

Korean Perspectives on Southern Ryukyuan Glide Fortition*

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1 Introduction

According to the currently accepted classification of the Japonic languages, Japonic has two main branches, Japanese and Ryukyuan, with Hachijō being a potential offshoot (Pellard 2015). Ryukyuan is further divided into Northern and Southern subgroups: The former consists of Amami and Okinawan, and the latter consists of Miyako, Yaeyama, and Yonaguni.

The fortition of word-initial **w* into *b* (Thorpe 1983: 105) is arguably one of the most notable features of the Southern Ryukyuan subgroup,¹ having affected a wide range of words including the first-person pronoun **wanu* (> Miyako *ban*, Yaeyama *banu*) and the body part **wata* ‘belly’ (> Miyako *bata*, Yaeyama *bada*, Yonaguni *bata*). In addition, Yonaguni has *d* for word-initial occurrences of the Proto-Ryukyuan glide **j* as in **ja*: ‘house’ > *da*:. Although these reflexes were sometimes viewed as retentions, especially in the context of external comparisons (e.g. Martin

¹ While a similar fortition of **w* into *g(w)* or *b* can be found in a few Northern Ryukyuan dialects such as the Benoki dialect of Okinawan, it is nowhere near universal as in Southern Ryukyuan; see Pellard (2024: 46–7) for a detailed discussion.

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1987: 20), Bentley (2008: 199–203) convincingly demonstrated through examples such as ‘husband’ (Miyako *butu* < **woto*) and ‘married couple’ (Miyako *mju:tu* < **me* ‘woman’ + **woto*) that the direction of change was from **w* to *b*; Vovin (2010: 37) further strengthens this idea by presenting the example of Miyako *bo*: ‘a childhood name (lit. king)’, a Sino-Japanese loanword (cf. Japanese *o*: ‘king’ < *wau*). The same arguments can be made for the word-initial shift of **j* > *d* in Yonaguni: There are words such as *da*: ‘house’, which appears as *-ja* in compounds (Bentley 2008: 166), and there are Sino-Japanese loanwords in which Yonaguni initial *d* corresponds to Japanese *j* (Pellard 2009: 356–57; Vovin 2010: 41–2).

While these arguments clearly support the reconstruction of glides **w* and **j* at both Proto-Japonic and Proto-Ryukyuan levels, it remains unclear what value should be reconstructed for each of Proto-Ryukyuan word-initial **w* and **j* at the Proto-Southern Ryukyuan level. The most parsimonious approach would call for the reconstruction of **b* and **j*, since all descendants have undergone **w* > *b* / #_ , and all but Yonaguni preserve **j*. Another option is to reconstruct Proto-Southern Ryukyuan **w* and **j*, as with Proto-Ryukyuan, avoiding the asymmetry that would result from optimizing for maximum parsimony, but leaving the later occurrences of word-initial **w* > *b* in descendant languages as something to be explained through a different principle (e.g. areal influence).

In this paper, I present a novel interpretation of 尼南院 *ni.nam.wen*, a sixteenth-century Korean transcription of the Miyako name of a hitherto unidentified island, based on the phonetic reconstruction of word-initial *n*- as [ʰd ~ ʰz] in dialectal Late Middle Korean (fifteenth to sixteenth centuries). Since the data cannot be adequately explained within either of the two proposals, I suggest a third option in which the Proto-Southern Ryukyuan sounds in question are reconstructed as fricatives, namely **β* and **z*. In doing so, I discuss the implications of such reconstruction for the phonological history of Miyako.

1.1 Sources of Modern Southern Ryukyuan Data

Unless otherwise noted, the modern Miyako forms cited in this paper are from Jarosz’s (2015) reconstructed version of Nikolay Nevskiy’s dictionary. The cited forms are either from the dialect of Hirara, or from an unspecified dialect. I have tried to choose example words that are common across most dialects whenever possible since, for obvious reasons, it is not preferable to use a form confined to a specific dialect or dialect group as an example to demonstrate a certain feature of the language as a whole. When needed, I have cited forms from multiple central Miyako dialects.

For the modern Yaeyama forms, Miyagi’s (2003) dictionary of the Ishigaki dialect was consulted, but I believe that the forms are found across many dialects. To make sure that the cited forms are not confined to Ishigaki, I consulted Celik et al.’s (2021) wordlist of the Kabira dialect as well.

Modern Yonaguni forms are cited from Uwano (2010). There is very little dialect variation in the Yonaguni language (Yamada et al. 2015: 450), so the aforementioned concerns should not pose a problem here.

2 Korean Transcriptions of Miyako

The *Veritable Records of the Chosŏn Dynasty*, the official annals of the Korean state, contain detailed accounts of voyages of Korean sailors who visited the Southern Ryukyus as a result of

being cast adrift (1462 and 1479), as well as records about Miyako castaways who arrived on the shore of Cheju Island, located at the south of the Korean Peninsula (1497 and 1530). These accounts can serve as a source of historical Southern Ryukyuan linguistic data; most notably, Bentley (2008: 167), Vovin (2010: 44), and Pellard (2024: 49) pointed out that the toponym 閩伊是麼 *zywun.i.si.ma* ‘Yonaguni Island’, found in the 1479 account, provide direct evidence for a fricative or affricate value of Proto-Ryukyuan word-initial **j* in fifteenth-century Yonaguni.

Some other interesting observations can be made regarding the Yaeyama toponyms as well: For example, 欵尹是麼 *hwul.ywun.si.ma* for ‘Kuroshima Island’ shows that the lenition of **k* in **ku* was already underway in Yaeyama,² as opposed to Miyako where the plosive sound is still to be found (see 1462b in Table 1). The transcription of **pa* as 捕 *phwo*, as in 捕刺伊是麼 *phwo.lal.i.si.ma* ‘Aragusuku Island’ (corresponding to Proto-Ryukyuan **panare* + **sima*), might point to allophonic rounding of **a* after labials in fifteenth-century Yaeyama; see also (1462d) in Table 1 which might, in a similar vein, suggest that Koreans were unable to reliably distinguish between Southern Ryukyuan vowels **a* and **o* following a labial consonant.³ However, in this paper, I will mainly discuss the Miyako data, such as those presented in Table 1.

Year		Korean transcription		Modern Miyako equivalent
1462	(a)	彌阿槐 <i>mi.a.kwoy</i> /miakoj/		<i>m'a:ku</i> ‘Miyako Island’
	(b)	屈伊麻 <i>kwul.i.ma</i> /kurima/		<i>ffama</i> ~ <i>ffima</i> ‘Kurima Island’
	(c)	日南浦 <i>zil.nam.pwo</i> /zirnampo/		<i>irav</i> ‘Irabu Island’
	(d)	時麻子 <i>si.ma.co</i> /simatsʌ/		<i>sʎmudzʎ</i> ‘Shimoji Island’
	(e)	于甘 <i>wu.kam</i> /ukam/		<i>ugam</i> ‘Ōgami Island’
1479	(a)	他羅馬 <i>tha.la.ma</i> /tʰarama/		<i>tarama</i> ‘Tarama Island’
	(b)	伊羅夫 <i>i.la.pwu</i> /irapu/		<i>irav</i> (= 1462c) ‘Irabu Island’
	(c)	覓高 <i>myek.kwo</i> /mjəkko/		<i>m'a:ku</i> (= 1462a) ‘Miyako Island’

Table 1: Some Examples of Miyako Place Names Found in the *Veritable Records*.

2.1 Accuracy of the Transcriptions

Since the words were transcribed by a Korean official who presumably had no knowledge of Miyako, one might question whether the transcriptions can be regarded as a reliable source of information about the phonology of the Miyako language of the time. It is also not clear, from the names of the islands found in the *Veritable Records*, whether the transcriptions are from Miyako or from Japanese; they seem to closely match their modern Japanese forms (see the rightmost column of Table 1).

However, if we look at the personal names in the 1497 account (Table 2), we can find familiar Miyako personal name elements such as *tunu* < **tono* ‘lord’ (道老 *two.lwo* ~ 豆老 *twu.lwo*) (1497a, 1497b) and the diminutive *-gama* (可麻 *ka.ma*) (1497g). In addition to being present in the modern

² Another possibility is that *h* /*h*/ reflects a strongly aspirated [*kʰ*]; initial aspirated *kh* /*kʰ*/ is rare in Sino-Korean (Lee & Ramsey 2011: 65), so *h* might have been used as an alternative. Word-initial voiceless obstruents in Yaeyama typically exhibit strong aspiration, a feature that is most notable in the Hateruma dialect (Aso & Nakazawa 2023).

³ There is an earlier, shorter version of the 1479 account in the *Veritable Records* (sixteenth day of the fifth lunar month) with generally less precise transcriptions, which I will disregard in favor of the more detailed account (tenth day of the sixth lunar month). In that version, the name of Irabu Island (1462c, 1479b in Table 1) is transcribed as 伊羅波 *i.la.pha* /irapʰa/ with the vowel /a/.

Miyako language, the word *tunu* < **tono* ‘lord’ can be also found in names of historical figures such as Upudati Uputunu, who ruled Miyako during the late fifteenth century. Given that the ruler of an entire island (or islands) bore the title of *upu-tunu* ‘great-lord’, the two people (1497a) and (1497b) decorated with the lesser title of *tunu* were likely village lords.

	Korean transcription	Remarks
(1497a)	愁可云道老 <i>swu.ka.wun.two.lwo</i>	Ends in <i>tunu</i> ‘lord’; ‘lord of Shiokawa’?
(1497b)	伊時豆老 <i>i.si.twu.lwo</i>	Ends in <i>tunu</i> ‘lord’
(1497c)	忘求古老 <i>mang.kwu.kwo.lwo</i>	* <i>ma-</i> ‘true’ + * <i>-ⁿgokoro</i> (= * <i>kokoro</i>) ‘heart’?
(1497d)	伊也豆可 <i>i.ya.twu.ka</i>	
(1497e)	呂也豆可 <i>lye.ya.twu.ka</i>	
(1497f)	羅伊道古 <i>la.i.two.kwo</i>	
(1497g)	其愁可麻 <i>ki.swu.ka.ma</i>	Ends in <i>-gama</i> , a common diminutive suffix
(1497h)	求其沙 <i>kwu.ki.sa</i>	
(1497i)	尤無有可 <i>u.mwu.ywu.ka</i>	牛母 <i>u.mwo</i> in the 1530 account
(1497j)	未候可勿奴 <i>mi.hwu.ka.mul.nwo</i>	* <i>weku</i> ‘male’ + * <i>kamoro-ja</i> ‘child’

Table 2: Names of Miyako Castaways as Recorded in the 1497 *Veritable Records* Account.

According to the *Veritable Records*, the castaways were from Tarama Island, and we can find a possibly Tarama-specific feature in (1497j), namely the word 未候 *mi.hwu* (cf. modern Tarama Miyako *bifu* ‘male’ < **weku*, which is Tarama-specific according to Nevskiy). We can also observe that the word-initial fortition **w* > *b* was already underway; since Korean does not phonemically distinguish between voiceless and voiced stops, and Korean word-initial stops are always realized as voiceless, it is no surprise that a foreign voiced labial consonant such as [b] was transcribed as *m* /*m*/.

The name 未候可勿奴 *mi.hwu.ka.mul.nwo* certainly stands for ‘male child’ (cf. modern Miyako *kamura-gama* ‘child’ for the second part);⁴ given that the first two names in the list are those of village lords, it seems that the names are ordered from oldest to youngest (or from most powerful to least powerful), thus it would be reasonable that the last person listed was, indeed, a child. It should be also noted that the first part of (1497a), 愁可云 *swu.ka.wun*, might correspond to Shiokawa, one of the main settlements on Tarama Island (modern Tarama Miyako *εuga*), especially if 云 *wun* is a scribal error for 瓦 *wa*.

2.2 The Problem of an Unidentified Toponym

Although the Miyako toponyms found in the *Veritable Records* can be, in general, trivially matched to their modern names based on phonetic similarity, two toponyms are yet to be identified, according to Seki (2021): 也麻老風加音島 *ya.ma.lwo.phwung.ka.um.two* and 尼南院島 *ni.nam.wen.two*. The common final element 島 *two* is a Sino-Korean word for ‘island’, therefore

⁴ Shuri Okinawan has *kamuro*: ‘a kind of children’s hairstyle’ and *kamuro*:-*warabi* ‘a child with the *kamuro*: hairstyle (lit. *kamuro*:-child)’ (Kokuritsu Kokugo Kenkyūjo 1963: 305); compare Japanese *kamuro*. Following Yun’s (2023: 66) suggestion, we can reconstruct **kamoro-ja* (with the diminutive suffix **-ja*) > Proto-Miyako **kamorɔ*., thus *ka.mul.nwo*. See Section 3.2 for the use of *n*.

the two names appear to refer to a certain island named *ya.ma.lwo.phwung.ka.um* and another named *ni.nam.wen*, respectively.

Yun (2023: 63) argued that *ya.ma.lwo.phwung.ka.um.two* is a Miyako word for ‘sorghum’ (modern Miyako *jamatu-upugam*), followed by the focus marker **=do* (modern Miyako *=du*) instead. This pseudotonym appears in the 1497 account of Tarama castaways, in which a Korean official asked the castaways about the grain on the ship and the castaways replied, reportedly, that the grain was bought on an island named *ya.ma.lwo.phwung.ka.um*. However, given the phonetic similarity between Sino-Korean *two* /to/ ‘island’ and the Ryukyuan focus marker **=do*, it seems plausible that the Korean official mistakenly assumed ‘sorghum=FOC’ as a name of an island.

This leaves us with only one identified island, *ni.nam.wen* /ninamwən/, which appears in the 1530 account. Indeed, there seems to be no island with such name.

3 Word-Initial Denasalization in Korean

In modern Korean, word-initial /m/ and /n/ often denasalize to [ᵐb] and [ᵐd] (Umeda 1957: 66–7). Martin (1992: 210) notes that this denasalization is reflected in eighteenth- and nineteenth-century Japanese and European transcriptions of Korean: For example, *Wakan Sansai Zue*, a Japanese encyclopedia published in 1712, has 止伊 *doi* for ‘four’ (Late Middle Korean *neyh* /nəjh/)⁵ and 知留古布 *dirukofu* for ‘seven’ (Late Middle Korean *nilkwup* /nirkup/ or *nilkwop* /nirkop/).

As early European examples of such transcriptions, Martin cites *bool* ‘water’, *bodee* ‘hair’, and *doon* ‘eyes’ (corresponding to Late Middle Korean *mul* /mir/, *meli* /məri/, and *nwun* /nun/) from Clifford’s list of twenty-eight Korean words accompanying Basil Hall’s account of the 1816–1817 voyage of HMS *Alceste* and *Lyra*. However, even earlier examples such as *deuye* ‘four’ and *doen* ‘eyes’ can be found in Eibokken’s 143 word vocabulary (Vos 1975): While Eibokken’s vocabulary was published in 1705 as part of the second edition of Witsen’s *Noord en Oost Tartaryen*, Eibokken stayed in Korea from 1653 to 1666, making his data a century and a half earlier than Clifford’s.⁶

The earliest foreign source reflecting word-initial denasalization is perhaps the early Kamakura-period *Nichūreki*, a Japanese encyclopedia that is mostly compiled from late Heian (twelfth-century) sources (Tsuji 2000). It has 卜井 *doi* for 四 ‘four’ and チリクニ for 八 ‘eight’; the latter is regarded as a scribal error for チリクヒ *dirikufi*, corresponding to *nilkwup* ‘seven’ but mistakenly placed next to 八 ‘eight’.

3.1 Word-Initial /n/ in a Palatalizing Environment

Apart from initial *b* and *d*, arguably the most surprising feature found in Clifford’s list is the initial *j* in *jeep* ‘mouth’ and *jee* ‘teeth’. The corresponding Late Middle Korean forms are *ip* /ip/ and *ni* /ni/; the standard dialect of Early Modern Korean dropped initial *n* /n/ before *i* /i/ or *y* /j/ in the late eighteenth century (Lee & Ramsey 2011: 260), so we expect a vowel-initial form for both words,

⁵ Although 1712 is already well into the Early Modern Korean period, Late Middle Korean is used throughout this paper as a convenient point of reference.

⁶ It might be worth noting, however, that this vocabulary has both denasalized (*b*, *d*) and nondenasalized forms (*m*, *n*), unlike Clifford’s. It is also interesting that, in Eibokken’s vocabulary, word-initial /n/ is more prone to denasalization than /m/, which is in line with Kim’s (2011: 54) analysis of denasalization in modern Korean.

beginning with either [i] or an epenthetic [j]. Instead, we have forms with initial *j*, which must represent a voiced affricate or fricative in Clifford's English-based orthography.⁷

Assuming that the standard dialect of Early Modern Korean did not have word-initial denasalization, *n*-dropping in a palatalizing environment in standard Early Modern Korean can be characterized as denasalization [nⁱ] > [j] (> Ø):

- (1) a. *ni* [nⁱ] > *i* [(j)i]
 b. *ip* [(j)ip] > *ip* [(j)ip]

However, the initial *j* found in transcriptions *jeep* and *jee* points to a different scenario, in which the palatalized allophone of word-initial /n/ was an affricate or a fricative (likely the latter), and [j] underwent fortition to be merged with /n/ word-initially:

- (2) a. *ni* [n^{(d)zi}] > *i* [(d)zi] (Clifford's *jee*)
 b. *ip* [(j)ip] > *ip* [(d)zip] (Clifford's *jeep*)

The fricative value of palatalized word-initial /n/ is also possibly supported by Eibokken's vocabulary, where 'seven' is transcribed as *girgop* or *jirgop* (corresponding to Late Middle Korean *nilkwop*), and 'seventy' as *hierigum* or *jirgun* (Late Middle Korean *nilhun*). Given that Late Middle Korean *kyecip* 'woman' appears in the vocabulary as *hiechep*, it seems that Eibokken's *g* and *h* before *i* (or *y*) were intended to represent a palatalized velar consonant, but he was unable to reliably distinguish between a palatalized velar and a palatalized coronal,⁸ hence the *g* in *girgop*. The only other example of *g* appearing before *i* or *y* is found in *tourgy* 'two (used when counting aloud)', an amalgamation of *twulh* 'two' and Sino-Korean *zi* 'two'; therefore, I believe that the initial sound in Eibokken's *girgop* was [n^(z)].⁹

Even stronger evidence for [n^z] comes from the Late Middle Korean word *zywus* */zju {sk, ts^h}/ 'wooden stick (used in a board game)',¹⁰ attested in 1527. In Late Middle Korean, *z* /z/ is usually confined to word-medial position (except in Sino-Korean words in which they correspond to Middle Chinese *ny-* /n/ > modern Mandarin *r-* /z⁽¹¹⁾), and there are only five words with initial *z* that are not transparently Sino-Korean: *zelzel*, *zemzem*, *zywo ho-*, *zywoh*, and *zywus*. The first two are

⁷ The fact that Clifford's *j* does not represent a glide is confirmed by another word in his list, *samb-jee* 'tobacco', which corresponds to modern Korean *ssamci* 'tobacco pouch' with *c* [dz].

⁸ Another example of a palatalized coronal being treated as velar-like can be found in Furet's 1860 Okinawan translation of the Lord's Prayer (Osterkamp 2015: 72–3), in which *tteu=ga* 'person=GEN' appears as *tkiouga*, and *jurutei*, the converb form of 'to forgive', as *iourouki*.

⁹ Also interesting is his use of *ch* or *sch* for the palatalized allophone of /s/ (or /ts/ in *hiechep*), and *tch* for the palatalized allophone of /ts^h/. Although it is possible that such use of *ch*, *sch*, and *tch* was influenced by the orthographies of other European languages, *ch* /x/ is the voiceless counterpart of *g* /ɣ/ in Dutch, therefore the use of *ch* for [ç] might be taken as evidence that the sound rendered as *g* in *girgop* was, indeed, something like [z].

¹⁰ In Late Middle Korean, the distinction between /s/, /sk/, /ts/, and /ts^h/ was neutralized word-finally (Lee & Ramsey 2011: 153), and *zywus* is only attested in isolation; therefore, we do not know whether it was /zjus/, /zjusk/, /zjuts/ or /zjuts^h/. Modern Korean *ywuch* suggests either **zywuch* /zjuts^h/, the straightforward option, or **zywusk* /zjusk/, as some words with final *ch* had *sk* in Late Middle Korean (Lee & Ramsey 2011: 21).

¹¹ This provides a parallel to the denasalization of /n/ to [n^z] in a palatalizing environment, as posited in this paper.

mimetic words; *zywo* in *zywo ho-* ‘to forgive’ is likely from Middle Chinese *nyew* 饒 ‘to be abundant, to forgive’ (Sino-Korean *zywo*); and *zywoh* is a nativized Chinese loanword (from Middle Chinese *nyowk* 褥 ‘mattress’, Sino-Korean *zywok*); this leaves *zywus* as the only nonmimetic, not transparently Sino-Korean word beginning with *z* (see Lee & Ramsey 2011: 140 for a similar discussion). It should be noted that some modern dialects have a nasal-initial form corresponding to *zywus*, for instance, Yukchin *nywusu-* ~ *nywukki* < **nywusuk* (Kwak 2015: 158). By positing [ʰz] as the palatalized word-initial allophone of /n/, the anomaly of *zywus* can be explained away as a result of interdialectal borrowing, since we can reasonably expect a form such as **nywusk* [ʰzjusk] from a denasalizing dialect to be borrowed into the standard dialect as **zywusk* [zjusk].

3.2 Identification of *ni.nam.wen* as Irabu Island

The etymology of *zywus* suggested in Section 3.1 provides a *terminus ante quem* for the word-initial denasalization of /n/ into a fricative in a palatalizing position in one or more dialects, that is, 1527. This allows us to phonetically reconstruct *ni.nam.wen*, the 1530 transcription of the name of an unidentified island (see Section 2.2), as [ʰzinamwən], which closely resembles the 1462 transcription of the name of Irabu Island (modern Miyako *irav*), 日南浦 *zil.nam.pwo* /zirnampo/ (1462c).

The transcription of *r* as *n* is quite typical of this period; examples of the same confusion can be found among the 1501 *Öüm Pönyök* transcriptions of Okinawan (Tawata 1997: 49–50). The *Öüm Pönyök* also shows prenasalization of voiced obstruents in Okinawan which, along with the fact that modern Miyako has *i* or *n* depending on the dialect in words such as ‘to go out’ (Hirara *idi-γ*, Tarama *ndi-l*), suggests that Miyako also historically had prenasalized obstruents such as **mb*, **nd*, **ndz*, and **ng* instead of plain voiced **b*, **d*, **dz*, and **g*. Therefore, a naïve reconstruction would give **ira^mv-nⁿdzγma* for modern *irav-dzγma* ‘Irabu Island’ (= *irav* + *-dzγma* = *sγma* ‘island’), in which **m^v* and the nasal component of **ndz*, combined, match the final [mwən] in *ni.nam.wen*. The *Veritable Records* tell us that the Koreans were well aware of the fact that *sima* means ‘island’ in Japanese and that the languages spoken in the Ryukyus are akin to Japanese, so they replaced what sounded like *sima* with Sino-Korean *two* ‘island’, yielding 尼南院島 *ni.nam.wen.two* ‘*ni.nam.wen* island’ as the result; but they failed to account for the prenasalization, leaving the final *n* behind.

The initial *n* [ʰz] in *ni.nam.wen* agrees well with the *z* [z] in *zil.nam.pwo*, suggesting that the Miyako language once had initial [z] in *irav* indeed.

4 Implications for Miyako Phonological History

The example given below illustrates why positing **z* in fifteenth- and sixteenth-century Miyako is an idea worthy of consideration.

- (3) a. Proto-Ryukyuan **kosi* ‘back’ > modern Miyako *kusγ* (cf. Shuri Okinawan *kuei*)
- b. Proto-Ryukyuan **dosi* ‘friend’ > modern Miyako *dusγ* (cf. Shuri Okinawan *duei*)
- c. Proto-Ryukyuan **ai* ‘indigo’ > modern Miyako *aγ* (cf. Shuri Okinawan *ʔe:*)
- d. Proto-Ryukyuan **mai* ‘rice’ > modern Miyako *maγ* (cf. Shuri Okinawan *me:*)

In order to accommodate for the *Veritable Records* transcriptions corresponding to modern *irav* that begin with a fricative, we have to assume that the word had epenthetic word-initial **j*, which

underwent fortition to $*z$. In such system, it would be also possible that $*Vi$ (where V represents a vowel) was, in fact, $*Vji$; the expected development, then, is $*Vji > *Vzi > *V\gamma$, with $*zi > *z\gamma = *\gamma$ parallel to $*si [\epsilon i] > *s\gamma$.¹²

Before developing this idea further, we have to establish a periodization. Since the initial consonant in Proto-Ryukyuan syllables $*ku$ ($>$ modern Miyako *fu*) and $*mbu$ ($>$ modern Miyako *v*) still appear as stops k and $(m)p$ in the 1462 and 1479 transcriptions, as opposed to h and mw in 1497 and 1530, it is clear that we are looking at two different periods.¹³ The former will be called Early Proto-Miyako, and the latter Late Proto-Miyako. It would make sense to call both of them Proto-Miyako, as they likely predate the separation of dialects (but not by much).¹⁴

4.1 From Early to Late Proto-Miyako

The following examples show the regular Miyako reflex for each of Proto-Ryukyuan $*Ci$ and $*Cu$ (where C represents a consonant) combinations.

- (4) a. $*mi > m$ (Proto-Ryukyuan $*mita$ ‘soil’ $>$ modern Miyako *mta*)
 b. $*mu > m$ (Proto-Ryukyuan $*mukasi$ ‘past’ $>$ modern Miyako *mkas\gamma*)
- (5) a. $*ni > n$ (Proto-Ryukyuan $*oni$ ‘demon’ $>$ modern Miyako *un*)
 b. $*nu > n$ (Proto-Ryukyuan $*kinu$ ‘garment’ $>$ modern Miyako *k\gamma n*)
- (6) a. $*tsi > ts\gamma$ (Proto-Ryukyuan $*mitsi$ ‘road’ $>$ modern Miyako *mts\gamma*)
 b. $*tsu > ts\gamma$ (Proto-Ryukyuan $*tsuki$ ‘moon’ $>$ modern Miyako *ts\gamma k\gamma*)
- (7) a. $*ndzi > dz\gamma$ (Proto-Ryukyuan $*to^ndzi$ ‘wife’ $>$ modern Miyako *tudz\gamma*)
 b. $*ndzu > dz\gamma$ (Proto-Ryukyuan $*me^ndzu$ ‘water’ $>$ modern Miyako *midz\gamma*)
- (8) a. $*si > s\gamma$ (Proto-Ryukyuan $*sima$ ‘island’ $>$ modern Miyako *s\gamma ma*)
 b. $*su > s\gamma$ (Proto-Ryukyuan $*sumi$ ‘ink’ $>$ modern Miyako *s\gamma m*)
- (9) a. $*ri > \gamma$ (Proto-Ryukyuan $*ori$ ‘melon’ $>$ modern Miyako *u\gamma*)
 b. $*ru > \gamma$ (Proto-Ryukyuan $*peru$ ‘garlic’ $>$ modern Miyako *pi\gamma*)
- (10) a. $*pi > p\gamma$ (Proto-Ryukyuan $*pito$ ‘person’ $>$ modern Miyako *p\gamma tu*)
 b. $*pu > fu$ (Proto-Ryukyuan $*pune$ ‘ship’ $>$ modern Miyako *funi*)

¹² Miyako *s\gamma* and *\gamma* can be alternatively interpreted as syllabic *s* and *z*; γ is a symbol representing the so-called fricative vowel that can be, in general, rewritten as *s* after a voiceless consonant and *z* everywhere else (*ts\gamma* and *dz\gamma* would be *ts* and *dz*). One might notice that writing *z\gamma* is superfluous; in reality, a single γ is used instead.

¹³ A more subtle difference is *mi.a.kwoy* ‘Miyako Island’ (presumably reflecting $*mijako$) in 1462 versus *myek.kwo* in 1479, which is likely a result of monophthongization $*Vja$ (where V is an unrounded vowel) $>$ $*\epsilon$: (Yun 2023). See Footnote 4 for an example of a similar change $*oja > *o$.

¹⁴ For example, *ngk* for $*ng$ in *ya.ma.lwo.phwung.ka.um.two* and *mw* for (what used to be) $*mb$ in *ni.nam.wen.two* shows that prenasalization of voiced obstruents was present in our Late Proto-Miyako; modern dialects universally have plain voiced obstruents. On the other hand, the fact that the Tarama-specific word *bifu* ‘male’ appears in the account of Tarama castaways suggests, albeit weakly, that the language was in a very early stage of diversification.

- (11) a. $*mbi > b\eta$ (Proto-Ryukyuan $*ka^mbi$ ‘paper’ > modern Miyako $kab\eta$)
 b. $*mbu > v$ (Proto-Ryukyuan $*a^mbura$ ‘grease’ > modern Miyako $avva$)
- (12) a. $*ki > k\eta$ (Proto-Ryukyuan $*kimo$ ‘liver’ > modern Miyako $k\eta mu$)
 b. $*ku > fu$ (Proto-Ryukyuan $*kumo$ ‘cloud’ > modern Miyako $fumu$)
- (13) a. $*ygi > g\eta$ (Proto-Ryukyuan $*mo^ygi$ ‘barley’ > modern Miyako $mug\eta$)
 b. $*ygu > v$ (Proto-Ryukyuan $*tau^ygura$ ‘kitchen’ > modern Miyako $to.vva$)

It is important to notice that Proto-Ryukyuan $*Ci$ and $*Cu$ have different reflexes in Miyako only when C is a stop consonant, as in (10)–(13). For consonants other than stops, $*Ci$ and $*Cu$ have the same Miyako reflex, as in (4)–(9). Since $ts\eta$, $dz\eta$, $s\eta$, and η can be alternatively written as $t\zeta$, $d\zeta$, ζ , and ζ (see Footnote 12), we can posit $*i$, $*u > \emptyset$ for (4), (5), (6), (7), and (8). For (9), a similar change can be posited, as there are dialects that show l for $*ri$ and $*ru$; we can think of l as the syllabic equivalent of $r < *r$.¹⁵ I reconstruct $*i$; modern dialectal variation is due to $*i > *l > l$ in ‘lambdaicistic’ dialects versus $*i > z$ in ‘zetacistic’ ones.¹⁶

After a stop consonant, rather than simply deleting the close vowel, a fricative was inserted between the stop and the close vowel:¹⁷

- (14) a. $*pi > *[p\epsilon i] > p\zeta = p\eta$ (cf. $*si [\epsilon i] > \zeta = *s\eta$)
 b. $*pu > *[p\phi u] > *p\zeta > f = fu$
- (15) a. $*mbi > *[mbz i] > b\zeta = b\eta$
 b. $*mbu > *[mb\beta u] > *b\zeta > v = v$
- (16) a. $*ki > *[k\epsilon i] > k\zeta = k\eta$
 b. $*ku > *[k\phi u]$ (merges into (14b))
- (17) a. $*ygi > *[ygz i] > g\zeta = g\eta$
 b. $*ygu > *[ygz\beta u]$ (merges into (15b))

In the above formulation, $[p\epsilon]$, $[p\phi]$, $[mbz]$, $[mb\beta]$, $[k\epsilon]$, $[k\phi]$, $[ygz]$, and $[ygz\beta]$ are regarded as allophones of $*p$, $*mb$, $*k$, and $*ygz$ conditioned by the following vowel. Alternatively, we can merge $*i$ and $*u$ into $*i$ (with $*[\epsilon]$, $*[z] > *s$, $*z$ before $*i$), and then posit $*i > \emptyset$ instead of $*i$, $*u > \emptyset$:

- (18) a. $*pi > *[p\epsilon i] > \text{Late Proto-Miyako } *psi > p\zeta = p\eta$
 b. $*pu > *[p\phi u] > \text{Late Proto-Miyako } *p\phi i > *p\zeta > f = fu$

¹⁵ This fact is very evident from alternation patterns found in modern dialects with l ; for example, Shimoji’s (2008) phonological analysis of the Nagahama dialect treats both $[l]$ and $[r] < *r$ as allophones of r/τ .

¹⁶ There are ‘iotacistic’ dialects (such as Ikema) with $*ri$, $*ru > i$ as well.

¹⁷ The reconstruction of an intermediate affricate stage in (14b) is supported by the fact that $*pumV$, $*kumV > *nmV$ and $*kinV$, $*tsunV > *nnV$ in the Ikema dialect (Pellard & Hayashi 2012: 44–5). In the Ikema dialect, Proto-Ryukyuan $*ki$, $*tsi$, and $*tsu$ are merged into $ts\eta$, while $*pu$ and $*ku$ are merged into fu as usual. Since $*sinV$ and $*sunV$ do not exhibit the same change, the condition can be formulated as an affricate followed by a homorganic nasal, implying an earlier affricate stage for fu . The voiced counterpart in (15b) is then assumed for the sake of symmetry.

- (19) a. $*mbi > *[mbzi] >$ Late Proto-Miyako $*mbzi > b\zeta = b\gamma$
 b. $*mbu > *[mb\beta u] >$ Late Proto-Miyako $*mb\beta i > *b\gamma > \gamma = v$
- (20) a. $*ki > *[kci] >$ Late Proto-Miyako $*ksi > k\zeta = k\gamma$
 b. $*ku > *[k\phi u]$ (merges into (18b))
- (21) a. $*ngi > *[ngzi] >$ Late Proto-Miyako $*ngzi > g\zeta = g\gamma$
 b. $*ngu > *[ng\beta u]$ (merges into (19b))

This can better explain certain words in which Miyako has *i* corresponding to Shuri Okinawan *u* (< Proto-Ryukyuan $*o \sim *u$). For example, Miyako *-ti* ‘year (counter)’ (cf. Proto-Ryukyuan $*-to >$ Shuri Okinawan *-tu*) can be explained as an Okinawan loanword which underwent the change $*-tu > *-ti$ (close vowel merger). Note that the deletion of $*i$ effectively transfers its syllabicity to the preceding consonant; since $*t$ cannot function as a syllable nucleus, $*i$ -deletion is blocked, and a later merger of $*i$ into *i* (< $*e$) results in *-ti*.

Miyako *pari* ‘field’ (cf. Shuri Okinawan *haru*) can be explained in a similar manner, albeit this requires $*l$ to be distinct from $*r$. Yet another interesting example is *itati-* ~ *it’ati-* ‘to spill liquid’ (Celik 2020: 44); the corresponding Shuri Okinawan word is *juti-* ‘to spill liquid’ (= *ju:* ‘hot water’ + *’uti-* ‘to move food, etc., into another container in order to empty the original container’). Since Miyako has *ju:* ‘hot water’ corresponding to Shuri Okinawan *ju:*, *itati-* ~ *it’ati-* must be a loanword, where $*ju > *ji > i$.

Following the close vowel merger, the mid vowels $*e$ and $*o$ were raised to *i* and *u*, but it is not clear whether the raising was completed within the Late Proto-Miyako period. It is also possible that the raising never finished in some dialects; for example, Shimoji (2008: 40) describes Nagahama /u/ as [ʊ ~ ɯ]. As a notational device, I will use $*l$ and $*\upsilon$ for the Late Proto-Miyako reflexes of Early Proto-Miyako $*i$ and $*u$, respectively.

4.2 Development of Glides

The full merger of close vowels, as posited in Section 4.1, requires the insertion of epenthetic glides before close vowels when not preceded by a consonant ($*i, *u > *ji, *wu$), since the distinction between Proto-Ryukyuan $*i$ and $*u$ is maintained in such environment (i.e. $*ji, *wu > *ji, *wi > i \sim \gamma, u \sim v$). As discussed earlier, Proto-Ryukyuan $*Vi >$ Miyako $V\gamma$ suggests the fortition of epenthetic $*j$ to $*z$; similarly, we can posit $*w > *b$ based on the occasional $*u > v / \# _$, which must be due to (sporadic?) affrication $*\beta > *b\beta$ in word-initial position (cf. (19b)).

The fact that the name of Irabu Island is attested in the *Veritable Records* with initial $*z$ suggests that epenthetic glides were also inserted before mid vowels ($*e, *o > *je, *wo > *ze, *bo$), since the name of Irabu Island is most likely from Proto-Ryukyuan $*era^mbu$ (cf. Okinoerabu Island, whose name *’irabu* is homophonous with Irabu Island in Shuri Okinawan). However, the fortition $*w, *j > *b, *z$ must have been reverted later when followed by a mid vowel, as no trace of fricatives can be found in their modern reflexes (i.e. *i* and *u*).¹⁸

¹⁸ One might argue that the initial *v* in Tarama Miyako words such as *ve:ki* ‘a wealthy person’ (Tokuyama & Celik 2020: 83) < $*\beta\omega.ki < *bojake <$ Proto-Ryukyuan $*ojake$ is the reflex of this $*\beta$ (cf. $*mojas- > *m\omega:s- >$ Tarama *me:s-* ‘to burn something’).

Primary word-initial $*wo$ has a different Miyako reflex ($> bu$) from $*o > *wo$ with an epenthetic glide ($> u$), suggesting that the insertion of epenthetic glides caused the fortition of primary word-initial $*w$ in a push chain-like manner.

- (22) a. $*w > *β / \#_$ (fortition of primary word-initial glide)
 b. $\emptyset > *w / \{\#, V\}_ \{u, o\}$ (insertion of epenthetic glide)
- (23) a. $*β > *b$
 b. $*w > *β$

We can posit a sequence of changes similar to (22a), (22b), and (23b) for the palatal glide as well, although the exact conditioning environment is difficult to formulate.¹⁹ Proto-Southern Ryukyuan can be placed between (22) and (23), since the palatal counterpart of (23a) seems to have happened only in Yonaguni.

5 Conclusions

In this paper, I analyzed fifteenth- and sixteenth-century Korean transcriptions of Miyako found in the *Veritable Records of the Chosŏn Dynasty*. The transcriptions were found to belong to two different periods, Early Proto-Miyako (1462 and 1479) and Late Proto-Miyako (1497 and 1530).

I proposed a scenario in which the palatalized word-initial allophone of /n/ was [nʲ] in some dialects of Late Middle Korean, explaining the anomalous word *zywus* ‘wooden stick (used in a board game)’ with initial *z* as an interdialectal borrowing from one such dialect. This phonetic reconstruction allowed the identification of 尼南院 *ni.nam.wen* [nʲzinamwən] as Irabu Island which, along with another transcription, 日南浦 *zil.nam.pwo*, suggests the existence of *[nʲ] in Proto-Miyako (Late Proto-Miyako $*zɪr^{amb}βi^{-n}dzima < \text{Early Proto-Miyako } *zera^{mbu^{-n}dzima < \text{Proto-Southern Ryukyuan } *jera^{mbu^{-n}dzima < \text{Proto-Ryukyuan } *era^{mbu^{-n}dzima$).

Building upon this idea, I formulated a number of sound changes between Proto-Ryukyuan and modern Miyako, suggesting the reconstruction of $*β$ and $*z$ as the Proto-Southern Ryukyuan reflexes of Proto-Ryukyuan word-initial $*w$ and $*j$, respectively.

The reconstructed consonant inventories of Early and Late Proto-Miyako as discussed in Sections 4.1 and 4.2 are presented in Tables 3 and 4.

¹⁹ The palatal equivalent of (23b), i.e. $*j > *z$, would universally block the monophthongization of $*Vja$ while, in reality, the monophthongization is observed, albeit with some exceptions such as in those words with exactly two syllables (e.g. $*kaja$ ‘miscanthus’ $> kaja$). It can be said, however, that the monophthongization seems to occur only when $*Vja$ is non-word-final (e.g. $*aja^o$ ‘song’, $*sajaka$ ‘dawn’, $*jojami$ ‘darkness’) and when $*Vja$ is formed by suffixation of diminutive $*-ja$, therefore it is possible that, e.g., except word-initially, $*j > *z$ was confined to the root-final syllable ($*kaja > *kaza$), at least in Early Proto-Miyako.

	<i>*m</i>		<i>*n</i>		
<i>*p</i>	<i>*mb</i>	<i>*t</i>	<i>*nd</i>	<i>*k</i>	<i>*ŋg</i>
		<i>*ts</i>	<i>*ndz</i>		
	<i>*β</i>	<i>*s</i>		<i>*z</i>	
			<i>*r</i>		
	<i>*w</i>		<i>*ɹ</i>	<i>*j</i>	

Table 3: Reconstructed Consonant Inventory of Early Proto-Miyako.

	<i>*m</i>		<i>*n</i>		
<i>*p</i>	<i>*mb</i>	<i>*t</i>	<i>*nd</i>	<i>*k</i>	<i>*ŋg</i>
<i>*pφ</i>	<i>*mbβ</i>	<i>*ts</i>	<i>*ndz</i>		
	<i>*β</i>	<i>*s</i>	<i>*z</i>		
			<i>*r</i>		
	<i>*w</i>		<i>*ɹ</i>	<i>*j</i>	

Table 4: Reconstructed Consonant Inventory of Late Proto-Miyako.

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