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# **Accentual change in the lexical form of Japanese i- adjectives**

**Comparison over time with attention to *rentaikei* and *shuushikei***

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## **Abstract**

This study investigates the seemingly increasing spread of accentedness within Japanese i-adjectives in lexical final form, *shuushikei*, and adnominal form, *rentaikei*, by conducting an online survey containing Likert scale questions. Once the data had been collected, the informants were separated into age groups and their results compared between each other. In addition, the current results were compared to those of an earlier study conducted in 1993 (Taniguchi 1995). Although the total number of participants was rather low, the results suggest that the accented pattern might indeed be spreading. Moreover, the results tell us that the perceptual acceptance for accentedness is vastly higher in *shuushikei* than in *rentaikei*, even in the case of unaccented adjectives.

## **Keywords:**

Japanese pitch accent, Adjective, Shuushikei, Rentaikei, Accentual change, Perceptual acceptability

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## Conventions

Throughout this study accent location will be marked using ‘˘’. Moraic boundaries are marked with a dot, as in To.o.kyo.o, syllabic ones with a hyphen, Too-kyoo, and feet are framed with parentheses. Romanization follows the Hepburn system, which means that long vowels are written as, for example, *oo* in *tooi* ‘far’ rather than *tôî* (apart from *ee* that is romanized as *ei*). This will be ignored, however, for personal names and place names, so ‘Tokyo’ remains as it is without writing ‘Tookyoo’. The Hepburn system is preferable to other systems as it allows moras to remain visible.

Italics are used when writing a romanized Japanese word, and underlining is used for emphasis. When a Japanese word appears within a sentence, the translation of the Japanese word, or phrase, is written immediately after the word with single quotation marks.

## Glossing

When glossing, a hyphen marks morphological boundaries while ‘+’ is used between a particle and the relevant word. This is done to not confuse the reader to think that the area between a word and a particle is a morphological boundary.

ADJ	Adjective	NOM	Nominative case particle
ADNOM	Adnominal	NPST	Non-past
COP	Copula	OBJ	Object marking particle
GER	Gerund	PST	Past tense
INF	Infinitive	TOP	Topic marking particle
NEG	Negation		

# 1 Introduction

## 1.1 Topic

Language tends to be ever changing, as is usually apparent simply by observing the differences between native speakers of different generations. There is also often some amount of regional variation. For pitch accent languages, naturally, the pitch accent is also subject to change. As for Japanese, which is a pitch accent language, regional differences appear. In Tokyo Japanese two types of pitch accent systems exist: an  $n+1$  system wherein the number of possible accent patterns is dependent on the length of the word generating an  $n$  number of patterns,  $+1$  representing the unaccented alternative, and also a two-pattern system for verbs and i-adjectives, accented and unaccented.

I-adjectives (in contrast to na-adjectives, see section 1.2) are already more often accented rather than unaccented (Kubozono 2008:181). Previous research also suggests that the accented pattern is becoming more common and that, while i-adjectives in *shuushikei* (lexical form in final position) and *rentaikei* (adnominal position) look the same, there is a difference in how widespread the accented pattern is between these positions (cf. Taniguchi 1995:382-377). In *shuushikei* the accented pattern seems preferred while in *rentaikei* the unaccented one seems preferred. For example, if the unaccented i-adjective *karui* ‘light’ (i.e. weight) appears before a noun (*rentaikei*) it remains in its lexical form just as if it had appeared in the end of a sentence (*shuushikei*). However, while morphologically identical, it would be accented more often in *shuushikei*. Example (1a, b) below show the difference between *rentaikei* (1a) and *shuushikei* (1b).

- (1a) *Oishii*      *ame+o*      *tabe-ta*  
Delicious      Sweets+OBJ      eat-PST  
‘(I) ate delicious sweets’
- (1b) *Ame+wa*      *oishii*  
Sweets+TOP      delicious  
‘Sweets are delicious’

This study investigates how widespread the accented pattern is in Japanese i-adjectives today, and if there is a difference between *rentaikei* and *shuushikei*, to see if the accented pattern is still spreading. Furthermore, it investigates if there is a difference regarding the length of the word, as quadromoraic words tend to be unaccented (see section 1.2, 2.2 and 2.4). It is

expected that accented alternatives of unaccented adjectives are more widespread among the younger generation(s) rather than the older generation(s) of native speakers today.

To investigate this, an online questionnaire was sent out in which the informants were asked to evaluate how natural each adjective was on a Likert scale. After analysing the results from just the current study, the results were compared to those presented by Taniguchi (1995). This study found that the accented pattern was almost always perceptually acceptable when an adjective was in *shuushikei*, regardless if it was an accented adjective or not. This difference between *rentaikei* and *shuushikei* was apparent regardless of the age of the informants. There was also, generally, a slight difference between the different age groups regarding how acceptable accentedness was in *rentaikei*, where the oldest group found it the least acceptable. Moreover, the quadromoraic adjectives present in this study were unexpectedly deemed more acceptable with accent than the unaccented trimoraic adjectives were, except for one (*tooi*).

## **1.2 Structure**

The following sections 1.2 and 1.3 are intended to provide a foundation for the reader. In 1.1. a few basic concepts (mora, syllable, stress, tone, and pitch accent) are briefly introduced. This is then followed by a brief introduction to Japanese Pitch Accent in 1.2, with a focus on the Tokyo Japanese pitch accent system. Comparison is also drawn with one other system, namely that of the Kansai-*ben* dialects.

In chapter 2 *Previous Research* the Japanese pitch accent is examined in more detail, focusing on the pitch accent pattern, within some specific lexical categories in the following order: 2.1 *Nouns*, 2.2 *Compounds*, 2.3 *Verbs and adjectives*. Looking at lexical categories other than adjectives is necessary to grasp the Japanese pitch accent completely.

The research questions are listed in chapter 3, followed by a detailed description of the methodology. Additionally, as this study is limited in how many words can be included and the subject matter ideally requires the inclusion of a great number of words, an account of which words appear in the study is also included. The results are then presented and analysed in chapter 4. To conclude the thesis, some concluding remarks are made in chapter 5. This is also followed by some ideas for future research, as well as some thoughts on the impact the current results have on future studies.

## **1.3 Pitch Accent: The basics**

To introduce the concept of a pitch accent, we must first look at stress and tone. Stress can manifest as a variety of phonetic phenomena while tone is directly related to the F0 contour. F0, or fundamental frequency, is the measurement the vibration of the vocal folds (measured



in hertz) (cf. Féry 2017:319; Gussenhoven 2004:1 f.). The resulting sound is what is being experienced as pitch. The faster the vocal folds vibrate, the higher the resulting pitch will be (Gussenhoven 2004:2). F0 and pitch are occasionally used with the meaning of the other, or rather, one is used to mean both (Kawahara 2015:446). However, since they both refer to the same event, in the case of Japanese a fall in F0/Pitch (described below), it is not terribly problematic.

In a variety of tonal languages several F0 melodies are present, such as Mandarin Chinese that has four (see Féry 2017:4). In Tokyo Japanese, the F0 pattern always manifests as a HL (High Low) fall (see Féry 2017:196). This is not to say that Japanese is a tonal language, but merely to show how one can talk about F0. Japanese is a pitch accent language and, as put by Féry (2017:187), a pitch accent language is a language “with co-occurrence of both lexical stress and lexical tone.” We get a further explanation when she states “[...] pitch accent languages can be categorized straightforwardly: only the lexically stressed syllable has a lexical tone specification; all other syllables in the word do not.” (Féry 2017:188).

In other words, in pitch accent languages both stress and tone appear on the same syllable, and only on that syllable, meaning that a tone cannot appear on an unstressed syllable (cf. Féry 2017:181). However, it might be noteworthy that pitch accent languages have sometimes been grouped together with tonal languages (cf. Féry 2017:180). It needs to also be mentioned that the accent in pitch accent languages, just as tones in tonal languages, denotes meaning to words. Accent is not the same as emphasis. The accent is specified and cannot be changed without affecting the meaning of the word.

### **1.3.1 *The Mora***

In addition to saying a few words about the notion of pitch accent itself, two additional terms are crucial for the comprehension of the contents of this paper and need to be explained, starting with the mora.

The mora is a temporal unit. Moras are constituents of syllables used to calculate syllabic length or weight (Féry 2017:40). Organised in a hierarchical structure, the mora is the smallest unit followed by the syllable, and lastly the foot<sup>1</sup> (cf. Féry 2017:36). Moras are generally considered effective in describing many phonological phenomena in Japanese; that is, apart from just using them to describe syllables.

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<sup>1</sup> Feet will only be briefly mentioned in this thesis and describing them in detail would be overly complicated for the extent to which feet are used here. Therefore, an interested reader is encouraged to investigate them by reading books such as Féry’s (2017) *Intonation and prosodic structure* and Labrune’s (2012) *The Phonology of Japanese*, as they are, normally, highly relevant on the topic of pitch accent.

Although Japanese writing normally contains Kanji, Japanese can be written using just kana<sup>2</sup>. Every kana character counts one mora, except the palatalized ones<sup>3</sup>. Thus, moras can also be vowel-less (for example *n* and those marked using the つ *tsu* kana written small as in あった→*atta* → a.t.ta ‘was there’) or just vowels (a, i, u, e, o). Following this, a word like ‘Nintendo’ is counted as ‘ni.n.te.n.do.o’ which is 6 moras. In terms of syllables ‘Nin-ten-doo’ consists of 3 parts.

### 1.3.2 The Syllable

The syllable is a prosodic constituent, situated between the mora and the foot, that can consist of three parts: an onset, a nucleus, and a coda (Tsuji-mura 2014:65 f.). Onset refers to the syllable initial consonant(s) (C), the nucleus to a vowel (V), and the coda to the syllable final consonant(s). Neither the onset nor the coda is necessarily present in all syllables. A single syllable word like ‘strand’ [strænd] is thus analysed as:

Onset	Nucleus	Coda
str	æ	nd

The syllable is seen as a universal phonetic phenomenon (see Féry 2017:40). In Japanese, syllables are open (lack coda) and coincide with moras. A syllable can consist of one or two moras. Syllables can be light ((C)V) or heavy (consisting of 2 moras as in (C)V.V, (C)V.N, (C)V.C) depending on whether a coda is present and/or whether the nucleus consists of a glide<sup>4</sup> following a diphthong (Tsuji-mura 2014:65 ff.). Regarding the Japanese accentuation system, Tsujimura mentions that: “A number of insightful original observations made by McCawley have proven to serve as a vehicle to advocate the relevance of both mora and syllable in the Japanese accentuation system, and have in fact led him to identify the language as ‘mora-counting syllable language.’” (Tsuji-mura 2014:87). Other researchers agree that the mora, as well as the syllable, are relevant for the accentuation system; such as put by Kubozono (2018:168) “the mora is used as the basic unit to measure phonological distances,

<sup>2</sup> *Kana* refers to the Japanese writing systems *hiragana* and *katakana*, which can be romanized identically. For example, there is a kana character for *a*, *ka*, *ga*, etc. in both systems. *Ka* in *hiragana* is か and ㇰ in *katakana*, respectively.

<sup>3</sup> The moras containing palatalized consonants are created by combining certain kana characters. For example, *ki* combined with *ya* becomes *kya*.

<sup>4</sup> See Tsujimura (2014:13) for a summarised definition of glides.

whereas the syllable actually bears the accent.”<sup>5</sup>

There is an ongoing debate about the usefulness of the syllable in describing the Japanese pitch accent wherein Labrune holds that the notion of mora and foot is enough to explain a variety of phenomenon against the general idea, which includes the syllable. The subject will not be looked at in depth here, thus an interested reader is referred to read Labrune’s *The Phonology of Japanese* (2012).

A variety of proof in favour of the mora can be found in studies about speech errors and stuttering (cf. Tsubasa 1982; Kubozono 1985:228, cf. 2006a; Ujihira and Kubozono 1994 as cited in Tsujimura 2014:70 f.). Research also suggests that Japanese speakers detect moras rather than syllables in words (Labrune 2012:146 f.). Nevertheless, the syllable seems to remain relevant. For example, it has been observed that the accent of a word moves to the head mora of the syllable that it is part of when the mora that is expected to be accented is deficient<sup>6</sup>. The expected mora in the loanword *painappuru* ‘pineapple’ would be the antepenultimate (3<sup>rd</sup> from the right) one: pa.i.na.p̣̚.pu.ru. However, the accent shifts from *p* to *na* which is the head mora of that syllable. On the other hand, Labrune refutes this proof by pointing out the behaviour of the accent of the third component (coda) of a heavy syllable. An example is ‘niho`n’. The second syllable *hon* is the heavy one. In it, the fall in pitch occurs before the nasal *n*. However, if the entire syllable were accented, the change in pitch before the fall should carry throughout the entire syllable, which is the case in syllabic languages such as English (Labrune 2012:156).

All in all, it can be said that while Labrune has presented alternative analyses for some pitch accent phenomena in Japanese that do successfully explain things which other theories could not she also ends up with some exceptions. On the other hand, to warrant an abandonment of the syllable, it is seemingly so that more experimentation and more proof is necessary. Throughout this thesis both syllables and moras will be considered.

## 1.2 Japanese Pitch Accent

Japanese dialects may be separated into different types based on their similarities in accent systems and patterns (Cf. Labrune 2012:255). Tokyo Japanese displays different accentual systems depending on the lexical category in question. As mentioned, for adjectives and verbs

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<sup>5</sup> This is not to say that it is the same in every dialect. For example, Nagasaki Japanese uses the mora both as a measuring unit and as bearer of accent while Kagoshima Japanese uses the syllable in the same way (Kubozono 2018:169 f.)

<sup>6</sup> Kawahara explains: “deficient moras are those that do not occupy the head position of a syllable.”. Three specific things that make a mora “non-head” are given: (if the mora is...)... the second half of a diphthong...the second half of a geminate or a long vowel, or a coda nasal.” (2015:454).

it displays a two-pattern system, accented or unaccented. This pattern will be explained in more detail in section 2.3. For nouns it displays an  $n+1$  system, which means that the accent can appear on any mora in a word, generating an  $n$  number of patterns depending on the length of the word, +1 being the unaccented pattern. A three-mora long word such as *atama* ‘head’ can thus potentially display 4 different accent patterns: Initial (*a`tama*), medial (*ata`ma*), final (*atama`*), and no accent (*atama*). Note that these are the potential accents for this word that the pitch accent system allows. The Japanese pitch accent is culminative, which means that at most one accent peak is permitted per word (Kawahara 2015:452). A word may not be pronounced in a multitude of ways, but any mora could potentially have been the specified as the accented one. That is, except for deficient moras (see p. 10).

Tokyo Japanese differentiates meaning of words, i.e. makes lexical contrasts, by either accenting a word or leaving it unaccented, and if it is accented the placement of the accent is also meaningful (Kawahara 2015:447). A common example of lexically contrasting words in virtue of accentedness/unaccentedness is given in (2a, b).

- (2a) Ame+ga (Unaccented)  
       ‘Sweets+NOM’  
 (2b) A`me+ga (Accented)  
       ‘Rain+NOM’

An example of the same thing but in virtue of accent pattern (since both words are accented) would be, as given by Kawahara (2015:448):

- (3a) Ka`ta+ga (Initial accent)  
       ‘Shoulder+NOM’  
 (3b) Kata`+ga (Final accent)  
       ‘Frame+NOM’

The vowel *a* in the first mora *ka* in (2a) is accented (high tone). The following moras bear a low tone, F0 falls, and thus the word can be described as ‘HLL’. Some general rules regarding the accent exist; If the first mora is not accented words initially receive a LH pattern (initial lowering) and any moras with non-specified tones copy the rightmost specified tone (Kawahara, 2015:449 f.). This is often referred to as tonal spreading or just spreading. See Kawahara (2015:450 f.) for several examples of this effect.

Generally, it can be said that many Japanese words are unaccented and that, at least in the case of Sino-Japanese (SJ) and native words, the accent pattern is unpredictable (cf.

Kawahara 2015:452). Interestingly, a very large number of loanwords<sup>7</sup> seem to be accented. According to a corpus containing trisyllabic (3 syllables long) words created by Kubozono (2008:167) 93% of loanwords are accented yet only 29% of native words are accented. 51% of SJ-nouns are unaccented (see also Féry 2017:194; Kawahara 2015:453). Additionally, quadromoraic words in general (90% of them) tend to be unaccented although the number goes down to 30 % if the final mora is deficient (Labrune 2012:202). This trend that quadromoraic words tend to be unaccented is true even in the case of truncation (Kawahara 2015:459), and abbreviations (Labrune 2012:214). Unaccentedness can potentially be sociolinguistically explained in some cases as with the phenomenon known as *senmonka akusento* (specialists' accent) wherein normally accented words are pronounced as unaccented within a certain group such as, for example, tennis players or musicians (Kawahara 2015:459). Interestingly, the deaccenting of quadromoraic words is in fact an increasing phenomenon (Labrune 2012:184 ff.).

Labrune (2012:255) points out something relevant regarding the different accent patterns in Japanese dialects, namely that, despite the rather big differences between different systems “[...] a given word class with the same accent pattern in one dialect will generally correspond to one common other pattern in some other dialect in a consistent manner.” A good example would be Tokyo Japanese and Kansai-*ben* ‘Kansai dialect’. Kansai-*ben* does not refer to just one dialect but rather a few dialects around the area of Kyoto. These are Osaka Japanese, Kyoto Japanese, Kameyama Japanese, and Kochi Japanese (Haraguchi 2017:3). Labrune (2012:255) provides a few examples of mirroring nouns between Tokyo Japanese and Kyoto Japanese:

Tokyo dialect: *ha.shi* ‘bridge’, *ha.na* ‘flower’, *ya.ma* ‘mountain’

Kyoto dialect: *ha`.shi* ‘bridge’, *ha`.na* ‘flower’, *ya`.ma* ‘mountain’

Haraguchi (2017:25 ff.) draws further comparison between Tokyo Japanese and Osaka Japanese (as a representative of the Kansai-*ben* dialects) and points out their similarities (and dissimilarities), the most relevant one here being that Osaka Japanese also separates adjectives into two groups. These are the HL and the LHL groups. However, even though these are two different patterns, adjectives tend to display the HL pattern in lexical form<sup>8</sup>, with the actual LHL pattern appearing in certain inflections such as the past tense (Haraguchi 2017:25 ff.).

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<sup>7</sup> More recent primarily English loanwords

<sup>8</sup> Save for *ee* (*yoi*) ‘good’.

See the example below for a comparison of two accented adjectives in Osaka Japanese and Tokyo Japanese.

**Osaka (Kansai)**

a`kai 'red'

ta`kai 'high'

**Tokyo**

aka`i 'red'

taka`i 'high'

## 2 Background

This chapter explains the pitch accent in more detail regarding specific lexical categories. Firstly, in 2.1 we will look at nouns as they provide the ground rules for the compound accent. The compound accent, investigated in 2.2, is in turn relevant to consider together with adjectives, since a rule, or rather a predictive criterion, has been formulated based on them which might be applicable to adjectives as well. Following this, in 2.3 adjectives and verbs are explained together as they have some morphological and accentual similarities. Lastly, the research that this thesis primarily builds upon is presented in detail in section 2.4 *Previous Research*.

### 2.1 Nouns

Most accented nouns are accented on the antepenultimate mora. In the case of Sino Japanese (SJ) nouns, based on a corpus containing 3-mora-long words created by Kubozono (2008:170), 95% follow this rule. Only 2% are accented on the penultimate (2<sup>nd</sup> from the right) and 3% on the final. In contrast, 59% native words are accented on the antepenultimate mora and 33% on the penultimate.

96% of the accented loanwords are accented on the antepenultimate, making it the largest group of its kind (nouns accented on the antepenultimate) according to the above-mentioned corpus. The antepenultimate accent rule (AAR), or the antepenultimate rule (cf. Kubozono 2018:168), has been proposed as the standard accentuation procedure for these words (See Kawahara 2015:454; cf. Labrune 2012:201). The same rule is true for native words, although the statistics might suggest otherwise at first glance. The reason as to why the frequency of accented loanwords is higher than that of native words is simply due to the syllabic nature of these two types of words (cf. Kubozono 2006, 2015b:344 f.). Loanwords in Japanese often contain epenthetic<sup>9</sup> vowels, which in turn causes them to have a syllabic structure that agrees with AAR more often than the structure of native words do (Kubozono 2008:182-184). Since the same rule is true for native words, it can be said that, while the reason for accent appearing in loanwords has been widely discussed, it seems that loanwords follow the same accent rule as the native words. In sum, while the accent location has been considered unpredictable, AAR might be true for native words, SJ-nouns, and loanwords.

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<sup>9</sup> See (Kubozono 2008:182-184).

## 2.2 Compounds

The accent of compounds is a thoroughly researched and discussed area. Attempts to explain their accent pattern have resulted in a rather long list of rules which we will look at below.

The accent differs according to both the accentedness/unaccentedness of the words the compounds consist of (Noun 1, or N1, and Noun 2, or N2), the location of these accents, and the length of the involved words (cf. Tsujimura 2014:86-96). The pitch accent also varies according to what type of compound one is investigating (cf. Labrune 2012:216-248). As it would be far too large a project to consider all types of compounds here, we will primarily consider modifier-head compounds such as ‘*denwa*’-*ki*’ (telephone machine) (cf. Labrune 2012:216).

Just as in the case of the AAR where the accent is dependent on the distance from the rightmost edge of a word, the accent of compound words looks to the right. The accent of the rightmost word is normally preserved, unless said accent is on the final syllable of a word, which is known as the “non-finality constraint” (Kubozono 2018:173). If there is no accent on the rightmost word (N2), or if there is an accent that cannot be preserved, then “[...] a default compound accent emerges on the rightmost, non-final bimoraic foot of the compound.” (Kubozono 2018:173). An example would be<sup>10</sup>:

(4a) Me<sup>ˈ</sup>.ro.n+pa<sup>ˈ</sup>n → Me.(ro<sup>ˈ</sup>.n)-(pa.n)  
‘Melon+Bread → Melon flavoured bread’

(4b) Ku<sup>ˈ</sup>.ro+ga.ra.su → Ku.ro-(ga<sup>ˈ</sup>.ra).su  
‘Black+glass → Black glass

In addition to this generalisation, two accent patterns can be observed; one for those with a short N2 (monomoraic or bimoraic) and one for those with a long N2 (See Kawahara 2015:460-464; Kubozono 2015a:26). The short group has two sub-patterns: Pattern (1): the accent of N2 is retained as in *niho*<sup>ˈ</sup>n+*sa*<sup>ˈ</sup>ru→*nihon*-*za*<sup>ˈ</sup>ru ‘japan monkey’<sup>11</sup> and (2) the accent appears on the last syllable of N1 as in *ma*<sup>ˈ</sup>igo+*inu*<sup>ˈ</sup>→*maigo*<sup>ˈ</sup>-*inu* ‘lost puppy’ (Kawahara 2015:461). How it is decided which compounds retains their accent is debated. Kawahara (2015:462) notes that in the case of the retained N2 accents, they all have an accent on their penultimate syllables. In other words, if the N2 word, when it stands alone, is accented on the

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<sup>10</sup> Examples taken from Kubozono (2018:174).

<sup>11</sup> The *sa* becoming *za* is due to a phenomenon known as *rendaku*, or ‘sequential voicing’ (see Tsujimura 2014:56-65; Kubozono:2015a for more on this).



penultimate syllable, it seems more likely to retain said accent if it is a part of a compound. Consequently, the non-retained ones either had an accent on the final syllable or no accent. It has also been noted that a lot of N2s which retain their accent are loanwords, which might be due to a faithfulness effect to loanwords, or in other words, the pronunciation of the original word might affect how the loaned version of that word is pronounced. Additionally, SJ words almost always lose their accent (Kawahara 2015:462). When both N1 and N2 are bimoraic, so that the compound becomes quadromoraic, unaccented outcomes occur (Kawahara 2015:461). Note that this follows the trend of quadromoraic words being unaccented.

In long (trimoraic and longer) N2s: “[...] if N2 is unaccented or has accent on the final syllable, then the accent falls on the initial syllable of N2[...] otherwise, the accent of N2 is retained[...]” (Kawahara 2015:453). In the case of N2s with penultimate accent there is variation.

The number of (seemingly) irregular compounds has been problematic. An attempt to solve their mystery has been proposed by Kubozono (2015b:347 ff.) where he attempts to create a unifying explanation through optimality theory (OT). In OT one sets up a set of constraints that a language seemingly has and ranks them according to how bad it is to break them. The best outcome is the one that breaks the least important and fewest number of constraints. Kubozono’s OT account does correctly predict the accent of several nouns but results in some exceptions. Labrune (2012:228) proposes a modified theory using just feet and moras rather than involving the notion of the syllable (which Kubozono does), which successfully accounts for some of the problematic compounds. For details on this, the reader is referred to Labrune (2012:228-235).

### **2.3 Verbs and Adjectives**

Two types of adjectives and (generally) two types of verbs exist in Japanese. The two types of adjectives are the *i*-adjectives and the *na*-adjectives. The latter type shares similarities with both adjectives and nouns and is *de facto* called ‘adjectival noun’ (cf. Tsujimura 2014:137), sometimes referred to as ‘nominal adjectives’ (cf. Nishiyama 1999:184), while the former, which we are interested in here, functions more like its own lexical category. *Na*-adjectives, from here on adjectival nouns, are inflected using the copula *da* (also verb ‘to be’) and are within themselves rather morphologically simple (cf. Tsujimura 2014:138 f.). *I*-adjectives, from here on adjectives, in contrast, exhibit a complexity reminiscent of verbs in Japanese since both consist of a stem with an attached suffix (cf. Tsujimura 2014:131). In their lexical forms the suffix is monomoraic. For example, the adjective *akai* ‘red’ consists of a root *aka*

and suffix *-i*, and the verb *yomu* ‘to read’ of a root *yom* and suffix *-(r)u*. The verb in this example is a consonant ending verb. The other type of verb is the vowel ending one. An example would be *taberu* ‘to eat’ which can be described as *tabe -(r)u*. Following is an example of inflections of an adjectival noun (*genki* ‘Energetic’), two verbs (*yomu/taberu*), and an adjective (*akai*).

**Table 1:** Inflections of adjectival nouns and adjectives.

NPST	PST	NEG-NPST	GERUND
Genki-da Energetic-COP.NPST	Genki-da-tta Energetic-COP-PST	Genki-ja.na-i Energetic-COP.NEG-NPST	Genki-de Energetic-COP.GER
Aka-i Red-NPST	Aka-katta Red-PST	Aka-ku-nai Red-INF-NEG	Aka-ku-te Red-INF-GER

**Table 2:** Inflections of consonant ending and vowel ending adjectives

NPST	PST	NEG-NPST	GERUND
Yom-u Read-NPST	Yon-da Read-PST	Yoma-na-i Read-NEG-NPST	Yon-de Read-GER
Tabe-ru Eat-NPST	Tabe-ta Eat-PST	Tabe-na-i Eat-NEG-NPST	Tabe-te Eat-GER

In addition to the above-mentioned similarities, adjectives and verbs share some similarities regarding the accent. For example, they are either accented or unaccented and if accented, they display just one accentual pattern (Labrune 2012:197). That is, they are accented on the penultimate mora (Kubozono 2008:181). Moreover, most adjectives and verbs are accented (Tanaka and Kubozono 1999 as cited in Kubozono 2008:181; Taniguchi 1995:385).

Kubozono (2008:182) theorizes that this might be because the function of the accent in verbs and adjectives is to help parse these words into their two constituents. Below, we will look at the accent in more detail in verbs and adjectives, respectively.

### 2.3.1 Verbs

For verbs, there is an underlying accent specified within each root (if accented) in an unpredictable way. The location of the accent, however, is predictable (cf. Tsujimura 2014:99). “An accented verb root that ends with a consonant always has the accent on the syllable before the root final consonant; and a vowel-ending accented verb root invariably has the accent on the penultimate mora.” (Tsujimura 2014:99). Verb stems must have a suffix attached and certain suffixes can affect the location of the accent. The present tense suffix *-ru* shifts the accent location in accented vowel ending words so that for example *ta`be* results in

*tabe`ru*. Consonant ending roots remain unaffected. Other suffixes may not affect the accent, as is the case with the gerund form *te*, and others may affect the accent in a different way, such as the tentative form *-yoo* (cf. Tsujimura 2014:99-102). The *-masu* below is the polite affix in present tense.

**Table 3:** Accent pattern in inflections of consonant ending and vowel ending verbs

Verb	Root	-ru	-te	-yoo	-masu
Vowel	<i>ta`be</i>	<i>tabe`ru</i>	<i>ta`bete</i>	<i>tabeyo`o</i>	<i>tabema`su</i>
Consonant	<i>ka`er</i>	<i>ka`eru</i>	<i>ka`ette</i>	<i>kaero`o</i>	<i>kaerima`su</i>

### 2.3.2 Adjectives

Just as with compounds, with adjectives we end up with several rules depending on how an adjective is inflected. Accented adjectives are always accented while unaccented ones may appear as accented when certain suffixes attach. That is, in addition to (for some adjectives) permitting an unaccented alternative in lexical form. For example, *atsui* ‘thick’ is unaccented yet is pronounced with accent in the suspensive form (*atsu`kute*), the polite form (*atsu`i desu*), and the hypothetical form (*atsu`kereba*) (Labrune 2012:199). Adjectives, like verbs, have been analysed as having a lexically specified underlying accent on the root that is then affected by whatever suffix attaches to it (cf. Labrune 2012:196 ff.). However, this analysis may be inadequate as it results in some unexplained outcomes, both in the case of adjectives and verbs (cf. Labrune 2012:198). In a paper from 1967 Samuel E. Martin discusses this topic and notes unexplained accent shifts regarding adjectives in the *-ku* (infinitive) and *-sa* (nominalising) forms (Martin 1967: 260 f.). A few researches have held the view that, at the lexical level, adjectives are merely marked accented or unaccented without specifying a specific mora as the accent kernel, the specification then happens following a set of specific rules depending on how the adjective is inflected (cf. Labrune 2012:197).

Kubozono (2008) has challenged the traditional analyses of adjectives and holds that a rule can be generalized to predict the accent pattern in several lexical categories (while permitting some lexical exceptions). Kubozono has stated that “[...] what have been characterized as major accent rules in Tokyo Japanese – such as the loanword accent rule, compound accent rules, and the accent rule for verbs and adjectives – can be generalized.” (Kubozono 2008:166). The reason for verbs and adjectives appearing very different from nouns may be that they are morphologically more complex. Holding the suffix to be an N2 of a compound Kubozono applies the following rule: “a. Accent the rightmost, nonfinal foot (Nonfinality-foot, Edgemostness). b. Within the rightmost, nonfinal foot, accent the syllable

that is closer to the word-internal morpheme boundary (Align-CA).” (Kubozono 2008:179).

Implementing this, we get:

(6a) chi.no.mi+ko → chi.(no.mi)go ‘breastfeeding baby’

Observe the accent patterns of the verbs (a) and adjectives (b).

(6b) a. ha.shi.ru: hashi`r-u ‘run’    shi.ra.be.ru: shirabe`-ru ‘investigate’  
b. u.ma.i: uma`-i ‘tasty’        u.tsu.ku.shi.i: utsukushi`-i ‘beautiful’

## 2.4 Previous Research

It has been noted that hitherto considered unaccented adjectives seem to increasingly be pronounced as accented (Ishihara Shinichiro p.c.). This has previously been brought to attention by Akinaga (2002 as cited in Labrune 2012:196) as well as observed in more detail by, for example, Taniguchi (1995), who investigated the matter in a production study in 1993, which seems to be the latest existing research. In her paper, Taniguchi (1995:385) notes something interesting, namely that the number of adjectives listed in *Nihongo Akusento Jiten* [The Japanese Accent Dictionary] from 1991 and the ones listed in a textbook from 1981, called *Kyooshiyoo nihongo kyooiku handobukku 6 hatsuon* [Handbook of Japanese education for teachers 6 pronunciation] published by The Japan Foundation<sup>12</sup> and edited by Shigeo Imada, state a different total number of unaccented adjectives. While the more recent list from the dictionary lists a total of 27 adjectives, in the earlier textbook 30 can be found. This seems to suggest a decreasing number of unaccented adjectives.

Taniguchi’s own survey also shows that there is a difference between *rentaikei* (adnominal form) and *shuushikei* (lexical final form), a difference not normally accounted for when considering the accent pattern of adjectives in lexical form (cf. Labrune 196 ff.; cf. Hirayama, 1960:928; cf. Taniguchi:1995). I-adjectives look the same in final form, *shuushikei*, and adnominal form, *rentaikei*. In other words, *akai* all by itself in its final form is *akai* and in its adnominal form modifying a noun it is also simply *akai*<sup>13</sup>.

In addition to this it is noteworthy that according to Taniguchi’s results the accented adjective *atsui* ‘hot’ (temperature, day etc.) was pronounced as accented by just 63.01% of the participants when said adjective was in *rentaikei* (and 93.15% in *shuushikei*). This means that

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<sup>12</sup> 国際交流基金 *Kokusaikooryuu kikin*

<sup>13</sup> This was not always the case. However, to my knowledge this is not normally discussed with relation to the pitch accent in modern Japanese, presumably because there is little reason to suspect that this would have an impact on the accent today. To be clear, *rentaikei/shuushikei* here refer to an adjectives syntactic position, not its morphological form.

it was, in *rentaikei*, pronounced as accented less often than both *iyashii* (82.19%), which was listed as both an accented and unaccented word in the dictionary Taniguchi used as reference, i.e. *zenkoku akusento jiten* from 1991, as well as *yoroshii* (79.45%) which was listed as unaccented. Regarding the results in general one can say that any adjective in *shuushikei* seems to prefer accented while they prefer no accent in *rentaikei*. One would have to look closer at accented adjectives to draw any clear conclusions, however, as the other accented adjective that appeared in the study, *aoi* ‘blue’, was clearly accented in both cases, *shuushikei* 98.63% and *rentaikei* 92.47%, in contrast to *atsui* which, as mentioned, was slightly less accented in *rentaikei*.

In total, Taniguchi investigated 32 words (see 1995:379 f.): 19 trimoraic words, 12 quadromoraic words, and 1 five-mora-long word. After considering the results of Taniguchi’s study an observation of interest occurred. Generally, quadromoraic words were less accented than trimoraic words<sup>14</sup>. Most of them were pronounced with accent by less than 10% of the informants, save for *iyashii* (i.ya.shi.i) and *yoroshii* (yo.ro.shi.i), as well as three others (not included in this study): *Ka.na.shi.i* ‘sad’ (12.33%), *tsu.me.ta.i* ‘cold’ (10.27%), and *o.mo.ta.i* ‘heavy’ (13.01%) (see Taniguchi 1995:379). This is not so unexpected as quadromoraic words tend to be unaccented, which we noted in 1.2 *Nouns* and 2.2 *Compounds*. On the opposite side, all trimoraic adjectives were pronounced with accent by more than 10%<sup>15</sup> of the informants, except for *to.o.i* (6.85%) (see Taniguchi 1995:380).

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<sup>14</sup> This was pointed out to me by Shinichiro Ishihara.

<sup>15</sup> The closest to 10% was *a.ka.i* ‘red’ at 10.27%.

### 3 Methodology

#### 3.1 Research questions

Based on the previous research, we might expect that the accented pattern in Japanese adjectives is spreading. Therefore, the first goal of this research is to investigate the acceptance for the accented pattern, and unaccented pattern, in unaccented adjectives today. Due to the difference between *rentaikei* and *shuushikei*, we also want to investigate if there is any difference between these positions. To investigate the suspicion that the accented pattern is spreading, we also want to ask the question if there is a connection between the age of the informants and their answers. Finally, since the length of a word seems to have an impact on the accent pattern in Japanese, which we noted in section 1.2, 2.2 and 2.4, we also ask the question if there is any difference between 3 and 4 mora long words.

1. How widespread is the accented pattern for unaccented adjectives today in Tokyo Japanese?
2. Is there a difference regarding *rentaikei* and *shuushikei*?
3. Is there a difference regarding age?
4. Is there a difference regarding 3 mora and 4 mora words?

#### 3.2 Method

To investigate the research questions a perception study in the form of a questionnaire was carried out. The informants were asked to listen to sentences containing the relevant adjective in *rentaikei* and *shuushikei*. These sentences appeared in a randomised order with each adjective pronounced unaccented, with initial accent or with penultimate accent. The initial accent should be very unnatural. If accented, adjectives are accented on the penultimate mora (Labrune 2012:197; Kubozono 2008:181). This also means that the two accented adjectives should be very unnatural when pronounced with initial accent.

After listening to the sentences, the informants would pick how natural each sentence sounded on a scale from very unnatural to very natural. The sentences were constructed to be as neutral as possible both regarding accent, i.e. the words appearing just after and before the adjective were as far as possible unaccented, and regarding the meaning. Sentences where the same adjective takes different meanings have been avoided. Additionally, the age and home prefecture were asked of the informants to be able to analyse any potential differences between different generations today, as well to compare the results of the current study with those of Taniguchi's study. At that time, Taniguchi's (1995:383) informants were all 18-19 years old which makes them 45-46 years old today (2020), and most of them were from The

Greater Tokyo area, or *Shutoken* (See. Taniguchi 1995:382). The current informants are from the same area, with some modification. While the informants that belonged to the *Shutoken* group in the earlier study were all from Tokyo, Saitama, Chiba, or Kanagawa prefecture, *Shutoken* itself refers to 1 city (Tokyo) and 7 prefectures: Tokyo city and Saitama, Chiba, Ibaraki, Gunma, Tochigi, Yamanashi, and Kanagawa prefecture. We can only assume that Taniguchi simply did not find any informants from the other prefectures.

When the informants answered the questions, the scale only showed the *totemo fushizen* ‘Very unnatural’ and *totemo shizen* ‘Very natural’ options, with the middle steps represented solely by numbers as shown below.

Very	1	2	3	4	5	Very
Unnatural						Natural

### 3.3 Limitations

This method was chosen since a questionnaire has potential to reach many informants in a short amount of time. A production study would potentially have yielded the same type of results as Taniguchi’s did, which would have produced a more exact follow-up investigation. However, it might also be intrinsically interesting to investigate the perception of the informants, and the current study also allows the informants to express their acceptance to more than one accent pattern. Furthermore, the use of Likert scale questions avoids the informants answering based on “correctness” rather than their actual intuition.

### 3.4 Stimuli

A total of 11 out of 32 adjectives, shown in the table below, from Taniguchi’s (cf. 1995:379 f.) study were chosen. They were chosen based on the following criteria:

1. 3 adjectives that most frequently were accented in *rentaikei* in Taniguchi’s results (group 1 in table 4 below)
2. 3 adjectives that least frequently were accented in *rentaikei* in Taniguchi’s results (group 2 in table 4 below)
3. 3 adjectives from the middle that were neither strongly accented nor unaccented in *rentaikei* in Taniguchi’s results (group 3 in table 4 below)
4. 2 accented adjectives for comparative purposes, both which appeared in Taniguchi’s study (group 4 in table 4 below).

The words were chosen based on these criteria firstly because *rentaikei* seemingly prefers unaccentedness to a greater extent than *shuushikei* does, as is apparent from the results of

Taniguchi’s (1995:379 f.) study (See table 4 below for these results). Secondly, due to the time limit as well as the limitations invoked by the fact that we are using a questionnaire to conduct the research, choosing words equally from top, middle, and bottom seemed the most reasonable as it gives us as wide a spread of adjectives as possible. Lastly, choosing the words in this manner (bottom, middle, top) resulted in a relatively good distribution of 3 and 4 mora words. Unlike Taniguchi’s (1993:397 f.) study, this study does not include the unaccented *atsui* ‘thick’, which means there are no minimal pairs present, *atsui* ‘thick’ and *atsu’i* ‘hot’ (e.g. day).

The following table shows Taniguchi’s (1995:379 f.) results regarding the words present in this study. Specifically, the number of informants that pronounced a certain word as accented in *rentaikei/shuushikei*.

**Table 4:** A summary of Taniguchi’s (1995:397 f.) results

<i>Adjective</i>	<i>Accent</i>	<i>Group</i>	<i>Rentaikei</i>	<i>Shuushikei</i>	<i>Gloss</i>
<i>iyashii</i>	Both	1	82.19% (120)	99.32% (145)	‘Lowly; Low’
<i>yoroshii</i>	Unaccented	1	79.45% (116)	96.58% (141)	‘Good’
<i>kemui</i>	Unaccented	1	42.47% (62)	89.04% (130)	‘Smokey’
<i>tsurai</i>	Unaccented	2	15.75% (23)	75.34% (110)	‘Hard; Trying’
<i>katai</i>	Unaccented	2	15.07% (22)	71.92% (105)	‘Firm; Loyal’
<i>arai</i>	Unaccented	2	13.70% (20)	69.86% (102)	‘Rough; coarse’
<i>oishii</i>	Unaccented	3	7.53% (11)	89.04% (130)	‘Delicious’
<i>tooi</i>	Unaccented	3	6.85% (10)	18.49% (27)	‘Far; Afar’
<i>abunai</i>	Unaccented	3	6.16% (9)	80.14% (117)	‘Dangerous’
<i>aoi</i>	Accented	4	98.63% (144)	92.47% (135)	‘Blue’
<i>atsui</i>	Accented	4	93.15% (136)	63.01% (92)	‘Hot’(e.g. day)



## 4 Analysis

In total, 40 informants took the survey. However, as several of these informants were from places not included in *shutoken*, one informant had sent two empty answer sheets, and another one had answered that Japanese was not their first language, the actual amount of informants relevant to investigate totals 28. These informants were between the ages 19-62. Only the results based on these 28 informants are analysed in this thesis.

The table below shows how many informants were from each prefecture/hometown included in *Shutoken*, sorted by total number of informants<sup>16</sup>.

**Table 5:** Informants per prefecture

<i>Location</i>	<i>Informants</i>
<i>Tokyo</i>	13
<i>Saitama</i>	5
<i>Kanagawa</i>	3
<i>Gunma</i>	2
<i>Yamanashi</i>	2
<i>Ibaraki</i>	2
<i>Chiba</i>	1
<i>Tochigi</i>	0

### 4.1 Accentedness in *rentaikei* and *shuushikei*

From here on, the results are presented using stacked diagrams. In this section, we will concern ourselves with the difference between *rentaikei* and *shuushikei*. Table 6 and 7 below present the results regarding the penultimate accent in adjectives<sup>17</sup>. The number in the parenthesis below each word indicates which group they belong to.

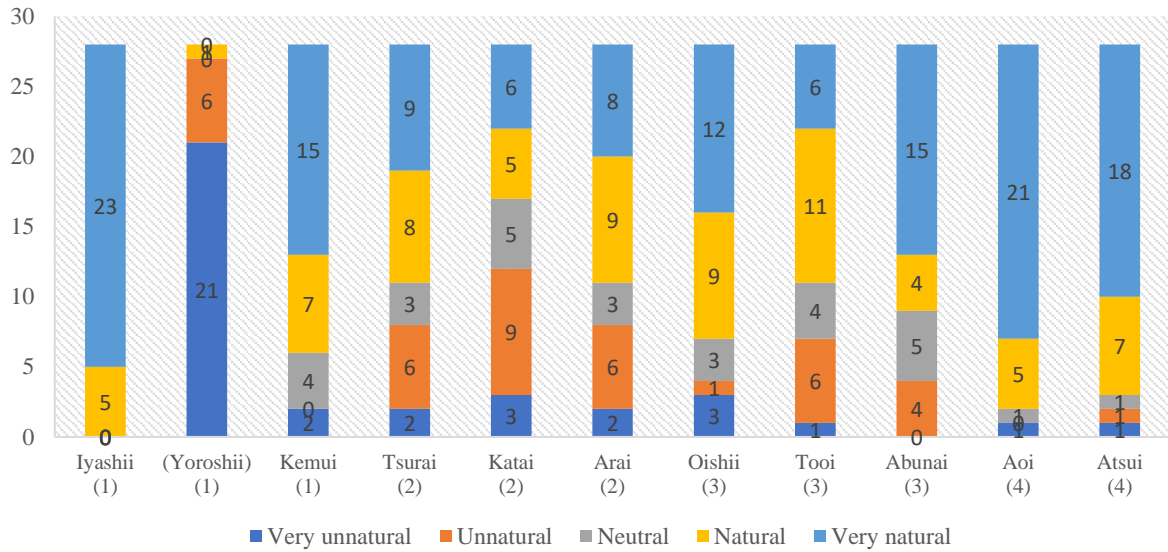
Already, one might say that there is indeed a rather obvious difference between *rentaikei* and *shuushikei*. It is apparent that an overall preference for accentedness in *shuushikei* is present. This is not only in line with earlier research but also tells us something new about these positions. Namely, since the current study is a perception study, this tells us that the perceptive acceptability for accentedness in *shuushikei* is vastly higher than it is in *rentaikei*, something that the earlier study could not tell us. Even in cases wherein an adjective is rather unacceptable with accent in *rentaikei* (group 2, 3), it is still acceptable in *shuushikei*.

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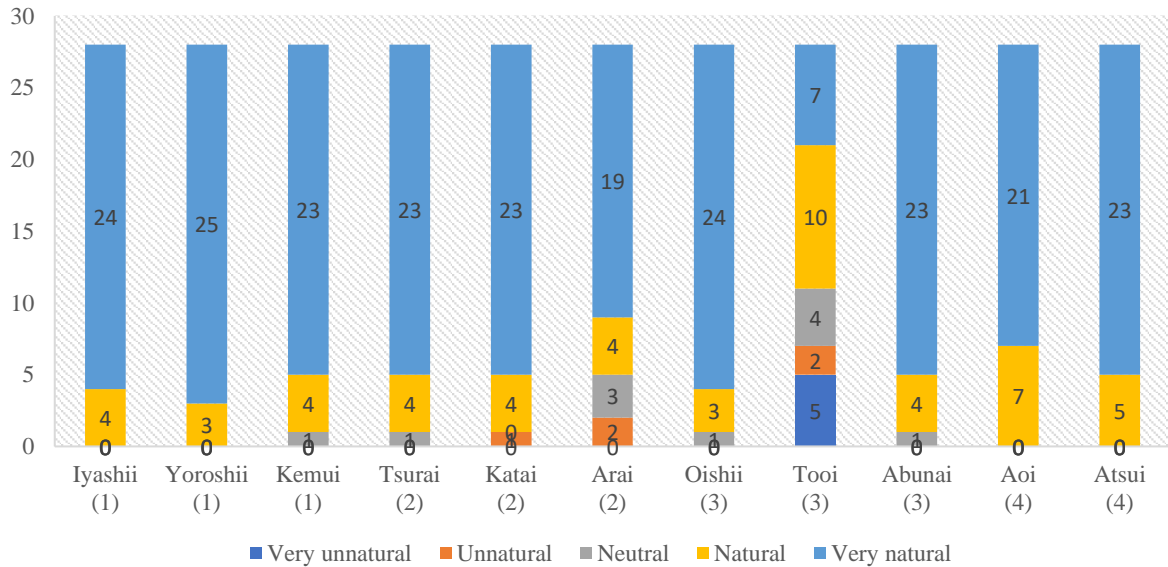
<sup>16</sup> A more detailed list of the informants can be found in the appendix.

<sup>17</sup> These results are presented differently in the appendix, including percentage, for those who have a hard time seeing the numbers here.

**Table 6: Rentaikei Penultimate Total Results**



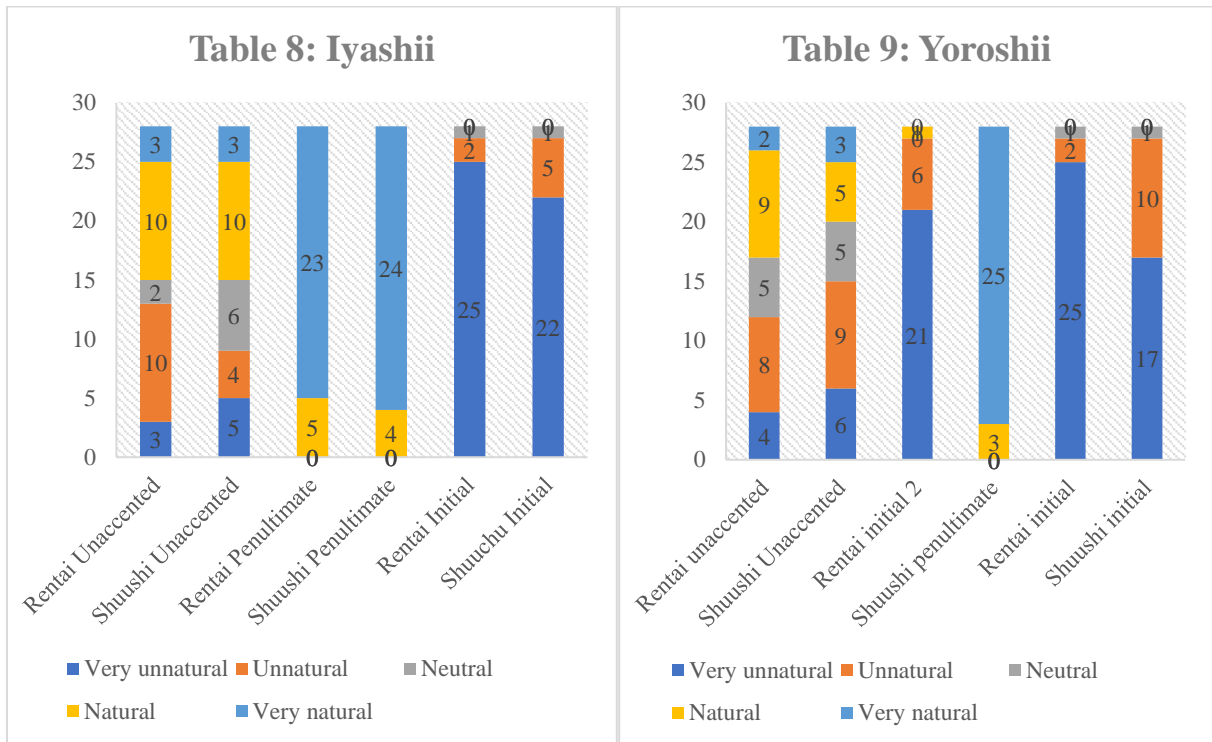
**Table 7: Shuushikei Penultimate Total Results**



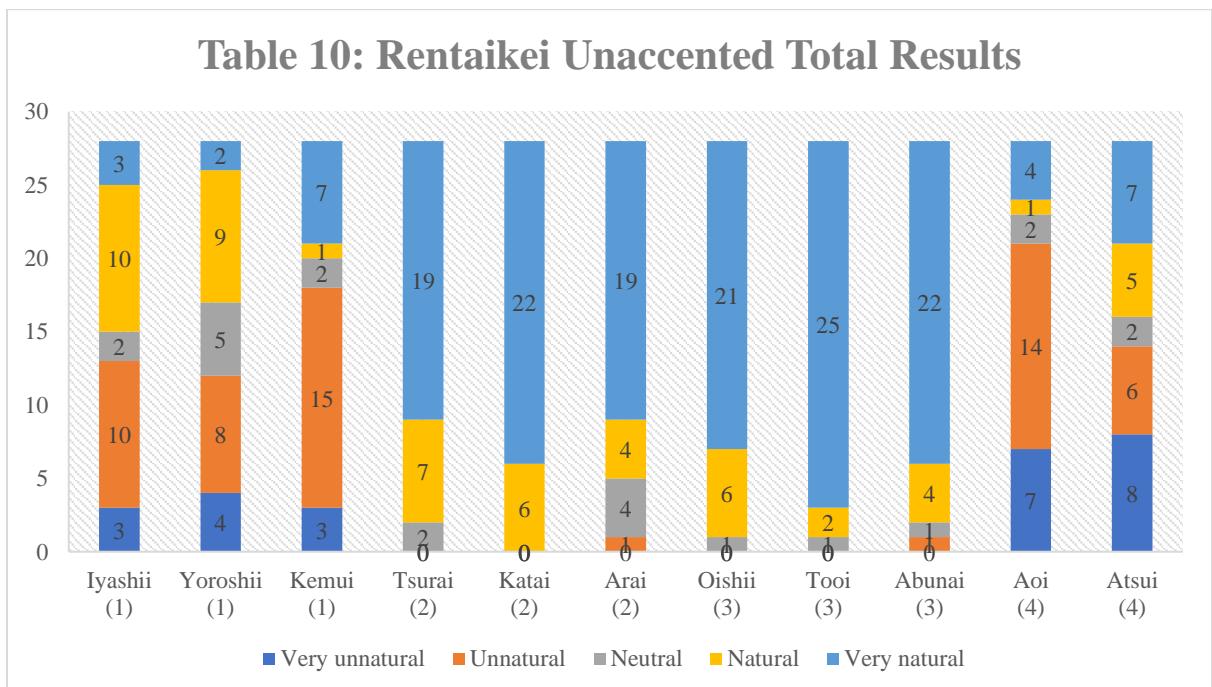
Here a very important thing must be noted regarding *yoroshii*. We might have expected *yoroshii* to be perceived as very natural with a penultimate accent in *rentaikei*, based on the previous results (see table 4). Contrary to expectation, however, 21 people answered that it sounded very unnatural. Regrettably, this is due to a human error wherein the same audio file playing *yoroshii* with initial accent appeared twice in the survey. Observing the other results regarding *yoroshii*, they seem rather like those of *iyashii*.<sup>18</sup> If we speculate for a bit about

<sup>18</sup> There is also something noteworthy about *iyashii*. As mentioned, *iyashii* was pronounced as accented more often than *aoi* according to the earlier study (see table 4). In this study, it was perceived as sounding more natural than both *aoi* and *atsui*. This is also true in *shuushikei*.

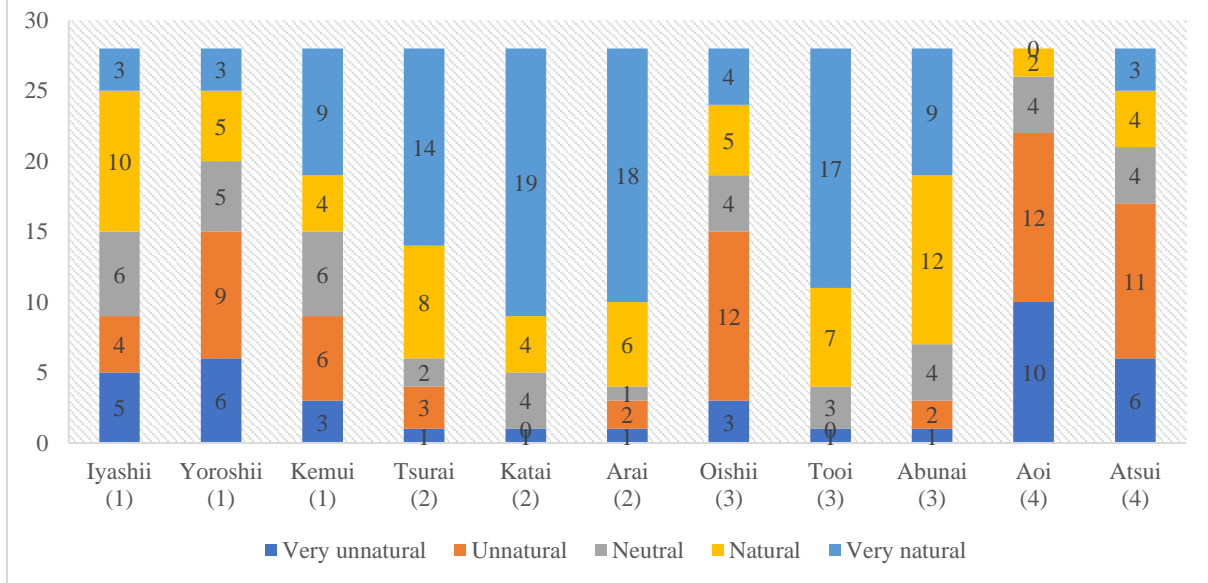
what the results regarding *yoroshii* in *rentaikei* with penultimate accent might be, the above results suggest that *yoroshii* might have been at least equally as natural as *iyashii* was. Moreover, *yoroshii* was deemed more natural in *shuushikei* with penultimate accent, if by a very small bit, and less natural unaccented in both *rentaikei* and *shuushikei*, also if by a small bit. Diagram 8 and 9 below show the results for *iyashii* and *yoroshii*.



Moving on, the total results for the unaccented pattern is presented in table 10 and 11 below.



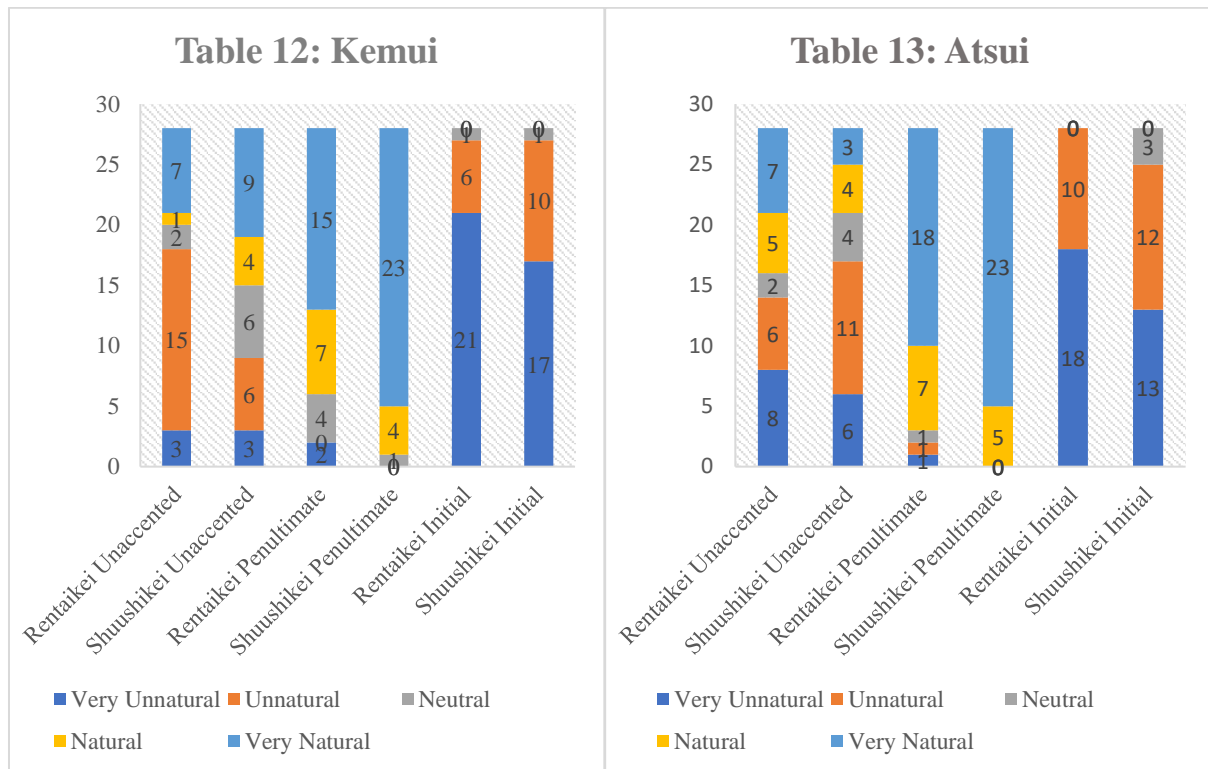
**Table 11: Shuushikei Unaccented Total Results**



Here one can see that the acceptability for unaccentedness is again slightly lower in *shuushikei*, although some adjectives have more striking results than others. It might be interesting to take a moment to ponder the question of when, based on these types of results, we can say that an adjective is an accented adjective or not. It would depend not only on how natural it sounds with accent but also on how natural it sounds without accent. Of course, it would also depend on how an adjective is de facto pronounced. We might split the adjectives into two groups of five, setting aside *oishii* temporarily. The first group would be the accented one, containing *aoi*, *atsui*, *iyashii*, *yoroshii*, *kemui*, and the second would be the unaccented one, containing *tsurai*, *arai*, *katai*, *abunai*, and *tooi*. These groups seem to agree rather well with the results in both table 8 and 9, as well as 10 and 11. Based on the perception of these informants, we might thus guess that *kemui*, *iyashii*, and *yoroshii* all belong to the accented category, although the proof for this would be stronger with production research.

Note that, while neither *abunai* nor *oishii* are far behind on sounding natural accented according to table 6 and 7, they also sound overwhelmingly natural when unaccented in *rentaikei* (see table 10), a trait not shared with the accented group. Since accented adjectives do not permit exceptions (see Labrune 2012:199), this might rule them out of the accented group. However, one can say that the results regarding *oishii* and *abunai* in *rentaikei* with a penultimate accent are particularly interesting considering that (1) they are quadromoraic words and, (2) they belong to group three which was the least accented group. It is also interesting that both *aoi* and *atsui* also received some number of unnatural votes. *Atsui* seems

to be particularly ambiguous, and its results resembles those of *kemui* (See table 12 and 13 below).



## 4.2 The Initial Accent

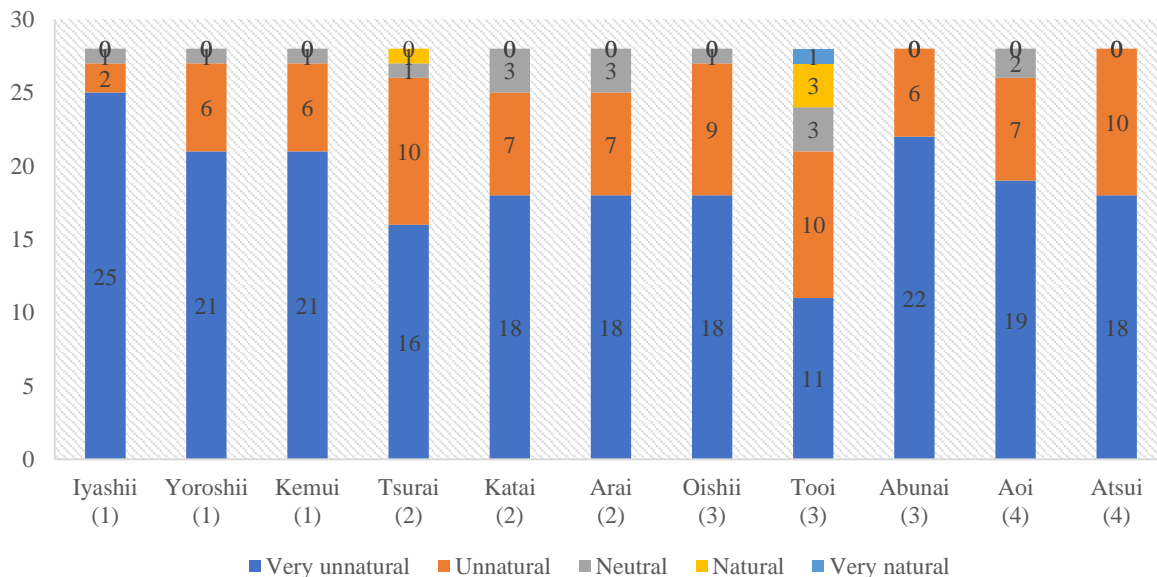
The initial accent has, according to expectation, largely been felt as either very unnatural or just unnatural, with a few exceptions<sup>19</sup>. A word of interest might be *tooi*, as it has the most widespread results regarding the initial accent. The only word other than *tooi* to be deemed anything other than neutral, unnatural, or very unnatural in *rentaikai* was *tsurai*. Note that the potential rule, or perhaps prediction, of the accent pattern of adjectives mentioned in section 2.2 *Compounds* does not predict the initial pattern for adjectives in lexical form. Had the results showed that the initial pattern was natural this might have suggested that Kubozono's (2008:166) rule is false. While *tooi* showed rather high results, it is possible that *tooi* should be regarded as an exception.

Returning to the discussion about perceptive acceptability for accentedness in *shuushikei*, further analysis reveals that the same trend can be seen in the results regarding the initial accent as well. One might wonder if this happens due to the greater preference for

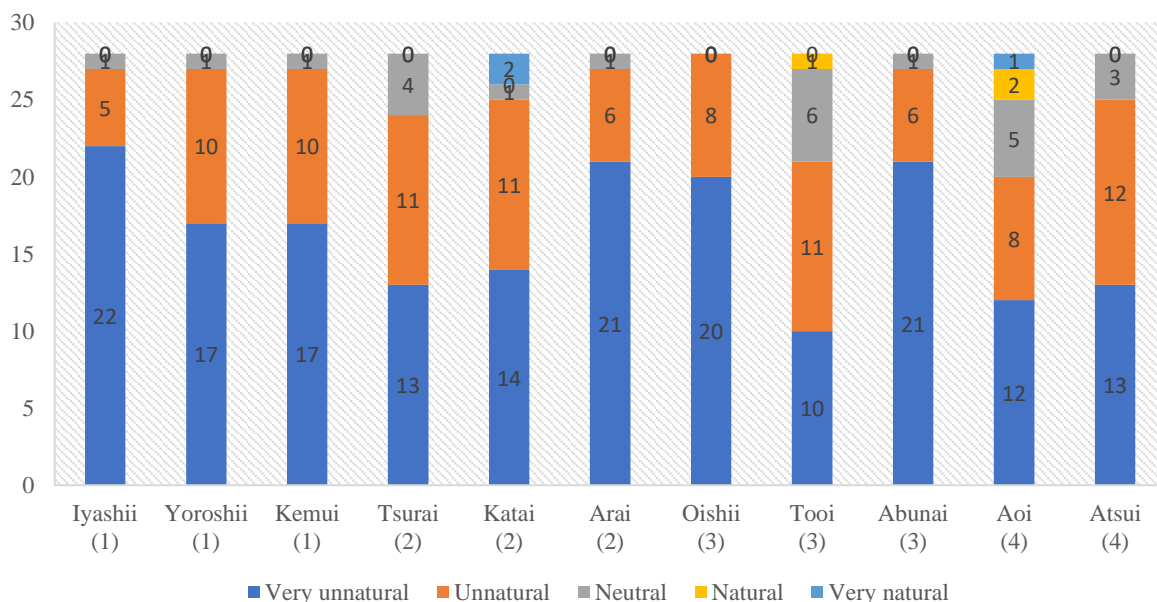
<sup>19</sup> One informant commented that they are answering number 3, neutral, to all questions that sound like Kansai-*ben* and was, according to their comment, being consistent in answering neutral to all Kansai-*ben* sounding questions, save for a few. These were *tooi* (*shuushikei*, unnatural), *oishii* (*shuushikei*, unnatural), *kemui* (*shuushikei*, very unnatural), *abunai* (*rentaikai*, unnatural), and *atsui* (*rentaikai*, unnatural).

accentedness in *shuushikei* so that the acceptability for an incorrect accent pater is higher in *shuushikei* than in *rentaikai*.<sup>20</sup>

**Table 14: Rentaikai Initial Total Results**



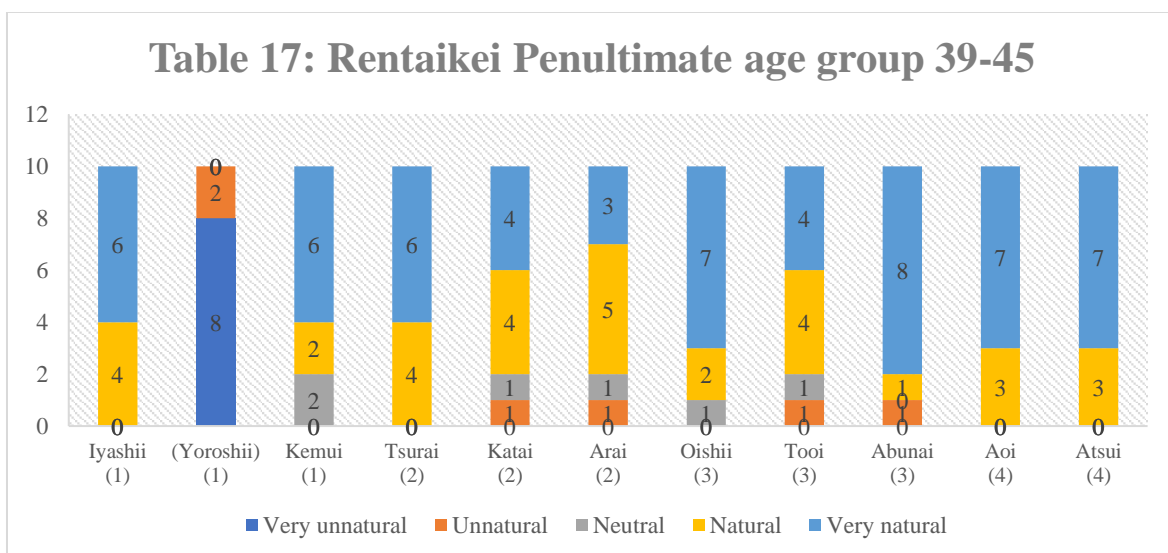
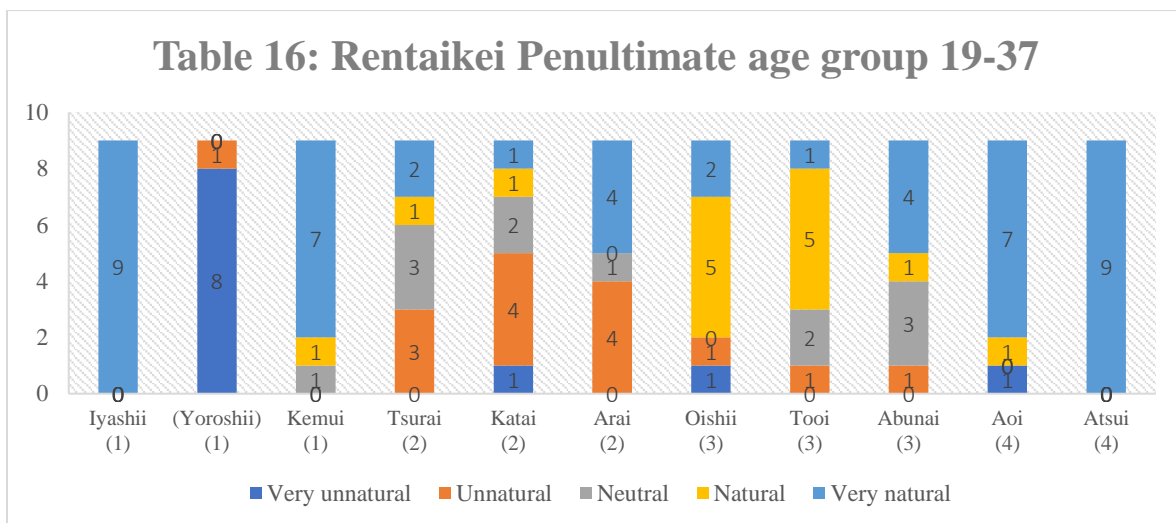
**Table 15: Shuushikei Initial Total Results**



<sup>20</sup> A few informants, three in total, commented that the initial pattern questions sounded like *Kansai-ben*. If we recall the comparisons made between *Kansai-ben* and Tokyo Japanese (section 1.2), this is not particularly surprising as the accent of adjectives in lexical form in *Kansai-ben* display the initial pattern.

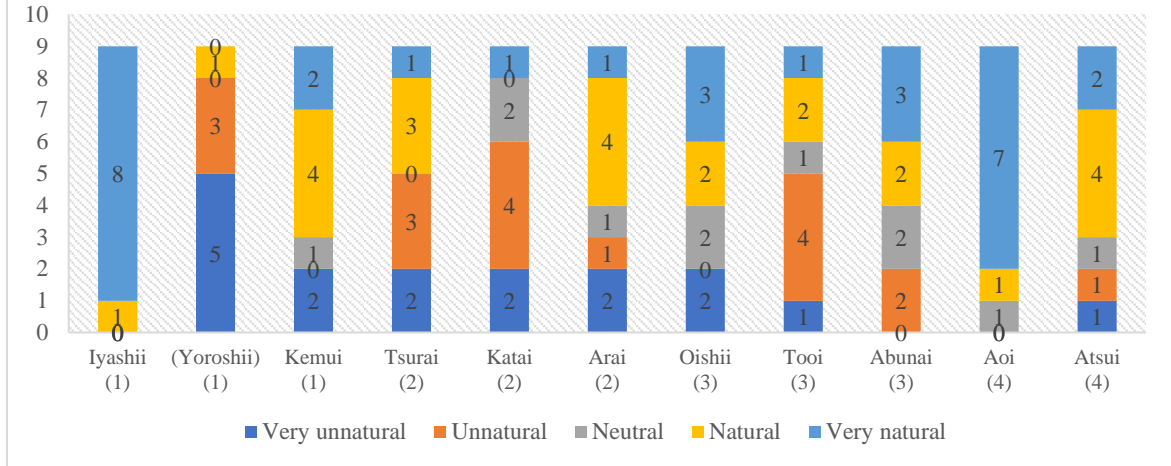
### 4.3 Then and now: The current results

When comparing the results between different age groups, about a third of the informants at a time (9, 10, and 9), the results show, in both *rentaikei* and *shuushikei*, a slight increase in naturalness regarding the penultimate accent as the informants get younger. However, the middle group found the accented pattern most acceptable overall. A closer look also reveals that certain words seem slightly more or less preferred with or without accent within a certain age group. When comparing table 16 and 17 below, regarding the penultimate accent in *rentaikei*<sup>21</sup>, one may note that the middle age group (Table 17) found both *oishii* and *tsurai* more natural with a penultimate accent than the youngest age group (Table 16) did. However, the youngest age group instead found *kemui* to be more natural than the middle group did.



<sup>21</sup> No particularly interesting pattern was noted regarding *shuushikei* and thus the results will not be presented here. Instead, please refer to the appendix.

**Table 18: Rentaikei Penultimate age group 47-62**



#### 4.4 Then and now: The current and previous results

The tables below compare the current results with Taniguchi’s (1995:397 f.). In the *rentaikei now* column, the first numbers are the result of answer 5, very natural, and the second numbers are the result of answer 4, natural. First, we will consider just the numbers representing answer 5. Note that the results for *iyashii* are almost the same. Perhaps this is a good argument for the accuracy of the results or, at least, a sign that we may draw some comparison with Taniguchi’s (1995) study. Additionally, a noteworthy aspect is that all unaccented adjectives, save for *yoroshii*, show a higher result in this study than in Taniguchi’s (1995:397 f.). Lastly, it is interesting that *aoi* and especially *atsui* have such low results in the current study, considering Taniguchi’s (1995:397 f.) results suggest that a vast majority pronounce these adjectives with penultimate accent. Therefore, one might expect them to also sound more natural than the current results suggest. Perhaps this is merely a sign that Taniguchi’s selection of informants (18-19-year-old female students) was slightly narrow. It might also mean that answer 4, natural, is a rather good indicator of an informant’s personal intuition, or that some informants recognized a difference between a “correct” answer versus what they personally felt sounded most natural. In such an analysis it would not be too unthinkable that *kemui*, *oishii*, and *abunai* all have an underlying result that differs from what can be seen here.

According to Taniguchi’s results, *tooi* was seldom accented overall, neither in *rentaikei* (6.85%, 10) nor *shuushikei* (18.49%, 27). Indeed, it was the least accented word in *shuushikei*, which is also true in this study. It is, however, at the same time rather interesting that more than half of the informants found *tooi* to sound at least natural in *shuushikei*.



**Table 19:** Taniguchi's (1995:397 f.) results and the current study's results regarding *rentaikei* with penultimate accent

<i>Adjective</i>	<i>Rentaikei then</i>	<i>Rentaikei now</i>	
<i>iyashii</i>	82.19% (120)	82.1% (23)	17.9% (5)
<i>yoroshii</i>	79.45% (116)	-	
<i>kemui</i>	42.47% (62)	53.6% (15)	25% (7)
<i>tsurai</i>	15.75% (23)	32.1% (9)	28.6% (8)
<i>katai</i>	15.07% (22)	21.4% (6)	17.9% (5)
<i>arai</i>	13.70% (20)	28.6% (8)	32.1% (9)
<i>oishii</i>	7.53% (11)	42.9% (12)	32.1% (9)
<i>tooi</i>	6.85% (10)	21.4% (6)	39.3% (11)
<i>abunai</i>	6.16% (9)	53.6% (15)	14.3% (4)
<i>aoi</i>	98.63% (144)	75% (21)	17.9% (5)
<i>atsui</i>	93.15% (136)	64.3% (18)	25% (7)

Now, we shall compare the results in *shuushikei*. Unlike the results for *rentaikei*, in *shuushikei* we see that the results were lower in this study, except for *tooi*, *abunai*, and *atsui*.

**Table 20:** Taniguchi's (1995:397 f.) results and the current study's results regarding *shuushikei* with penultimate accent

<i>Adjective</i>	<i>Shuushikei then</i>	<i>Shuushikei now</i>	
<i>iyashii</i>	99.32% (145)	85.7% (24)	14.3% (4)
<i>yoroshii</i>	96.58% (141)	89.3% (25)	10.7% (3)
<i>kemui</i>	89.04% (130)	82.1% (23)	14.3% (4)
<i>tsurai</i>	75.34% (110)	82.1% (23)	14.3% (4)
<i>katai</i>	71.92% (105)	82.1% (23)	14.3% (4)
<i>arai</i>	69.86% (102)	67.9% (19)	14.3% (4)
<i>oishii</i>	89.04% (130)	85.7% (24)	10.7% (3)
<i>tooi</i>	18.49% (27)	25% (7)	35.7% (10)
<i>abunai</i>	80.14% (117)	82.1% (23)	14.3% (4)
<i>aoi</i>	92.47% (135)	75% (21)	25% (7)
<i>atsui</i>	63.01% (92)	82.1% (23)	17.9% (5)

Following this, the same thing will be done but with just the results regarding the informants closest to 45-46 years old (9 informants in total). Most results seem to be slightly higher in this age group. *Iyashii*, *kemui* and *aoi* appear to have the most matching results. The results for *abunai* seem particularly high considering that just 6.16% of people pronounced it with accent in the earlier study. In fact, *abunai* and *atsui* have equally high results in this study.<sup>22</sup>

**Table 21:** Taniguchi’s (1995:397 f.) results and the current study’s results regarding *rentaikei* with penultimate accent in the same age group (i.e. those who were 19-20 years old then and who are 45-46 now)

<i>Adjective</i>	<i>Rentaikei then</i>	<i>Rentaikei now</i>	
<i>iyashii</i>	82.19% (120)	77.78% (7)	22.22% (2)
<i>yoroshii</i>	79.45% (116)	-	-
<i>kemui</i>	42.47% (62)	44.44% (4)	33.33% (3)
<i>tsurai</i>	15.75% (23)	44.44% (4)	33.33% (3)
<i>katai</i>	15.07% (22)	33.33% (3)	22.22% (2)
<i>arai</i>	13.70% (20)	33.33% (3)	33.33% (3)
<i>oishii</i>	7.53% (11)	66.67% (6)	(0%)
<i>tooi</i>	6.85% (10)	22.22% (2)	33.33% (3)
<i>abunai</i>	6.16% (9)	55.56% (5)	22.22% (2)
<i>aoi</i>	98.63% (144)	88.89% (8)	11.11% (1)
<i>atsui</i>	93.15% (136)	55.56% (5)	22.22% (2)

<sup>22</sup> It might be good to note that one informant, who was 47 years old and from Kanagawa, seems to have answered rather conservatively. They answered that *kemui*, *tsurai*, *katai*, *arai*, *oishii*, and *tooi* were very unnatural, and that *abunai* and *atsui* were unnatural. One might wonder if this has to do with their home prefecture being Kanagawa. However, no such pattern is found when considering the other informants from the same prefecture. Additionally, mentioned on page 24, only 3 informants in total are from Kanagawa. Therefore, it might be best to refrain from focusing too much on an analysis based on location.

## 5 Concluding Remarks

Ultimately, answering the question of how widespread the accented pattern is today is rather difficult, but the results have allowed for some interesting speculation. At the very least, the results do not seem to suggest that the accented pattern is decreasing. Our age based analysis through table 16 to 18 might suggest that, (1) some specific words are slightly more natural with accent to people of certain ages and (2), there is an overall slight increase in accentedness as people get younger, although the middle aged group showed the highest acceptance for accentedness in *rentaikei* overall.

Interestingly, as noted in the discussion above, there does seem to be a difference between trimoraic and quadromoraic words, albeit a rather unexpected difference as the quadromoraic words were quite acceptable with accent. Moreover, as it has, at least within certain groups of people, become more common to deaccent quadromoraic nouns (Labrune 2012:184 ff.), this suggests that accentedness is spreading in quadromoraic adjectives while it is simultaneously decreasing in nouns, which Labrune (2012:196) has also previously noted.

The most notable thing found in this study is that the perceptive acceptance for accent is evidently much higher in *shuushikei* than in *rentaikei*. Indeed, as noted in the discussion regarding the initial accent, one can even see a slight increase in naturalness when an adjective is pronounced with initial accent in *shuushikei*. Regardless of how any of these adjectives are de facto normally pronounced, I conclude the following: In Japanese adjectives, accent is almost always perceptually accepted in *shuushikei*. That is, of course, except for *tooi*, which might be a lexical exception to this rule. The preference for accentedness in *shuushikei* also seems to be prevalent regardless of the age of the informants.

In sum, the accented pattern in Japanese adjectives today is likely rather widespread. There may be a slight difference in how acceptable people of different ages find the accented pattern to be. Quadromoraic adjectives seem to be, rather unexpectedly, quite acceptable with accent. Finally, there is indeed a difference between *rentaikei* and *shuushikei*, which not only reinforces findings of previous production studies but also tells us something new, namely that there is always a very high perceptual acceptance for accent in *shuushikei*.

### 5.1 Future Research

The results show that future perception studies may want to take *rentaikei* and *shuushikei* into consideration, since these positions can have a great effect on their results, at least regarding adjectives. One might wonder, however, if there are other lexical exceptions, like *tooi*, to this newfound acceptability.

As the results regarding quadromoraic adjectives were rather unexpected, it might also be interesting to target these words more specifically. Not only the unaccented ones, but also the accented ones. An important thing to keep in mind is also the *rentaikei/shuushikei* difference since even this very small study shows the impact these positions have on the accent pattern.

In addition to these questions, I find often myself pondering if there is a difference in accentedness regarding the same adjective when it takes different meanings. For example, in this study *katai* appeared in sentences wherein it took on the meaning ‘strong’ or ‘sturdy’ regarding non-physical things, but one might also say that, for example, bread is *katai* and mean that it is difficult to chew. To my knowledge, no study has researched this specifically.

## References

- Féry, Caroline. 2017. *Intonation and Prosodic Structure*. Cambridge University Press.
- Gussenhoven, Carlos. 2004. *The phonology of tone and intonation*. Cambridge: Cambridge University Press. p. 1-11
- Haraguchi, Shosuke. 1999. 1. Accent. In Tsujimura, Natsuko (ed.) *The Handbook of Japanese Linguistics*. Oxford: Blackwell
- Kawahara, Shigeto. 2015. 11 The Phonology of Japanese Accent. In Kubozono, Haruo (ed.) *Handbook of Japanese Phonetics and Phonology*. Berlin/Boston: Mouton De Gruyter. p. 445-492
- Kubozono, Haruo. 2006. Where does loanword prosody come from?: a case study of Japanese loanword accent. In *Lingua 116(7)*. p. 1140-1170
- Kubozono, Haruo. 2008. Japanese Accent. In Miyagawa, S. and Saito, M. (eds) *The Oxford Handbook of Japanese Linguistics*. Oxford: Oxford University Press. p.165-192
- Kubozono, Haruo. 2015a. Introduction to Japanese Phonetics and Phonology. In *Handbook of Japanese Phonetics and Phonology*. Berlin/Boston: Mouton de Gruyter. p.1-42
- Kubozono, Haruo. 2015b. 8 Loanword phonology. In *Handbook of Japanese Phonetics and Phonology*. Berlin/Boston: Mouton De Gruyter. p. 313-362.
- Kubozono, Haruo. 2018. Pitch Accent. In Hasegawa, Yoko (ed.) *The Cambridge Handbook of Japanese Linguistics*. Cambridge: Cambridge University Press (Cambridge Handbooks in Language and Linguistics). p. 154-180
- Labrune, Laurence. 2012. *The phonology of Japanese*. Oxford: Oxford University Press
- Martin, Samuel E. 1967. On the Accent of Japanese Adjectives. In *Language*, Vol. 43, No. 1 (Mar., 1967): Linguistic society of America. p. 246-27 (2020-02-18)
- Nishiyama, Kunio. 1999. Adjectives and the copula in Japanese. In *Journal of East Asian Linguistics*, Vol. 8, No. 3 (Jul., 1999), Springer. p. 183-222
- Taniguchi, Sumiko. 1995. Keiyoshi akusento no Jittai Chosa [A survey of the condition of the accent of adjectives.]. In *Chofu Nihon Bunka [The Chofu's Japanese Culture]* Vol. 5 (Mar., 1995), p.386-370 (2020-02-18)

Tsujimura, Natsuko. 2014. *An introduction to Japanese linguistics*. 3. ed. Chichester: Wiley  
Blackwell

## Appendix

### Appendix 1: Contents of the survey

#### Sentences

平板型形容詞、連体形 Unaccented adjectives, <i>rentaikei</i>
あの人は <u>卑しい</u> 老人だ。Ano hito wa <u>iyashii</u> roojin da. 'That person is a lowly old man/woman'
今日は <u>よろしい</u> 日和でございます。Kyoo wa <u>yoroshii</u> hiyori de gozaimasu. 'Today is a beautiful day'
あれは <u>煙い</u> 客室だった。Are wa <u>kemui</u> kyakushitsu datta. 'That was a smoky hotel room'
テストで <u>難しい</u> 質問が出た。Tesuto de <u>muzukashii</u> shitsumon ga deta. 'A difficult question appeared on the test'
あれは <u>辛い</u> 経験だった。Are wa <u>tsurai</u> keiken datta. 'That was a taxing experience'
友達と <u>固い</u> 約束をした。Tomodachi to <u>katai</u> yakusoku o shita. 'I made a loyal promise to my friend'
これは <u>粗い</u> 布だ。Kore wa <u>arai</u> nuno da. 'This is a rough cloth'
目の前に <u>暗い</u> 森が広がっている。Me no mae ni <u>kurai</u> mori ga hirogatteiru. 'There is a dark forest spreading out in front of me'
昨日 <u>おいしい</u> ケーキを食べた。Kinoo <u>oishii</u> keeki o tabeta. 'I ate a delicious cake yesterday'
姉は <u>遠い</u> 所に住んでいる。Ane wa <u>tooi</u> tokoro ni sundeiru. 'My big sister lives far away'
ここには <u>危ない</u> 動物がいる。Koko ni <u>abunai</u> doobutsu ga iru. 'There are dangerous animals here'

平板型形容詞、終止形 Unaccented adjectives, <i>shuushikei</i>
あの人は <u>卑しい</u> 。Ano hito wa iyashii. 'That person is lowly'
今日の日和は <u>よろしい</u> 。Kyou no hiyori ha <u>yoroshii</u> . 'Today is a beautiful day'
内側は <u>煙い</u> 。Uchigawa wa <u>kemui</u> . 'It is smoky inside'
数学は <u>難しい</u> 。Suugaku wa <u>muzukashii</u> . 'Maths is difficult'

勉強は辛い。Benkyoo wa <u>tsurai</u> . 'Studying is hard'
姉との友情は固い。Ane to no yuujoo ha <u>katai</u> . 'My friendship with my sister is loyal'
この砂は粗い。Kono suna wa <u>arai</u> . 'This sand is rough'
建物の中は暗い。Tatemono no naka wa <u>kurai</u> . 'The inside of the building is dark'
飴はおいしい。Ame wa <u>oishii</u> . 'Sweets are tasty (I like sweets)'
出身は遠い。Shusshin wa <u>tooi</u> . 'My hometown is far away'
火遊びは危ない。Hiasobi wa <u>abunai</u> . 'Playing with fire is dangerous'

<b>起伏型形容詞、連体形・終止形</b> <b>Accented adjectives, <i>rentaikei</i>・<i>shuushikei</i></b>
連：昨日 <u>青い</u> 飴を食べた。Kinoo <u>aoi</u> ame o tabeta. 'Yesterday I ate blue sweets.'
終：その梅は <u>青い</u> 。Sono ume wa <u>aoi</u> . 'That plum is blue'
連：姉は <u>暑い</u> 庭にいる。Ane wa atsui niwa ni iru. 'My big sister is in the hot garden'
終：週末は <u>暑い</u> 。Shuumatsu wa <u>atsui</u> . 'The weekend is hot'

### The instructions for the survey

ここからは、全部の質問に答えてください。質問に全て答えるのに大体 10~15 分ぐらいかかります。音声を聞いて質問に答える調査ですので、あるなら、ぜひヘッドホンを使って下さい。

まず、数字の後に続く文を黙読（または音読）した後、その下の録音を再生して、聞いてください。Replay（もう一回見る）機能を使って聞き直しても構いません。そして文中の「」に書かれた言葉の自然さを判断して下さい。「とても不自然に聞こえる」から「とても自然に聞こえる」まで直感的に選んで下さい。正解も不正解もありません。

“From here, please answer all the questions. It takes about 10-15 minutes to answer all the questions. Since this survey includes audio clips, if you have any, please use headphones.

Please start with silently reading (or reading aloud) the sentence that follows the number, then play the recording below it and listen. You can use the replay function to listen again.



Then, judge the naturalness of the word written in “” in the sentence. Intuitively choose from ‘It sounds very unnatural’ to ‘It sounds very natural’. There are no right or wrong answers.”

## Appendix 2: Data in detail

### Rentaikei Penultimate

<i>Adjective</i>	<i>Group</i>	<i>Very unnatural</i>	<i>Unnatural</i>	<i>Neutral</i>	<i>Natural</i>	<i>Very natural</i>
<i>Iyashii</i>	1	-	-	-	5 (17.9%)	23 (82.1%)
<i>(Yoroshii)</i>	1	21 (75%)	6 (21.4%)	-	1 (3.6%)	-
<i>Kemui</i>	1	2 (7.1%)	-	4 (14.3%)	7 (25%)	15 (53.6%)
<i>Tsurai</i>	2	2 (7.1%)	6 (21.4%)	3 (10.7%)	8 (28.6%)	9 (32.1%)
<i>Katai</i>	2	3 (10.7%)	9 (32.1%)	5 (17.9%)	5 (17.9%)	6 (21.4%)
<i>Arai</i>	2	2 (7.1%)	6 (21.4%)	3 (10.7%)	9 (32.1%)	8 (28.6%)
<i>Oishii</i>	3	3 (10.7%)	1 (3.6%)	3 (10.7%)	9 (32.1%)	12 (42.9%)
<i>Tooi</i>	3	1 (3.6%)	6 (21.4%)	4 (14.3%)	11 (39.3%)	6 (21.4%)
<i>Abunai</i>	3	-	4 (14.3%)	5 (17.9%)	4 (14.3%)	15 (53.6%)
<i>Aoi</i>	4	1 (3.6%)	-	1 (3.6%)	5 (17.9%)	21 (75%)
<i>Atsui</i>	4	1 (3.6%)	1 (3.6%)	1 (3.6%)	7 (25%)	18 (64.3%)

### Shuushikei Penultimate

<i>Adjective</i>	<i>Group</i>	<i>Very unnatural</i>	<i>Unnatural</i>	<i>Neutral</i>	<i>Natural</i>	<i>Very natural</i>
<i>Iyashii</i>	1	-	-	-	4 (14.3%)	24 (85.7%)
<i>(Yoroshii)</i>	1	-	-	-	3 (10.7%)	25 (89.3%)
<i>Kemui</i>	1	-	-	1 (3.6%)	4 (14.3%)	23 (82.1%)
<i>Tsurai</i>	2	-	-	1 (3.6%)	4 (14.3%)	23 (82.1%)
<i>Katai</i>	2	-	-	1 (3.6%)	4 (14.3%)	23 (82.1%)
<i>Arai</i>	2	-	2 (7.1%)	3 (10.7%)	4 (14.3%)	19 (67.9%)
<i>Oishii</i>	3	-	-	1 (3.6%)	3 (10.7%)	24 (85.7%)
<i>Tooi</i>	3	5 (17.9%)	2 (7.1%)	4 (14.3%)	10 (35.7%)	7 (25%)
<i>Abunai</i>	3	-	-	1 (3.6%)	4 (14.3%)	23 (82.1%)
<i>Aoi</i>	4	-	-	-	7 (25%)	21 (75%)
<i>Atsui</i>	4	-	-	-	5 (17.9%)	23 (82.1%)

## Rentaikei Unaccented

<i>Adjective</i>	<i>Group</i>	<i>Very unnatural</i>	<i>Unnatural</i>	<i>Neutral</i>	<i>Natural</i>	<i>Very natural</i>
<i>Iyashii</i>	1	10.7% (3)	35.7% (10)	2 (7.1%)	10 (35.7%)	3 (10.7%)
<i>Yoroshii</i>	1	14.3% (4)	28.6% (8)	5 (17.9%)	9 (32.1%)	2 (7.1%)
<i>Kemui</i>	1	10.7% (3)	53.6% (15)	2 (7.1%)	1 (3.6%)	7 (7.1%)
<i>Tsurai</i>	2	-	-	2 (7.1%)	7 (25%)	19 (67.9%)
<i>Katai</i>	2	-	-	-	6 (21.4%)	22 (78.6%)
<i>Arai</i>	2	-	3.6% (1)	4 (14.3%)	4 (14.3%)	19 (67.9%)
<i>Oishii</i>	3	-	-	1 (3.6%)	6 (21.4%)	21 (75%)
<i>Tooi</i>	3	-	-	1 (3.6%)	2 (7.1%)	25 (89.3%)
<i>Abunai</i>	3	-	3.6% (1)	1 (3.6%)	4 (14.3%)	22 (78.6%)
<i>Aoi</i>	4	25% (7)	50% (14)	2 (7.1%)	1 (3.6%)	4 (14.3%)
<i>Atsui</i>	4	28.6% (8)	21.4% (6)	2 (7.1%)	5 (17.9%)	7 (25%)

## Shuushikei Unaccented

<i>Adjective</i>	<i>Group</i>	<i>Very unnatural</i>	<i>Unnatural</i>	<i>Neutral</i>	<i>Natural</i>	<i>Very natural</i>
<i>Iyashii</i>	1	5 (17.9%)	4 (14.3%)	6 (21.4%)	10 (35.7%)	3 (10.7%)
<i>Yoroshii</i>	1	6 (21.4%)	9 (32.1%)	5 (17.9%)	5 (17.9%)	3 (10.7%)
<i>Kemui</i>	1	3 (10.7%)	6 (53.6%)	6 (21.4%)	4 (14.3%)	9 (32.1%)
<i>Tsurai</i>	2	1 (3.6%)	3 (10.7%)	2 (7.1%)	8 (28.6%)	14 (50%)
<i>Katai</i>	2	1 (3.6%)	-	4 (14.3%)	4 (14.3%)	19 (67.9%)
<i>Arai</i>	2	1 (3.6%)	2 (7.1%)	1 (3.6%)	6 (21.4%)	18 (64.3%)
<i>Oishii</i>	3	3 (10.7%)	12 (42.9%)	4 (14.3%)	5 (17.9%)	4 (14.3%)
<i>Tooi</i>	3	1 (3.6%)	-	3 (10.7%)	7 (25%)	17 (60.7%)
<i>Abunai</i>	3	1 (3.6%)	2 (7.1%)	4 (14.3%)	12 (42.9%)	9 (32.1%)
<i>Aoi</i>	4	10 (35.7%)	12 (42.9%)	4 (14.3%)	2 (7.1%)	-
<i>Atsui</i>	4	6 (21.4%)	11 (39.3%)	4 (14.3%)	4 (14.3%)	3 (10.7%)

## Rentaikei Initial

<i>Adjective</i>	<i>Group</i>	<i>Very unnatural</i>	<i>Unnatural</i>	<i>Neutral</i>	<i>Natural</i>	<i>Very natural</i>
<i>Iyashii</i>	1	25 (89.3%)	2 (7.1%)	1 (3.6%)	-	-
<i>Yoroshii</i>	1	21 (75%)	6 (21.4%)	1 (3.6%)	-	-
<i>Kemui</i>	1	21 (75%)	6 (21.4%)	1 (3.6%)	-	-
<i>Tsurai</i>	2	16 (57.1%)	10 (35.7%)	1 (3.6%)	1 (3.6%)	-
<i>Katai</i>	2	18 (64.3%)	7 (25%)	3 (10.7%)	-	-
<i>Arai</i>	2	18 (64.3%)	7 (25%)	3 (10.7%)	-	-
<i>Oishii</i>	3	18 (64.3%)	9 (32.1%)	1 (3.6%)	-	-
<i>Tooi</i>	3	11 (39.3%)	10 (35.7%)	3 (10.7%)	3 (10.7%)	1 (3.6%)
<i>Abunai</i>	3	22 (78.6%)	6 (21.4%)	-	-	-
<i>Aoi</i>	4	19 (67.9%)	7 (25%)	2 (7.1%)	-	-
<i>Atsui</i>	4	18 (64.3%)	10 (35.7%)	-	-	-

## Shuushikei Initial

<i>Adjective</i>	<i>Group</i>	<i>Very unnatural</i>	<i>Unnatural</i>	<i>Neutral</i>	<i>Natural</i>	<i>Very natural</i>
<i>Iyashii</i>	1	22 (78.6%)	5 (17.9%)	1 (3.6%)	-	-
<i>Yoroshii</i>	1	17 (60.7%)	10 (35.7%)	1 (3.6%)	-	-
<i>Kemui</i>	1	17 (60.7%)	10 (35.7%)	1 (3.6%)	-	-
<i>Tsurai</i>	2	13 (46.4%)	11 (39.3%)	4 (14.3%)	-	-
<i>Katai</i>	2	14 (50%)	11 (39.3%)	1 (3.6%)	-	2 (7.1%)
<i>Arai</i>	2	21 (75%)	6 (21.4%)	1 (3.6%)	-	-
<i>Oishii</i>	3	20 (71.4%)	8 (28.6%)	-	-	-
<i>Tooi</i>	3	10 (35.7%)	11 (39.3%)	6 (21.4%)	1 (3.6%)	-
<i>Abunai</i>	3	21 (75%)	6 (21.4%)	1 (3.6%)	-	-
<i>Aoi</i>	4	12 (42.9%)	8 (28.6%)	5 (17.9%)	2 (7.1%)	1 (3.6%)
<i>Atsui</i>	4	13 (46.4%)	12 (42.9%)	3 (10.7%)	-	-

### Appendix 3: Informants

Age	Prefecture	Total
19	Saitama	<b>Total informants: 28</b>
20	Saitama	
20	Tokyo	<b>Total Tokyo: 13</b>
22	Tokyo	<b>Total Saitama: 5</b>
22	Gunma	<b>Total Kanagawa: 3</b>
30	Tokyo	<b>Total Gunma: 2</b>
32	Kanagawa	<b>Total Yamanashi: 2</b>
37	Saitama	<b>Total Ibaraki: 2</b>
37	Yamanashi	<b>Total Chiba: 1</b>
39	Tokyo	<b>Total Tochigi: 0</b>
39	Kanagawa	
40	Ibaraki	
41	Tokyo	
42	Tokyo	
42	Ibaraki	
43	Tokyo	
43	Yamanashi	
45	Chiba	
45	Saitama	
47	Tokyo	
47	Tokyo	
47	Kanagawa	
48	Tokyo	
48	Tokyo	
49	Saitama	
51	Gunma	
58	Tokyo	
62	Tokyo	

**Appendix 4: Penultimate accent and age -*shuushikei***

