

HEAVILY OCP-BASED INFLECTIONAL MORPHOPHONOLOGY OF THE SO-CALLED I-OCHI (/I/-DROP) IN JAPANESE*

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1. Introduction

Japanese is a typical head-final language in which tense is most often expressed at the end of a sentence in the form of morphological endings.

- (1) Nihon-go-wa shuyobu-ga bun-no owari-ni ku-ru.
Japan-language-TOPIC head-NOM sentence-GEN end-at come-PRES
“Japanese is a head-final language.”

However, there are some tenseless stem constructions in Japanese, setting aside such ones as imperatives. Japanese I-Ochi (/i/-Drop) Construction is such a case, and it is often discussed from a syntactico-semantic point of view these days. (e.g. Konno (2012))

- (2) a. akai “red” AkaQ! “(I recognize) It is this red!”
b. umai “tasty” UmaQ! “(I recognize) It is this delicious!”

The construction is often called I-Ochi (/i/-Drop) because the adjectival ending *-i* is dropped and is replaced with /Q/, the moraic consonant realized as a glottal stop at the utterance-final position.

The construction is often used as an expression of witnessing an event involving a temporal state. Thus, unlike ordinary *-i*-ending adjectives, the utterances in the right column of (2) only expresses an event that is currently occurring in front of the speaker, and the “subject” of the event is under the state in question only temporally.

In this paper, the author at first points out that the I-Ochi Construction is by no means /i/-Drop of any kind phonologically. Instead, the author states that it is an addition of /Q/-suffix that expresses eventual evidentiality that is involved in the construction. In this regard, the author points out that the construction can be made with other syntactic categories such as nouns, which never have an /i/-ending.

The author then discusses the details of the morphophonological patterns of the I-Ochi Construction, and argues that the suffixation of /Q/ is subject to Obligatory Contour Principle (McCarthy (1986)), and that, given this, /Q/ is not merely a blank moraic space in the morphophonological representation but a phoneme in Japanese in the sense of the notion archiphoneme as in Kuroda (1967). This in turn suggests that, at least for this construction, the distribution of the /Q/-suffix cannot be discussed in terms of the output patterns. Some sort of evaluation at the input level is required.

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For some reason that is beyond the scope of this paper, the /Q/-suffix in the so-called I-Ochi Construction cannot co-occur with an accent.⁴ This means that the /Q/-suffix in question is not merely an emphatic lengthening of a mora but is truly grammaticized morphophonological element.

The hypothesis that the unaccentedness is required for the /Q/-suffixation can be proven by another fact that, even for those stems that are prohibited because of accentedness, the I-Ochi Construction is allowed for if we pronounce the stem in an unaccented pattern.

(6) Accented Stems Pronounced Unaccented

a. Noun

mánia “mania” ?ManiaQ! “(I recognize) he is such a mania!”

b. Adjectival Noun

shízuka “quiet” ?ShizukaQ! “(I recognize) it is this quiet!”

c. Verbal Noun

bikkúri-suru “be surprised” ?BikkuriQ! “(I recognize) I am this surprised!”

The constraint is nothing semantic, because stems that are semantically close to those in (5) can occur in the I-Ochi Construction given that they are genuinely unaccented.

(7) Unaccentedness Licenses the I-Ochi Construction

a. Noun

otaku “geek” (unaccented) OtakuQ! “(I recognize) he is such a geek!”

b. Adjectival Noun

seijaku “quiet” SeijakuQ! “(I recognize) it is this quiet!”

c. Verbal Noun

kyoogaku-suru “be surprised”KyoogakuQ! “(I recognize) I am this surprised!”

In conclusion, the /Q/-suffix in the so-called I-Ochi Construction is a morphophonologically-constrained grammatical suffix in Japanese that expresses eventual evidentiality.

3. Why Adjectives Are Special

In the last section, the author has shown that the grammatical status of the /Q/-suffix is real. If this is the case, peculiarity of the so-called I-Ochi Construction must reside in the suffixation, not in the dropping of the /i/-suffix of adjectives. This leaves us with another question: Why, only in the case of adjectives, does /Q/-suffixation trigger an /i/-Drop? As deletion of any kind never occurs in the so-called I-Ochi Construction with stems in other syntactic categories, this fact remains to be a mystery.

To solve this problem, we have to carefully look at the pattern of Japanese verbal and adjectival conjugations. At the end of this section, the author concludes that /i/ in Japanese adjectives is not /i/ in its base form. Rather, it is a consonantal ending that is relevant, triggering an OCP violation when it co-occurs with the /Q/-suffix.

First, /i/ and /y/ are often in free variation relation, as in (8):

⁴ Most probably, unaccentedness is required for the /Q/ suffixation because the Q-suffix itself is accented. As the accent in Japanese is basically an High-Low tone sequence, the existence of another accent causes the violation of the Obligatory Contour Principle (= OCP: McCarthy (1986)).

- (8) a. i-u / yu-u “say”
 b. yo-i / i-i “good”
 c. iya-da / ya-da “dislike”

Second, in Japanese verbal endings, /k, g/ and /i, y/ alternate. (Ito and Mester (1986))

- (9) Japanese Verbal Conjugations: The Velar-Ending Paradigm
 a. kak-u “write” kai-ta “wrote”
 b. kag-u “smell” kai-da “smelt”

Moreover, there are no /y/ series in Japanese verbs whose consonantal ending is /y/. This makes us doubt if /k, g/ and /i, y/ are truly distinct in this particular morphological position. In the consonant-ending Japanese verbal stems, the permitted root-final consonants are /k, g, s, t, n, b, m, r, w/.⁵ Lack of /z/ and /d/, given that, in the Yamato (= native Japanese) classes of Japanese words, voiced obstruents are only allowed word-medially, suggests that the root-ending consonants are mostly identical with those that can start a word.⁶ This leaves us with a question of why only /g/ is an exception. The alternation above suggests that the /k, g/ series are in line with /y/, another dorsal consonant in Japanese that can begin a word. The /i/⁷ in the past tense form is a representation of dorsality, the distinctive feature of the consonants in question.

With this in mind, the following adjectival paradigm is of interest:

- (10) Japanese Adjectival Conjugations:⁸
 akai “is red” akak-at-ta “was red”
 umai “is tasty” umak-at-ta “was tasty”

/i/ at the end of Japanese adjectives are not suffix *per se*, but only a stem-ending realization of the original dorsal consonant /k/. The glide-obstruent alternation (Ito and Mester (1986)) can also be generalized to this case. When the adjectival stem must stand alone in the present tense, /k/ changes into /i/.

The observation above leads us to the following generalization, a part of which was already mentioned in Ito and Mester (1986).

⁵ /w/ and /b/ here most probably explain the non-existence of the /h/-ending roots. They are historically of the same origin.

⁶ As for /b/, see footnote 6. /r/ also cannot be positioned at the beginning of Yamato morphemes. The author would suggest that /r/ here is only an empty consonantal slot. /r/ appears only when a vowel follows it.

(i) tor-u “take”
 (ii) tor-anai “not take”
 (iii) tor-itai “want to take”

When a consonant appears after the /r/, the result is a geminate consonant without an /r/.

(iv) tot-ta “took”

Moreover, (ii) has a variant below, which occurs only with the /r/-ending paradigm.

(v) ton-nai “not take”

The author hypothesizes that /r/ here is only [+consonantal]. The features for /r/ is filled in only when it must be realized as an onset.

⁷ Or /y/, if the second mora in a diphthong is interpreted as a glide.

⁸ -At- is a remnant of *aru* “be” which were used as the auxiliary for adjectival/nominal conjugation of Japanese.

(11) In Japanese verbal and adjectival conjugational endings, /i,j/ and /k,g/ are in complementary distribution.

/i/ does not exist in the first place.

If this is correct, we can explain the difference between Adjectives and other syntactic categories in the so-called I-Ochi Construction. With other syntactic categories, the /Q/-suffix attaches to the stem, and the derivation ends.

(12) kandoo “impress” + -/Q/ → Kandoo-Q! “(I recognize) I am this impressed!”

However, as adjectives end with a consonant in their base forms, the stem-final consonant must be unrealized.

(13) akak “red (*akai* in the bare form)” + -/Q/ → akak-Q → Akak-Q!
 “(I recognize) it is this read!”

It is not /i/ but the stem-final /k/ that drops. This is due to a very general constraint on the Japanese syllable structure.

(14) *CC (OCP of double consonants)

Because /k/ and /Q/ are both consonants, /k/ must drop. Dropping /Q/ does not realize the /Q/-suffix and must be avoided. It is not a bare form, so the addition of a mora for /k/ to become /i,j/ is avoided to keep the size of the original stem.

4. Minimal Size of the Stem

Another piece of evidence that the so-called I-Ochi Construction is not adjective-specific is found in the size requirement of the /Q/-suffixation. Observe the following:

(15) yoi “good” *YoQ! “(I recognize) it is this good!”
 koi “dense” *KoQ! “(I recognize) it is this dense!” (cf. KooQ!)

The bimoraic adjectival stems do not allow for the /Q/-suffixation in question.⁹ This reminds us of bimoraicity requirement pertaining to the word size (Tateishi (1990)).

However, with monomoraic and bimoraic nominal stems, the /Q/-suffixation is grammatical.¹⁰

(16) ka “mosquito” KaQ! “(I have never seen) this many mosquitos!”
 ke “hair” KeQ! “(I recognize) this many pills on your sweater!”

⁹ As discussed above, the adjectival stems above are bimoraic because /i/ alternates with /k/ in the past tense and it persists throughout all conjugational patterns.

¹⁰ As for adjectival nouns and verbal nouns, monomoraic stems are mostly learned and do not fit in the context where the /Q/-suffixation is used, witnessing of the event which in most cases is colloquial.

(i) i “different” *IQ! “(I recognize) this is this different.

(ii) to-suru “bet” *ToQ! “(I recognize) that you’re betting your life!”

With bimoraic stems, however, we can find grammatical example.

(iii) jama “disturbing” JamaQ! “(I recognize) he is such an obstacle to you!”

(iv) kake-suru “bet” KakeQ! “(I recognize) he is betting his life this way!”

Thus, the two syntactic categories can be considered behaving in parallel with nouns.

- (17) yama “mountain” YamaQ! “(I recognize) it is this beautiful mountain!”
 hito “human” HitoQ! “(I recognize) there is such a crowd of people!”

The reason for the difference here is very simple. With nouns, the /Q/-suffixation merely adds another consonantal mora to the stem, so that, if the stem is bimoraic, the output is trimoraic, keeping the size of the base bimoraic stem.

However, with adjectives, as the final mora of the stem is consonantal in the base form, the addition of the /Q/ suffix makes the stem-final mora unrealized, due to the ban on the double coda consonants in Japanese (14). If the stem-final consonant is not realized, the stem reduces its size into monomoraic. The following generalization can be made.

- (18) Unless lexically specified, the minimal size of Japanese stems is bimoraic.

Bimoraic adjectival stems cannot undergo the /Q/-suffixation because the lexically-specified bimoraicity of itself is lost by this operation.

Interestingly, if the final consonantal mora of the stem is realized as /i/, the /Q/-suffixation is grammatical.

- (19) ii “good” IiQ! “(I recognize) this is so good!”
 koi “dense” KoiQ! “(I recognize) this is so dense!”

Also, the lengthening of the first mora of a bimoraic adjectival stem helps.

- (20) koi “dense” KooQ! “(I recognize) this is so dense!”

So far as the bimoraicity requirement is satisfied, the /Q/-suffixation can be applied to whatever syntactic categories, which gives no reason to separating the pattern with adjectival stems from others.

5. Loose Ban Against Double Geminates

Finally, another weak constraint on the /Q/-suffixation is introduced. With ordinary stems, the /Q/-suffix must be realized.

- (21) akai “red” AkaQ!/*Aka! “(I recognize) this is so red!”
 kandoo-suru “be impressed” KandooQ!/*Kandoo! “(I recognize) I am this impressed!”

However, if the stem itself contains /Q/, a moraic consonant, the /Q/-suffixation need not be realized.

- (22) a. kakkoi “handsome” ?KakkoiQ!, Kakkoi!, Kakke!, ?*KakkeQ!
 “(I recognize) he is such a handsome man!”
 b. suppai “sour” Suppa!, ?SuppaQ! “(I recognize) It is this sour!”
 c. mottainai “wasteful” Mottaina!, MottainaQ! “(I recognize) this is so wasteful!”

Although this is not a ban of /Q/-suffixation, the peculiarity of stems in (22) must be accounted for.

In relation to this, it is worth noting that Japanese has a constraint of the following kind for some lexical classes:

(23) *QQ (no double /Q/)

(23) applies to Japanese onomatopoeias at the root level:

(24) noso-noso nosso-nosso nosoQ-nosoQ *nossoQ-nossoQ “moving slowly”
 goku-goku, gokku-gokku, gokug-gokkuQ, *gokkuQ-gokkuQ “drinking something”
 BUT gokkun-gokkun

The morphophonemic forms of these words are as in (25), and the double /Q/ is blocked.¹¹

(25) no(Q)so(Q)

Thus, the constraint (23) is a real one in Japanese.

In the case of /Q/-Suffixation, this causes the non-realization of /Q/, but as an option. The difference lies behind the difference of the level at which the addition of /Q/ is applied. At the root level as in the case of onomatopoeias, (23) is an obligatory constraint that functions as the filter of ungrammatical forms.

However, at the stem-level as in the case of the /Q/-suffixation, the option arises among the following three:

- (26) a. Realization of the stem phonemes
 b. Realization of the suffix
 c. Both of the above

As the double /Q/ is not well-formed in Japanese, (26c) in some cases deteriorates grammaticality, but, as the process is at the stem/word-level, the output only has options. (23) differs in its strength according the morphological levels.¹²

Nevertheless, the ban of double /Q/ exists. /Q/ is often represented as a blank consonantal slot whose feature values are to be filled in later in derivations. However, the facts here suggest that /Q/ is not merely a blank mora nor is total assimilation to the following consonant, but is a phoneme on its own. (Kuroda (1967)) The output representation does not tell, because /Q/ in the middle of a word there is totally assimilated into the following consonant, so that the word-medial /Q/ and the word-final /Q/ cannot be considered “identical.” This means that some references to the input levels are necessary if we take how we count (23) seriously.

6. Conclusion

This paper discussed patterns in the so-called I-Ochi construction in Japanese. The author pointed out that I-Ochi is not a deletion of /i/ by any means, making reference to the

¹¹ The /Q/s here are emphatic in their function.

¹² In this regard, the verbal conjugation, another stem/word-level morphological operation is worth noting. As is well known, in some conjugational patterns, gemination is derived in the past tense form.

(i) toru “take” tot-ta “took”

If the stem to which the past tense suffix attaches to has another instance of a moraic consonant, the constraint (23) does not apply to it and double gemination is derived.

(ii) not-toru “take over” not-tot-ta “took over”

This may suggest that the levels at which the past tense suffixation and the /Q/-suffixation apply to are different, which is beyond the scope of this paper.

alternation of dorsals attested in the morphophonology of Japanese. The author instead pointed out the real analysis of the so-called I-Ochi must involve the suffixation of *-/Q/* which represents eventual evidentiality. Given this, it was pointed out that I-Ochi is actually a more general phenomenon that can be applied to various syntactic categories: nouns, adjectival nouns, verbal nouns, and adjectives. As the phenomenon is suffixation of */Q/*, it was pointed out that the */Q/*-suffixation is under the constraint that bans double */Q/s* in a phonological representation. However, the strength of the constraint with respect to the */Q/*-suffixation is weaker than the root-level application thereof as in onomatopoeia roots. It was concluded that the morphological levels, such as root level vs. word level, make the strength and the role of a phonological constraint. Finally, the phonological nature of */Q/* was briefly discussed, suggesting that it is a phoneme in Japanese on its own, not only a blank mora slot.

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