidence for her claim. With a larger number of loanwords which are very old, together with some newer loanwords, one could perhaps look further into this potential correlation.

Ultimately Labrune’s (2012a) analysis seems more likely. This might only be because of the narrow age-range of the participants. However, with a larger study one can compare both of their work again, with a larger number of participants of different ages, as well as with more words from different time-periods.

## 4. Conclusion

Although compound accentuation is a topic which has been discussed by many scholars, there are still parts which need more exploration. In this thesis only bimoraic, monosyllabic loanwords as C2 have been analyzed. First, the relevant prosodic units, the syllable, the mora, and the foot, were presented, after which two scholars' different standpoints were examined and explained together with their relevant claims. Kubozono (1997) with syllable-utilizing approach, and Labrune's (2012a) approach which questions the relevance of the syllable. Later, the research purpose, the methodology and its drawbacks were presented before showing the results. There were, regrettably, very few participants, hence only a limited number of claims could be made. Moreover, Labrune's (2012a) assumptions and claims concerning the actual age of the words she used were very vague. However, the results show that newer words are more likely to make use of the Snack-bar pattern than the older words, despite this the regular pattern is still preferred. Kubozono's (1997) hypothesis, on the other hand, gave rise to some questions, such as why some words seem to not favor the 'newer' regular pattern, even when the speakers are younger, as well as how old the 'older generation' is. In the end, this study provided some support for Labrune's (2012a) model, although the sample size limits the statistical reliability of it.

Although no decisive result came out of this study, it is very much encouraged that further studies which include different words and more participants should be conducted, in order to put the theoretically optimal patterns OT give to the test.

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