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Innovations, distribution gaps and mirror images: The reflexes of Proto-Ryukyuan close vowels in a post-nasal position

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Abstract

The present paper attempts to systematize and explain the changes in Proto-Ryukyuan (PR) vowels in a post-nasal position as observed in the lexicon of five daughter languages: Ie-Kunigamian/Okinawan, Shuri-Okinawan, Hirara-Miyakoan, Shika-Yaeyaman and Yonaguni/Dunan. The changes in question are related to the mid-vowel raising, which supposedly occurred only after the split of PR, but currently bears the markings of an unconditioned change in virtually in all daughter languages.

Starting with an assumption that in some environments, the post-nasal raising of the mid-vowels led to the merger of original mid- and close vowels, while in different environments changes to the original close vowels keeps the reflexes of mid- and close vowels apart, the paper analyzes and compares Ryukyuan vocabulary containing the pertinent sound sequences of *mi, *mu, *ni and *nu, contrasting it with the reflexes of *me, *mo, *ne and *no. By scrutinizing in detail as many different environments of the sound sequences in question as possible, the paper aims to discover some patterns in the behavior of these sequences, examining both shared innovations and shared retentions among the daughter languages, observing the differences in the PR distribution of post-nasal mid-and close vowels, and entertaining the implications these findings hold for the general knowledge of PR.

Keywords: Japonic; Ryukyuan; historical linguistics; vowel raising; chain shifts; nasals.

1. Introduction

The purpose of this paper is to analyze the reflexes of Proto-Ryukyuan (PR) close vowels *i and *u in the environments with a preceding PR nasal. The underlying assumption here is that the sequences of PR nasal + close vowel

have produced a number of revelatory sound changes, a scrutiny of which could substantially contribute to one's understanding of the historical development of Ryukyuan languages.

According to the reconstruction in Thorpe 1983, PR had a five-vowel system, with mid-close phonemes *e and *o and close *i and *u. The modern daughter languages have mostly undergone an unconditioned raising of *e > i and *o > u. In some instances, such as Sakishima *i > ɨ~ɿ, the original close vowels changed, too, thus preventing the expected *e/*i and *o/*u mergers. In other, although the vowels themselves have merged, the phonological distinction had been transferred to the preceding segment, consequently inducing changes in the consonant system; for example, in Okinawan *ki, *gi were palatalized as *tɕi, *ʑi, keeping their reflexes apart from *ke, *ge > ki, gi.

The reflexes of close vowels and/or their environments are usually discrepant in Ryukyuan daughter languages, indicating that the raising as well as the optional accompanying consonant changes occurred only after the proto-language had split. Nevertheless, observing the relevant reflexes in modern Ryukyuan, one cannot fail to notice that oftentimes, these reflexes constitute a kind of a mirror image of one another. For instance, while most South Ryukyuan varieties have a *[p,k]u > fu fricativization (cf. *pune > *funi* in Miyakoan and in Ishigaki), many North Ryukyuan varieties display a *[p,k]u > k'u glottalization (such as *pune > *p'uni* 'id.' in North Okinawan regiolects of Kushi and Haneji). A variously reflected instability of the original sound sequences is also attested in environments with an initial close vowel, as attested in cognates of ‡ijo/iju 'fish': *ʔju* (Nakijin, North Okinawa), *zzu* (< *ɿzu, Hirara-Miyakoan), *ju:* (Hateruma-Yaeyaman).

While the exact nature of these innovations is not always predictable, the differentiation of multiple PR close vowel environments is what Ryukyuan daughter languages have in common regardless of their genetic proximity. In other words, regiolects from different genetic subgroupings (North and South Ryukyuan) may differentiate between the same PR settings even though the innovations which serve the purposes of differentiation are not shared. Such innovations can thus provide important clues regarding the history of Ryukyuan, and, by extension, the Japonic family in general.

The goal of the present study is, therefore, to observe the shared innovations as well as retentions pertaining to the historical nasal + close vowel sound sequences in Ryukyuan, with the ultimate focus placed on the question if the analyzed daughter languages differentiate the syllables with original

PR close and mid-vowels or if they have merged the syllables following the mid-vowel raising. A related purpose of this study is to identify where possible the relative chronology of the pertinent sound changes, especially if the changes can still be traced as far back as to the PR level.

The present study has been narrowed to the PR *[+nasal][+syllabic, +close] phoneme sequences.[1] To this author's best knowledge, there has been so far no detailed study devoted specifically to this topic, while Thorpe (1983), the first and so far only monograph dedicated to PR, addresses this area in the following way: "The Ry. [PR] sequence is almost invariably preserved before *s. […] With other sequences, however, unpredictability is the only consistent principle" (Thorpe 1983: 93–94). In a way, then, this paper will also be an attempt to challenge Thorpe's statement and look for some patterns or consistency in the way the discussed sequences are reflected in Ryukyuan daughter languages.

The following representatives from each main genetic Ryukyuan subgroup[2] have been selected for the purpose of the analysis: Ie-Kunigamian[3] (Ie-Okinawan) and Shuri-Okinawan for North Ryukyuan, and Hirara-Miyakoan, Shika-Yaeyaman and Yonaguni/Dunan for South Ryukyuan (Sakishima). Vocabulary items containing the hypothetical PR nasal + close vowel strings will be compared in a number of tables, which will be contrasted with tables presenting the reflexes of nasal + mid-vowel strings. Vocabulary items have been selected so that they reflect as many different PR contexts as possible, although not all combinations are readily available for the reconstruction on the PR level: some of the sequences (such as *nik) are rare, others

[1] For a detailed account of the general vowel behavior after PR *p and *k, cf. Nakamoto (1976: 121–184).

[2] Ryukyuan genetic classification adopted here follows Pellard (2015).

[3] It is a matter of controversy if North Ryukyuan should be genetically divided into two languages, Amamian and Okinawan, or three, Amamian, Kunigamian and Okinawan. Kunigamian is a tentative unit which comprises the southern part of the Amami islands (Yoron and Okinoerabu) and the northern part of the Okinawa main island as well as a number of its satellite islands (such as Ie, Iheya, Izena, Kudaka and Tsuken). Among sources that recognize these three main linguistic entities as the first order division of North Ryukyuan one can find Thorpe (1983), Nishioka (2013), or Niinaga, Ishihara and Nishioka (2014). The sources that do not recognize Kunigamian in the first order division include Pellard (2009), Miyara (2010), or Pellard (2015). Pellard (2009) is a result of a phylogenetic study of shared innovations in 70 morphemes, and its conclusion is that there are no grounds to postulate a closer genetic affinity between south Amami and north Okinawa. Other sources do not address the methodology of how they arrived at the postulated classification.

(such as *nit and *nid) virtually nonexistent or at least not attested[4]. Thus, the shortage of vocabulary displaying a number the PR sequences of interest has challenged this study to a degree, disenabling generalizations regarding certain classes of phonemes or an unambiguous, confident reconstruction of a given sequence with a close or mid-close vowel.

2. Methodology and sources

What follows in Sections 3.1. and 3.2. are tables with contents related to the sound sequences of interest in this paper. Table 1 illustrates the reflexes of PR *mi and *mu, while Table 3 is devoted to the reflexes of *ni and *nu. Table 2 provides a contrastive look at the reflexes of *me and *mo, and so does Table 4 for *ne and *no. The tables are accompanied with analytical comments elaborating on their content.

Due to the aforementioned limitations regarding PR vocabulary with relevant nasal-initial sequences, it was not always possible to find examples of a given sound sequence with clear cognates in all five regiolects. Consequently, in order to secure an amount of data that would at least allow for conducting this tentative study, a decision has been made to include in the tables those vocabulary items that have cognates in at least three of the five languages.

Nevertheless, the available lexicographic sources concerning the relevant regiolects may still not always provide entries on the pertinent vocabulary. In such instances, where possible, the gaps in the table were filled by the data from a given regiolect's close relative: a different Miyakoan regiolect for Hirara, a Yaeyaman regiolect for Shika, and Nakijin or South Amami regiolects for Ie. In the case of Hirara, out of consideration for the innovative characteristics of Miyakoan, other Miyakoan examples have also been provided in which the cognates in question reflect distinctions that have merged in Hirara itself.

Conversely, for a PR sound sequence to be represented in a table, it is enough if it can be posited for at least a single vocabulary token. This choice is a consequence of the already emphasized shortage of some of the sound

[4] Which naturally in itself is an important clue regarding the sound and distribution system of Proto-Ryukyuan and its Proto-Japonic predecessor, and an attempt will be made to address also these issues in Section 5 of this paper.

sequences on the PR level; setting too strict conditions for including a sound sequence in the analysis, such as that it must appear independently in two or three unrelated PR words, would compromise the gist of the study by removing a significant part of analyzable data.

PR reconstructions, where possible, mostly follow Thorpe (1983); items the reconstruction of which accords with Thorpe's have been marked as such with footnotes. In other instances, unless indicated otherwise, the reconstructions are the author's own.

The tables include a number of examples (such as *mos or *nos) in which Ryukyuan internal data alone is insufficient to unequivocally reconstruct a close or mid-vowel. In such instances, the proposed reconstructions are based on preliminary comparisons with mainland Japanese regiolects, a solution which must be thought of as highly tentative due to the lack of a systemic study of the sound correspondences in the latter, but which at this point of the study has been deemed sufficient.

PR reconstructions which follow the proposals in Thorpe 1983 are indicated with a double asterisk symbol <⁂>. This author's own PR reconstructions are marked with a standard single asterisk. Whenever these reconstructions match sources other than Thorpe (1983), it is taken note of in a footnote.

As a rule, the tables do not involve PR reconstructions of inflectional or derivational morphemes, instead indicating the end of the reconstructed stem with a hyphen. This reservation mostly applies to PR verbs, but also to adjectives.

Finally, in cases when a particular reconstruction has to be deemed questionable, such as when a hypothetical single PR string gives different reflexes in a single language for no apparent reason, such a reconstruction has been indicated with a question mark in square brackets: [?].

The main lexicographic sources used for the specific regiolects are as follows.

Ie: Oshio 2009; Shuri: Uchima and Nohara 2006, Sakihara 2006, Kokuritsu Kokugo Kenkyūjo 1987; Hirara: Nevskiy 2015, Shimoji 1979; Shika: Miyara 1980a and 1981; Yonaguni: Ikema 2003, Hirayama et al. 1967.

Unless specified otherwise, the data from these regiolects cited both in and outside the tables comes from these sources.

Additional data from Yaeyaman is generally cited after Miyara (1980, 1980a, and 1981). Nakijin examples come from Nakasone (1983), Nishihara-Miyakoan from Nakama (1988–2001), and Nakachi-Miyakoan from Tomihama (2013).

3. Reflexes of PR nasal + close vowel strings

3.1. PR close vowels following *m

Numeral morphemes in Ryukyuan normally do not appear on their own, but followed by a classifier to form a single word unit. Hence the lexemes involving morphemes 'three' and 'six' in Table 1 are also provided with a classifier (separated with a hyphen in the PR column).

Table 1. Reflexes of PR *mi and *mu.

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
'three'	ǂmii-tu	niːtsi	miːtɕi	miːtsɻ	miːtsɨ	miːtɕi
'road'	ǂmiti [?]	nitɕi	mitɕi	mtsɻ	mitsɨ	amiti
'to be full'	*mit- [?]	nitɕun	mitɕun	mtsɻ	ntsun	nti
'to be chaotic, disordered'	*midarer-	ndʑarijun	ndʑariːn[5]	mdariz 'to be damaged, destroyed'	NA[6]	NA
'gutter, channel'	*mido	NA; Tokunoshima and Okinoerabu nidzu[7]	nndʑu	mdzu	midʑu~ ndʑu	midu~ ndo
'fermented soybean paste'	*miso	nɕuː	nːsu	msu	misu~ miɕu	nsu
'ears'	ǂmimi	nini	mimi	mim	min	min; mintahu
'straw coat'	*mino	njuː	nnu	mnu	nnu	nnu
'to see'	*mir-	njun	nndʑun	miz	miːn~ miːrun	nnun

[5] There also exists a form *mirariːn*, which could be a Japanese loan (< *midareru*).

[6] Although Miyara (1981) gives Shika-Yaeyaman *midariːn~midarirun*, he implies that this is a straightforward loan from Standard Japanese (*midareru*).

[7] Cited after Miyara (1980).

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
‘flea’	*nomi	nuni	numi	num	nun	nun
‘six’	*muu-tu	mu:tsi	mu:tɕi	m:tsɻ	mu:tsɨ/ n:-tsɨ	mu:tɕi
‘to play with, to tamper’	*mutab-	mutadjun; Nakijin muta:bin	mutabun	ntabʑ	ndabun	ntabi-munu ‘toy’[8]
‘to welcome’	*mukaer-	nkejun	nke:in	nkaiz	nkain	nkai
‘centipede’	*mukadʑe	nkadzi	nkadʑi	nkadʑi	nkadza; Hateruma mukadʑi	nkadi
‘dear, lovely; pitiable, unfortunate’	*mudzo	ndzogi:	ndʑo:san	mdzusa	ndzo:sa:n	ndungi; ndaran[9]
‘chest’	*mune	ni:	nni	mni	nni	nni
‘empty’	*muna	na:ɕi	nna	mna	nna	nna
‘early summer’	*orodumu~ orudumu	uridzimu	uridʑin	uvdzɻm	urudzin	urumu

Table 2. Examples of PR *me and *mo.

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
‘eyes’	*me	mi:	mi:	mi:	mi:	mi:
‘water’	*medu[10]	mizi	miʑi	mizɻ	midʑɨ	min
‘earthworm’	*memedu	mimizi	mimiʑa:	mimizɻ	mimidʑɨ	dimimi
‘difficult’	*motika-	mutsikaɕa	mutɕikasan	mutsɻkasɻ	mutsi-kasa:n	mutɕikasa/ mutɕi-kattsa

[8] Miyara (1980a).

[9] Miyara (1980).

[10] Reconstruction as in Vovin 2010:198 and Pellard 2008:302, while Vovin 2017:7 reconstructs a prenasalized fricative *me-^{n}zu*.

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
‘son in law’	*moko	mufu	mu:ku	muku	muku	mugu
‘wheat, barley’	*mogi	mudʑi:	mudʑi	mugz	mun	mun
‘insect’	*moɕi[11]	muɕi	muɕi	musɻ	musɨ	mutɕi
‘straw mat’	*moɕiro	muɕɕu	muɕiru	mussu	musu	musu
‘cloud’	⁑kumo	k’umu:	kumu	fmu	fumu	mmu
‘thigh’	*momo	mumu:	mumu	mumu	mumu	mumu

Starting with reflexes of *mi, the most consistent daughter regiolect is that of Ie, as it reflects all of its *mi occurrences as /ni/. Variations on this reflex include strings in which *mi is followed by a palatalized consonant, as in *nɕu*: ‘fermented soybean paste’:

> *ni > n / __[+coronal, + palatalized], other examples including *ntɕa* ‘earth, soil’ < ⁑mita,

or an alveolar sonorant, as in *nju*: ‘straw coat’ or *njun* ‘to see’:

> *ni > nj / __[+coronal, +sonorant], other examples including *nja* < ⁑mina ‘shellfish’.

Ie *mi reflexes remain in a stable contrast with those of *me, which in turn show up as /mi/. This forms a basis for reconstructing PR *mimi for ‘ears’, but *medu for ‘water’ or *memedu for ‘earthworm’, although the Standard Japanese cognates of all three have /mi/ as the pertinent sound sequence (*mimi*, *mizu* and *mimizu* respectively).

[11] Although a majority of mainland Japanese regiolects listed in Hirayama 1992 have a close vowel in their cognates of both ‘insect’ and ‘straw mat’, a number of lects distributed mostly in northern Honshu as well as the Shimane dialect have a mid-close /o/ instead. Izumo is especially consistent in displaying /mo/ where Standard Japanese and many mainland dialects have /mu/: apart from *moɕi* and *moɕiro* these items include *moko* ‘son-in-law’ (JP *muko*), *mora* ‘village’ (JP *mura*) and *omoɕi* ‘to steam’ (JP *musu*). While these examples alone may not be enough to draw any conclusions about Proto-Japonic, they certainly point to an interesting direction. The mainland evidence combined with the data from Tawada (2010: 334), which includes Old Okinawan *moɕiru* ‘straw mat’ attested in a 16th century source were decisive in this paper’s PR reconstructions **moɕi* and **moɕiro*.

In Shuri, *mi and *me have merged into /mi/ in most environments. Shuri *mi is kept distinct from *me in similar contexts in which *mi drops its *i in Ie, which implies that it was in these settings that the change disambiguating *mi and *me occurred earliest. It appears that for Shuri, the two contexts discussed in Ie can be combined into the following single formula:

> *mi > n~nː / __[+coronal], other examples including *nntɛa* 'earth, soil' < *mita, *nnna* 'all, each, every' < *mina.

Hirara keeps *mi and *me apart mostly through dropping the *i of *mi. Unlike the reflexes of *mu (cf. below), the remaining *m does not undergo assimilation with a following alveolar consonant (cf. *msu*, *mzu*, *mnu* etc.). The deletion of *i does not apply to the PR settings with a long vowel ('three') nor to those followed by *r.

Shika and Yonaguni generally reflect *mi and *me in a similar way. In both languages, *mi and *me have been mostly kept distinct except when reflecting an original long vowel and before *m; unlike Yonaguni, Shika merges *mi with *me in 'soy bean soup', which is believed to reflect a PR *mis string, as well as in 'to see', so in a reflex of a PR *mir string.

Both Macro-Yaeyaman regiolects are similarly inconsistent when it comes to the reflexes preceding coronal obstruents. There is a variation in 'gutter', i.e. before PR *d, with both languages showing merging as well as differentiating word forms. Reflexes in 'road' are also confusing as they merge *mi with *me, even though the merger does not occur in allegedly identical strings of 'to be full'. Given the variation *mid > nd/mid, one may hypothesize that also in the contexts preceding *t there is a variation in the way *mi is reflected: *mit > nt/mit, as the change in question has not been dynamic enough to affect all the occurrences of the pertinent environments. Nevertheless, a possibility that the likes of 'road' and 'to be full' in fact reflect different proto-language strings cannot be yet excluded at this point[12] (hence the question marks attached to both these entries in Table 1).

Whichever the case with 'road', one can generalize that the vowel-dropping change of *mi before coronals and word-finally is attested in all Sakishima languages, underscoring the likelihood that these could be shared innovations inherited from Proto-Sakishima (but not Proto-Ryukyuan).

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[12] These two items are actually some of the examples provided by Thorpe (1983: 94) to illustrate his point about the "unpredictability" of Ryukyuan nasal + close vowel settings.

Concerning the reflexes of *mu, they look virtually the same in Ie and Shuri. The original *mu is retained except in the following environments:

*mu > n / ___[+velar];
*mu > n / ___[+nasal, +alveolar].

Although word-final *mu in PR is rare outside verbal morphology, it has been reconstructed for the 'early summer' token. Here, Shuri underwent another *mu > n change. While Ie retained the PR *mu in this position, the distinction from *mo seems to be preserved in the vowel length (long vs. short /u/; cf. the reflexes in 'cloud' and 'thigh'.

There have been found no vocabulary items unambiguously reconstructible as *mug on the PR level. Consequently, it is not obvious if the above formula should include both voiceless and voiced velars or just be limited to the voiceless velars. The record shows, however, that the changes affecting Ryukyuan sound systems often involve both sounds in a voiced-voiceless pair in an even manner, and especially here, considering the well known phenomenon of Old Japanese prenasalization of voiced consonants[13] which probably extended to PR too, it makes *g all the more likely than *k to induce a *mu > n change through the nasalizing assimilation of a preceding sound. For these reasons it has been tentatively assumed here that the *mu > n change would similarly affect both *muk and *mug sequences. Consequently, the word for 'wheat, barley', frequently (Nakamoto 1976; Nakama 1992) cited as one of the flag examples of Japanese /mu/ (*mugi*) corresponding to Rykyuan /mu/, has been reconstructed here with a mid-close vowel and placed in Table 2.[14]

In Hirara, Shika and Yonaguni, the distinction of *mo and *mu is kept in the same environments as in Ie and Shuri, additionally differentiating between *mut and *mot. On the other hand, it appears that Yonaguni has merged word-final *mo and *mu, while Hirara and Shika underwent a *mu > m/n change similar to Shuri.

Macro-Yaeyaman lects display a mostly consistent *mu > n change, although the Hateruma form for 'centipede', *mukadzi*, reveals that there may al-

[13] Among others, cf. Whitman (1985: 7–21), Frellesvig (2010: 34–43).

[14] Pellard (2008: 354) reconstructs Proto-Japonic 'wheat' as *moNgi, which accords with the *mogi hypothesis here. Further, Hirayama 1992 lists mainland Japanese dialects such Shimane, Tottori or Kōchi which have /o/ in their word form for 'wheat'.

so be instances which merge PR *muk and *mok. By contrast, Hirara has *mu > n realized as [ŋ] before velars and retains the bilabial articulation of the nasal elsewhere.

Furthermore, Hirara and Shika expand the distinction to the *mu-standalone (*mu-only) morpheme environments such as 'six', with the latter showing alternating forms *mu:tsɨ* and *n:tsɨ*. The vowel-less form of the 'six' morpheme appears in Hirara in all known relevant compounds,[15] such as *m:su* 'sixty' or *m:ti* 'six years'. The latter two forms support the hypothesis that at least in Hirara the change *mu > m extended also to the positions preceding alveolar obstruents.[16] By contrast, in Shika the reported archaic form for 'sixty' as retained in folk songs (Miyara 1981: 246) is the *mo and *mu-merging variant *musu*.

Further, a case will be made here to propose a *mu > n change for at least one string in all the pertinent regiolects, meaning the position preceding *dz. The basis for this assessment is found primarily in the 'dear, lovely'/'pitiable, unfortunate' lexeme, reconstructed in Table 1 as PR *mudzo. This word apparently does not have a Standard Japanese cognate, but it can be found in many shapes in Kyushu dialects, which may form a sub-branch with Ryukyuan within the Japonic family (cf. Serafim 2003; Karimata 2015). The examples include items meaning 'dear, lovely' such as *muzo:ka* in Saga, *muzoka* in Satsugū (= mostly Kagoshima) and *muzi:* in Miyazaki (Satō 2009), as well as *muzoka* and *muze:* in Hioki, Kagoshima (Miyara 1980); Nevskiy (2015) also gives examples such as *muze~muzoi~muzoka* in Satsuma (today's Kagoshima), *muzonagi* 'pitiful' in Miyazaki, *muzo:ka* or *muzo:ka* in Tanegashima, and *muzogaru* 'to spoil, to lavish with love' in Higo (today's Kumamoto). With this much mainland comparative data, it appears safe to reconstruct this item with *mu for Proto-Ryukyuan.

The search for unambiguous PR *mud, *mus, *mum and *mur sequences has so far been unsuccessful. An assumption can be made that had these

[15] This does not apply to the alternant allomorphic stem *muju*, as in *mujuka* 'six days' or *muju-nu pstu* 'six people'. The form *muju* also proves that *mo and *mu merged in Hirara if followed by the palatal approximant. Unfortunately, so far no cognates of *muju* have been found in other Ryukyuan regiolects, so the whereabouts of this environment cannot be tested on a more general Ryukyuan level. Interestingly, 'six days' in Shika is *n:ka* with the non-merging stem.

[16] Cognates of these Hirara lexemes have not been yet confirmed for any other regiolect. The Hirara vocabulary comes from Nevskiy's fieldwork notes from 1920s and thus it may reflect the last remnants of native numerals that subsequently died out as the language endangerment progressed in the 20th century.

sequences indeed occur on the PR level, the more innovative lects such as Hirara would keep these distinct from *mod, *mos, *mom and *mor. Until pairs evidencing such a distinction have been found, this author will maintain the outlook that these strings were nonexistent in PR.

3.2. PR close vowels following *n

Table 3. Reflexes of PR *ni and *nu.

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
'load'	*nii	niː	niː	nː	niː	ni
'pimple'	*nikomi~ nikombi; *nikomu~ nikom-bu[17] [?]	nikumu	nikun	nksm/ nksbz	nkubɨ	nigu
'bitter'	*ɳiga/ *nigja	ndʑa-sa	ndʑa-san	ngja	nga	ndan[18]
'to grab, to squeeze'	*ningir-	nindʑun	nidʑiːn	ngzz	NA	NA

[17] Cognates of this item are rather complex. Although Hirara and other Miyakoan forms (Nishihara-Ikema *ntsɲn* and Nakachi-Irabu *ntsɲm*) would seem to suggest a straightforward correspondence with Old Japanese *nikimi*, the reflexes of the second vowel in all the other regiolects are that of a back and not front one; it appears to be the case, then, that Miyakoan underwent a progressive vowel assimilation: *nikomi > *nikumi > *nikimi > PM *nkɲm. The reason for reconstructing PR *o rather than *u is that Shika reflects the syllable in question as PR *ko; PR *ku is expected to reflect as /fu/. A number of other Yaeyaman regiolects assimilated the vowels in a regressive manner, which reinforces the outlook that one should reconstruct *nikomu (~*nikombu)/*nikomi (~*nikombi) also for PS: cf. Kuro *nukkan* and Kohama *nukutsɨ*. The reconstruction of the final vowel is also disputable, with Sakishima reflecting PR *(m)bi and North Ryukyuan reflecting *mu. For now, it has been decided to reconstruct two forms for each respective reflex for PR, although there is a number of different conceivable options, such as considering either a post-PR innovation, or positing *-mu and *-mbi as suffixes and reconstructing only *niko as the actual PR form (a hypothesis supported by Yonagunian *nigu*).

[18] Cited after Thorpe 1983:265. Unfortunately, it has not been possible to determine the original source which Thorpe quoted this form from, which admittedly reduces its reliability. All other Yonaguni sources give the form *suan*/*swan*.

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
'to run away'	*niger/ *nigjer-	ndʑijun	ndʑutɕun	ngiːz	ngin/ ngirun; pingin/ pingirun	hingirun[19]
'right'	*ningi(re) [?]	nidʑiː	nidʑiri	ngzz	neːra	nidi
'north'	*ɲiɕi	niɕi	niɕi	nisɿ; Ikema (Saraha-ma and Nishi-hara) nsɿ	nisɨ	nitɕi
'to boil'	*nir-	niru[20]	niːn	niːz	niːn	nirun
'crab'	*kani[21]	gai	gani	kan	kan[22]	kanna[23]
'money'	*deni	dziniː	dʑin	dzɿn	dzɿn	din
'sea urchin'	*uni	uni; Motobu ui[24]	non-cog-nate (ga-tɕitɕaː)	un	NA; Hate-ruma/ Shiraho un	non-cog-nate (ngidata/ ngida-gura)
'to sew'	*nuu	noːjun	noːin	nuː	noːn	nun
'to pass, to get ahead' /'to pierce'	*nuk-	nutɕun 'to pierce'	nutɕun 'to pierce'	nks~ nuks 'to pierce' nzɿ < *nukɿ 'to pass' (Nishi-hara)	noːn	nuŋun

[19] This Yonaguni form and the corresponding Hirara and Shika forms likely originated from a compound involving the verb 'to go (away)'; cf. also Thorpe (1983: 322–323).

[20] The citation form is morphologically complex and may not reflect the original *nir sequence, so instead the form which Oshio (2009) calls the 'basic attributive' (*rentai genkei*) has been used.

[21] Reconstruction with an initial voiced consonant, *gani, is also conceivable. Thorpe reconstructs this item as *Gani, i.e. with a velar obstruent of non-specified voicing.

[22] Miyara 1981 gives also the form *gani* for Hatoma, which may be a Shuri loanword (a conclusion which agrees with Thorpe (1983: 274).

[23] Cited after Thorpe (1983: 274).

[24] Cited after Hirayama (1992).

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
‘to undress’	*nug-	nudʑun	nudʑun	ngzz; Nakachi nv ‘to remove’	no:n/nugun	non-cognate (*handi*); nuŋi ‘to pull out, to extract’
‘to be wet’	*nurer- [?]	ndijun	nri:n~nuin	mmiz	NA	ngarun
‘dog’	*enu[25]	in(-nu:-kwa)	in	in	in	inu; in (Zodiac)

Table 4. Examples of PR *ne and *no.

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
‘root’	*ne	ni:	ni:	ni:	ni:	ni:
‘to sleep’	*nemb-	nindʑun	nindʑun	niv	nibun	nindun
‘upsetting, painful’	*neta	nita	nita/neta[26]	nita	nitasa ‘indignation’	NA
‘metal’	*kane	hani	kani	kani	kani	kanin[27]
‘throat’	*nodo	nudi	nu:di:	nudu	nudu	nudu
‘bran’	*noka	nuka:	nuka	nuka	nuka	*nugan
‘thief’	*nosudo	nusidu	nusuru	nusɭtu	nusɨturɨ	nuɕitu
‘master, owner’	*noɕi[28]	NA; Nakijin nuɕi	nu:ɕi	nusɭ	nusɨ	nutɕi

[25] The reason why I reconstruct ‘dog’ as *enu rather than *inu is that a PR close vowel would have been assimilated in Hirara, giving Xnnu instead of *in*. Cf. Jarosz (2018).

[26] Classical Ryukyuan form attested in *Kon Kōkenshū* (Nevskiy 2015: 402).

[27] Miyara (1980).

[28] Supportive of these PR reconstructions with *nos, *non and *nor strings where standard Japanese reflects a close back vowel are, again, mainland dialects. The forms of ‘thief’ with /o/ are attested in Izumo, Yamagata, Fukui or Tōyama; for ‘cloth’ in Yamagata, Tōyama or Wakayama; and for ‘to paint’ in Izumo, Yamagata, Niigata or Nagano. Also, Naze-Amami has *nono* for ‘cloth’.

Meaning	Proto-Ryukyuan	Ie	Shuri	Hirara	Shika	Yonaguni
'cloth'	*nono	nunu	nunu	nunu	nunu	nunu
'to paint'	*nur- [?]	nujun	nuin	nu:z	nurun	nurimunu 'lacquer ware'[29]

Overall, Ryukyuan languages display a conspicuous lack of vocabulary that could be traced to PR *nit and *nid sequences, i.e. *ni followed by an alveolar stop. The inventory is not much richer in the alveolar fricative department, the only relatively unambiguous item as of now being 'north'[30]. Consequently, it will not be possible here to generalize on the development of relevant PR sequences preceding alveolar obstruents. As for the flap, it appears that the original PR *ni of *nir has been retained in all daughter languages.

Ie and Shuri have merged *ni and *ne in most of the attested environments. A noteworthy point is that both show different word-final reflexes in 'crab' (Ie *ni > i; Shuri *ni > ni) and 'money' (Ie *ni > ni:; Shuri *ni > n). Unfortunately, Shuri has no attested cognate of the alleged PR *uni 'sea urchin', which is the only *ni-final item in which Ie shows a predictable *ni > ni outcome. Considering the consistency of Sakishima reflexes in the case of this environment, these data may encourage a different reconstruction of all three tokens, albeit on the Proto-North-Ryukyuan rather than PR level. There is also the possibility of variant realizations of the same reflex and/or variant forms descending from variant proto-forms, seeing the coexistence in Nakijin (Nakasone 1982) of forms such as *gai* and *gani*: for 'crab' (the former apparently being the basic one) and *dzin*, *dzini*: and *dzinu*: for 'money'.

Hirara and Macro-Yaeyaman keep *ni and *ne apart in the word-final environment ('crab', 'money', 'sea urchin'). Hirara, however, displays a consistent *ni > n change also in most other environments, with the exception of *r ('to boil'), *s ('north'), and possibly other relevant sequences with alveo-

[29] Miyara (1980).

[30] Apart from the Ikema vowel-less reflex nsɿ, the reconstruction *niɛi is encouraged by the fact that in 16th century Old Okinawan sources the item in question is spelt consistently with <i> rather than <e> (Tawada 2010: 350, 355).

lar consonants which so far have not been found in PR. Also, another Miyakoan regiolect, Ikema, has been recorded to maintain *ni > n also in 'north' (Nevskiy 2015 gives the form *msŋ* for Sarahama and Nishihara varieties, while Nakama 2001 gives *nsŋ* for Nishihara). This is an important clue which implies that the *nis and *nes distinction must have been maintained in some way until as late as Proto-Miyakoan.

The most equivocal environment concerning the *ni and *ne distinction is the position before velars, and it is for this reason that as many as six entries in Table 3 contain alleged reflexes of *nik or *nig.

Pan-Ryukyuan cognates of items containing the sequence *nik are rare, which fact is reflected by 'pimple' being its only representative in Table 3. Cognates of 'pimple' would imply that PR *ni was retained in all regiolects except Hirara and Shika. The change *nik > nk there is further supported by a 'to eat' honorific verb, which is *nkjaːgiz* in Hirara and *nkeːn* in Shika. In modern Northern Ryukyuan lects, a cognate *ntɛagain* has been found in Motobu (Northern Okinawan; Hirayama 1992). but its modestive cognates meaning 'to offer' can be found in Classical Ryukyuan sources: *nukijageru*[31] in *Omorosōshi* (Takahashi 1991:39) and *nikiageru* (Tomihama 2013: 794–975) as well as *nikijagere~nikijagaure*[32] (Nevskiy 2015: 425) in *Kon Kōkenshū*, which enables a tentative PR reconstruction *nikiager- or *nukiager-[33].

Reflexes of *nig show a much more complex picture. In all *nig-reflecting cognates again it is only Hirara that shows a uniform *ni > n change and a consequent distinction of *ni and *ne. As for the other regiolects, they show this change in their cognates of 'bitter' and 'to run', but not so in 'right' and 'to grab'. The Ie form reflecting 'to grab', *nindzun*, can be hypothesized to reflect not a plain voiced stop, but a prenasalized one, or even a phonemical sequence of nasal + velar consonant. It is due to this assumption that 'to grab' and 'right' have been reconstructed in Table 3 as *ning, as opposed to 'bitter' and 'to run' with their plain velar obstruent reconstruction. Even so, one still reaches the wall when facing the question why 'right' reflects in Ie as *nidzi* and not Xninzi (not to mention the highly, sporadically innovative

[31] This spelling follows directly the syllabic spelling of *Ōmorosōshi* and does not necessarily represent the sound value of the item in question.

[32] Here the spelling also follows the syllabic spelling of the source material. Nevskiy (2015) suggests the respective pronunciations to have been *nʲkjagiri* and *nʲkjagoːri*.

[33] It is not clear if the PR verb should be reconstructed as honorific or modestive.

Shika form). Putting these intricacies aside, however, one can conclude that the PR *nig environment did trigger a *ni > n change in the analyzed Ryukyuan regiolects at least in some circumstances.

PR *nu and *no are the most consistently merged nasal + vowel sequence, reflecting simply as *nu in most environments of all languages. At the same time, the inventory of PR sequences with *nu itself appears relatively limited, including as of this paper's hypothesis only *nuu, *nuk, *nug, *nur and *nu#. This indicates an obvious distributional imbalance between PR *nu and *no.

Regarding the differentiation of *nu and *no, Hirara proves again to be the most innovative regiolect, keeping *nu and *no apart before velars:

nu > n / ___[+velar].

On the other hand, all of the examined languages show the dropping of *u in word-final position, as in 'dog':

nu > n / ___#.

Some interpretational controversy is caused by the contrast of PR *nur in 'to be wet' with *nor in 'to paint', as it involves is a pair of morphologically related transitive-intransitive verbs. It may also be the case that 'to paint' is a relatively old (and thus morphophonologically adjusted, ex. *nuru* > Ie *nujun*, Hirara *nu:z*) borrowing from mainland Japanese, while 'to be wet' represents inherited Ryukyuan lexicon with original PR *nur rather than *nor. Anyhow, cognates of 'to be wet' involved some complex sound changes in the respective daughter languages, which may be hypothesized to have followed a course like presented below:

*nurer- > *nrir- > ndij- (Ie);
*nurer- > *nrir- > nri- (Shuri);
*nurer- > *nurir- > *murir- > *mriz > *mniz > mmiz (Hirara)[34].

Interpreted in such a way, *nur would be the only non-final environment to differentiate *no and *nu in all the tested regiolects, to the exclusion of Shika due to the lack of evidence.

[34] If this interpretation is correct, it would be a variation on the Miyakoan Flap Assimilation Rule (FAR), discussed for obstruents in Jarosz (2015) and Jarosz (2018).

4. Data synthesis

Hereafter the contents of Tables 1 and 3 will be summarized in the form of further four tables displaying the environments in which the languages in question have kept the PR nasal + close vowel sequences apart from the nasal + mid-vowel ones, as well as the sum of such non-merging environments against the total number of the pertinent PR environments identified and addressed in this paper. The sums are then presented in the form of radar graphs intended as a convenient illustration of how innovative the analyzed regiolects are regarding the specific nasal + close vowel sequences.

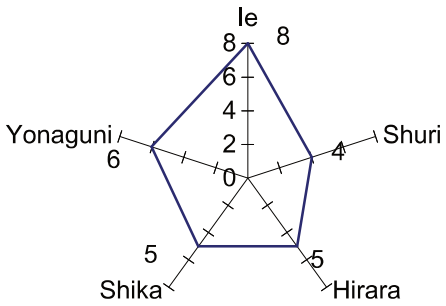
When there has been no cognate of a given item found in a specific regiolect but there has been one found in a closely related variety, or where (as is the case with Hirara vs. other Miyakoan lects) the analyzed regiolect itself may have a conservative, non-differentiating cognate but a closely related variety has an innovative one, it is that innovative variety that has made it into the count below.

Table 5. Differentiation of PR *mi from *me.

PR environment	Ie	Shuri	Hirara	Shika	Yonaguni
*mii	✔	✘	✘	✘	✘
*mit	✔	✘	✔	✔	✔
*mid	✔	✔	✔	✔	✔
*mis	✔	✔	✔	✘	✔
*mim	✔	✘	✘	✘	✘
*min	✔	✔	✔	✔	✔
*mir	✔	✔	✘	✔	✔
*mi#	✔	✘	✔	✔	✔
Total/8	8	4	5	5	6

Only one of the discussed strings, *min, uniformly shows the differentiation of *mi and *me through the deletion of the vowel in the former. This could imply that by the late PR stage the vowel there may already have been real-

ized as extra-short, possibly following its nasalization,[35] or that it had been dropped altogether.[36] The remaining developments occurred after the split.



Graph 1. Differentiation of PR *mi from *me.

It is worth observing that Shuri and Ie display here no shared innovations on the Proto-North-Ryukyuan level. Conversely, innovations and retentions throughout Sakishima are generally matching except for the *mir innovation in Macro-Yaeyaman, unshared by Hirara, and the *mis retention in Shika.

All languages share the innovations of PR *muk, *mudz and *mun. In these environments, again, an extra short realization or deletion of *u can be posited for the late PR period. Further, Sakishima regiolects share the differentiation of *mut. Also like was the case with *mi, no shared innovations can be seen on the North Ryukyuan level alone.

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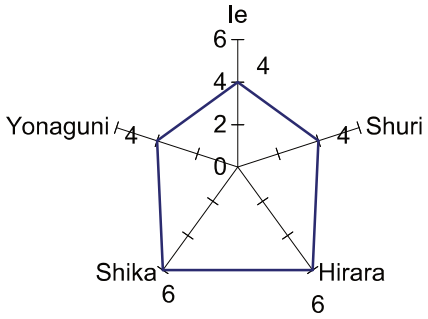
[35] The first change leading to a loss of a vowel that comes to mind is devoicing. Devoicing of a vowel in some of the discussed PR settings is, however, extremely unlikely as there the vowel is surrounded by voiced consonants. A more accurate explanation of the postulated PR changes should be the assimilatory nasalization of the vowel which would blur both the articulatory and acoustic boundaries between the consonant and vocalic segment, and eventually lead to the disposing of the vowel on the phonological level altogether.

[36] Given the Hirara reflex of *m, i.e. the retention of the original bilabial consonant, it should lead to positing a moraic PR *m with appearances unrestrained to just before a homorganic consonant. This is rather unlikely given that in modern Ryukyuan, like in Standard Japanese, appearances of [m] before a consonant seem to be bound by the homorganic constraint in all regiolects apart from Miyakoan, at least to the author's best knowledge.

Table 6. Differentiation of PR *mu from *mo.

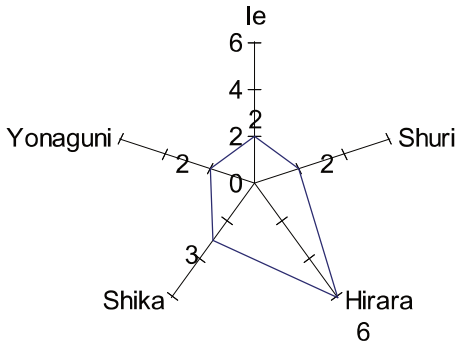
PR environment	Ie	Shuri	Hirara	Shika	Yonaguni
*muu	✗	✗	✓	✓	✗
*mut	✗	✗	✓	✓	✓
*muk	✓	✓	✓	✓	✓
*mudz	✓	✓	✓	✓	✓
*mun	✓	✓	✓	✓	✓
*mu#	✓	✓	✓	✓	✗
Total/6	4	4	6	6	4



Graph 2. Differentiation of PR *mu from *mo.

Table 7. Differentiation of PR *ni from *ne.

PR environment	Ie	Shuri	Hirara	Shika	Yonaguni
*nii	✗	✗	✓	✗	✗
*nik	✗	✗	✓	✓	✗
*nig	✓	✓	✓	✓	✓
*ning	✗	✗	✓	✗	✗
*nis	✗	✗	✓	✗	✗
*nir	✗	✗	✗	✗	✗
*ni#	✓	✓	✓	✓	✓
Total/7	2	2	6	3	2

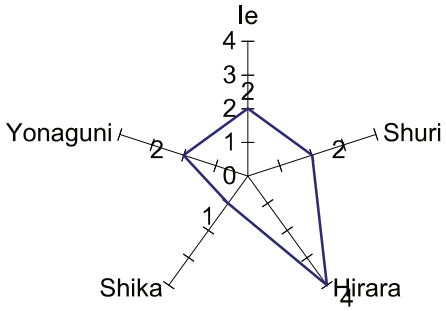


Graph 3. Differentiation of PR *ni from *ne

A striking characteristic of PR *ni is how largely it has been merged in most environments of most languages: Hirara is the only one here to consistently have avoided the *ni and *ne merger save for the PR *nir setting. All languages preserve the distinction in the original PR *nig setting, implying the shortening or deletion of *i at the late PR stage. A similar point can be made about the word-final *ni strings, although here the North Ryukyuan reflexes are largely inconsistent; one can argue that a tendency to drop the final vowel may have begun in PR, but was far from completion at the time of the split. Again, there are no shared innovations exclusive to the North Ryukyuan regiolects here. In Sakishima, the change *nik > nk is shared by Hirara and Shika, but not Yonaguni.

Table 8. Differentiation of PR *nu from *no.

PR environment	Ie	Shuri	Hirara	Shika	Yonaguni
*nuu	✕	✕	✕	✕	✕
*nuk	✕	✕	✔	✕	✕
*nug	✕	✕	✔	✕	✕
*nur	✔	✔	✔	? (NA)	✔
*nu#	✔	✔	✔	✔	✔
Total/5	2	2	4	1	2



Graph 4. Differentiation of PR *nu from *no.

Of all the PR sound sequences discussed here, PR *nu is by far the rarest and at the same time the least innovative one, with a relatively consistent differentiation from PR *no observed only in the expectedly innovative Miyakoan. Perhaps just as strikingly, the one innovation shared here by all the examined lects, meaning the deletion of the word-final *u in *nu, should likely be reconstructed already for PR.

Otherwise, apart from the Hirara pre-velar positions and the arguably ambiguous *nur strings everywhere except Shika, *no and *nu have merged in all the discussed strings, conversely implying that the merger of *nuu may also have been completed on the PR level. A symmetry can be seen in the assumed lack of PR *mus and *nus sequences which allowed for the raising of *mos(~moɛ) and *nos(~noɛ) in a way that did not trigger a mid- and close-vowel merger. By contrast, although *mun is differentiated from *mon in all languages, indicating a detectable presence of both *mun and *mon in PR, there is insufficient evidence to reconstruct also *nun apart from *non in PR.

5. Theoretical implications and conclusions

A careful look at the changes pertaining to the PR nasal + close vowel sequences has revealed that, in fact, a noteworthy part of these changes can be attributed to the PR level, as they are innovations shared by all of the five analyzed regiolects. To recapitulate, these changes include:

– *mid, *min;
– *muk, *mudz, *mun;

– *nig, *ni#;
– *nu#.

Equally telling are the distributional gaps reconstructed for PR, with an apparent lack of strings with close vowels (usually followed by alveolar consonants), such as *mut, *mug, *mus, *mum, *mur, *nit, *nid, *nus and *nun.

Addressing the goals undertaken by the present study, the following can be postulated about the relative chronology of the nasal + close vowel changes in Ryukyuan.

(1) Starting with the non-merging strings *nos and *non, the change *no > *nu was the first to occur still in PR. Possibly due to the functional reasons of maintaining the original distinction, the vowel in *nu# would parallelly be deleted to keep it apart from the *no > *nu vowel[37]. The one environment which may have remained phonologically unaffected by the *no > *nu raising still at the PR stage although it occurred in daughter languages later was before velars; in other words, one can postulate the retention of the original *nok and *nog sequences until the split of PR.

(2) Perhaps as an analogy, the change *mo > *mu was set off following *no > *nu. It is considered a later change here due to the fact that it did not result in as many mergers as *no > *nu, although given the distributional limitations in the initial PR *mu strings, it may also be the case that changes to both *no and *mo occurred in a roughly parallel fashion[38], with *no > *nu being more rapid and/or the *no and *nu distinction less functionally loaded. The vowel of *muk, *mudz and *mun was altered (shortened and/or nasalized and/or deleted) on the PR level.

(3) The change *ne > *ni resulted in a considerable number of *ne and *ni mergers in daughter languages, while the shift *me > *mi produced a larger number of environments differentiating between the PR *me and *mi – which can very likely be attributed to the fact that *mi is the single

[37] If Tawada's (2010) 16th-century Okinawan attestations are to be believed, the final raising *no > nu only happened post-PR: cf. *nuno* 'cloth' (Tawada 2010: 355) or nominative-genitive marker -no (Tawada 2010: 346–356), contrasting with the first syllable of *nuno* or with *nuɕi* 'master' (Tawada 2010: 348, 350, 353).

[38] At any rate, 16th century Old Okinawan apparently had a close vowel in its form for 'wheat, barley', *mugi* (Tawada 2010: 338).

one among the close vowel strings analyzed in this paper which does not display the distributional gaps in PR[39]. With the front vowel reflexes, however, one has less confidence estimating if it was *ne > *ni or *me > *mi that occurred first. On the one hand, the daughter languages reflexes of *ni are in general quite diverse, displaying virtually no common retentions; on the other, given that Hirara differentiates from *ne six out of seven attested *ni environments, the onset of changes in *ne and *ni may have occurred on the PR level, too, even if only in the shape of allophonic realization, such as *ne realized as [nɪ].

(4) PR *me and *mi are kept distinct by the means of a similar shift (*mi > n) in all five languages in two environments, which given the inconsistency of *ni reflexes might indicate that in the *me > *mi and *ne > *ni pair it was the former which occurred first, a reverse order from *mo > *mu and *no > *nu. Furthermore, on the flip side of the lack of the aforementioned distributional gaps characteristic of PR *nu, *mu and to a smaller extent also *ni, *mi is also probably the best attested or most frequently occurring combination of PR nasal and close vowel. Consequently, it is the one that has undergone most innovations in daughter languages, both shared and independent, with the notable example of Ie consistently displaying *mi > ni in all of its post-PR developments.

Systemically speaking, it is in fact rather thought-provoking that there has been found no single close vowel string that would produce innovations on the PR level for all possible nasal + close vowel combinations (that is *mi, *mu, *ni and *nu), or even for pairs with the same vowel (*mi and *ni or *mu and *nu).

In an attempt to derive a theory generalizing upon which environments produced innovations on the PR level and why, one is encouraged to link the inception of the pertinent chain shifts[40] to the raising of the vowels in the strings where the close vowel distributional gaps as listed in the beginning of this section had existed. As the vowels of these strings moved from mid to close articulation, now the vowel distribution imbalance was in favor of close vowels, causing analogical changes to occur also in those strings which had

[39] In the case of the distribution of PR *mi-*me pair, the reverse seems true: as it appears, the strings containing PR *me may be rather limited in both their composition and frequency.

[40] The notion of chain shifting is understood here as in Labov (1994), Hock (1991) or Campbell (1998).

already had their close vowel counterparts, in other words those whose raising would have resulted in a merger. This in turn may have induced changes to the original close vowels in a push-chain-like manner.

Consequently, it appears certain that at least a part of the discussed strings underwent a phonologically relevant change in *i and *u already at the PR level, contributing to a further reduction of strings with mid-vowels, which as a result would render the remaining mid-vowel strings more and more odd and obsolete, and becoming a distant cause for the further phonological changes of PR *i and *u also after the split. This is also one conceivable explanation of the symmetry of changes attested in mid- and close vowel reflexes of North and South Ryukyuan which cannot be traced back to PR, such as Ie and Sakishima reflexes of *mit in 'to be full'.

A list of new, late PR reconstruction proposals which account for the innovations shared in all the examined daughter languages have been included in Table 9. Depending on the specific environment, the original/early PR *i and *u are either represented as extra short or deleted.

For the purpose of comparison, Table 10 provides a number of examples of how the PR mid-vowels evolved from early to late PR. In strings where there is assumed a distributional close vowel gap in early PR, a plain close vowel is proposed for late PR. Obviously, not all post-nasal mid vowels could have been raised by the late PR, but one may expect most of them to at least have had relatively high allophonic realizations.

Table 9. Late Proto-Ryukyuan reflexes of the earlier *i and *u.

Meaning	Early PR	Late PR
'to be chaotic, disordered'	*midarer-	*mĭdarer-
'gutter, channel'	*mido	*mĭdo
'straw coat'	*mino	*mĭno
'to welcome'	*mukaer-	*mŭkaer-
'centipede'	*mukadʑe	*mŭkadʑe
'dear, lovely; pitiable, unfortunate'	*mudzo	*mŭdzo
'chest'	*mune	*mŭne
'bitter'	*niga/*nigja	*nga/*ngja
'to run'	*niger-/*nigjer-	*nger-/*ngjer-
'dog'	*enu	*en

Table 10. Late Proto-Ryukyuan reflexes of the earlier *e and *o.

Meaning	Early PR	Late PR
‘eye’	*me	*mɪ
‘water’	*medu	*mɪdu
‘son in law’	*moko	*mʊko
‘insect’	*moɕi	*muɕi
‘root’	*ne	*nɪ
‘master, owner’	*noɕi	*nuɕi
‘cloth’	*nono	*nunʊ

Of the five discussed regiolects, the most innovative is Hirara, while the most conservative is Shuri. Furthermore, not a single innovative environment has been found in Shuri in which the innovation would not be shared with another Ryukyuan regiolect. Perhaps more confusingly, no such innovation has been found to be shared exclusively by Ie and Shuri, an observation which upon a more detailed future scrutiny including different PR reflexes may place a question mark by North Ryukyuan as a valid genetic subgrouping, even though it has so far been taken as a given in Ryukyuan linguistics.

Coming back in a full circle to Thorpe’s remark that “unpredictability is the only consistent principle” when it comes to Ryukyuan close vowels after nasals cited early in this paper, one can observe that while indeed, not all of the gathered data leads to clear-cut and consistent conclusions – which is hardly the case with any other sound change in a living language – introducing a certain level of detail in one’s examination of Ryukyuan cognates does resolve a number of questions, as well as allows for positing a number of tenable hypotheses.

A more comprehensive theory concerning the background of post-nasal changes in Ryukyuan, in other words what started these changes and why they advanced to such a degree, will have to wait until the present study has reached a more mature stage. In the light of the findings of this paper, however, this author is inclined to look for the answers in functional theories, and seek explanations in the language’s drive to restore its systemic balance in the vein of Martinet 1952. Namely, one can look for the catalyst of the changes under discussion in the systemic imbalance of mid- and close vowel distribution that had already existed when Proto-Ryukyuan split off from

Proto-Japonic. Supposing PR really had such numerous gaps in the post-nasal distribution of close vowels as discussed in this paper, the "unpredictability" pointed out by Thorpe might be thus a direct result of the unpredictability of sound sequences that were initially lacking in PR.

Although the analyzed regiolect and vocabulary samples are far from sufficient to draw any definite conclusions, this tentative research does seem to have served its purpose in pointing out specific innovation and retention tendencies regarding the PR nasal + close vowel sequences. These tendencies can now chart the way for further research of this area, suggesting what kind of vocabulary should be examined from now on to bring one closer to a systemic picture of PR vowels and the changes more or less directly related to them that occurred in Ryukyuan daughter languages.

References

Campbell, L. 1998. *Historical linguistics: an introduction*. Cambridge, MA: The MIT Press.

Frellesvig, B. 2010. *A history of the Japanese language*. New York: Cambridge University Press.

Hirayama T., in collaboration with I. Ōshima and M. Nakamoto. 1967. *Ryūkyū Sakishima hōgen-no sōgōteki kenkyū* [general research on the Sakishima Ryukyuan dialects]. Tokyo: Meiji Shoin. ///平山輝男『琉球先島方言の総合的研究』大島一郎、中本正智共著　東京都・明治書院。

Hirayama T. 1992. *Gendai nihongo hōgen daijiten* [A great dictionary of modern Japanese dialects]. Tokyo: Meiji Shoin. /// 平山輝男『現代日本語方言大辞典』東京都：明治書院。

Hock, H. H. 1991. *Principles of historical linguistics. Second revised and updated edition*. Berlin, New York: De Gruyter Mouton.

Ikema N. 2003. *Yonagunigo jiten* [A dictionary of Yonagunian]. Okinawa-ken Yaeyama-gun Yonaguni-chō aza Yonaguni [private publication]. /// 池間苗 『与那国語辞典』 沖縄県八重山郡与那国町字与那国。

Kokuritsu Kokugo Kenkyūjo (ed.) 1987. *Okinawago jiten* [A dictionary of Okinawan language]. Tokyo: Ōkurashō Insatsukyoku. /// 国立国語研究所編『沖縄語辞典』東京都：大蔵省印刷局。

Jarosz, A. 2015. Nikolay Nevskiy's Miyakoan dictionary: reconstruction from the manuscript and its ethnolinguistic analysis. (PhD dissertation, Adam Mickiewicz University, Poznań.)

Jarosz, A. 2018. "Reflexes of Proto-Ryukyuan *i and *u in Miyakoan as a chain shift". To be published in *Lingua Posnaniensis* 61.

Karimata, S. 2015. "Ryukyuan languages: A grammar overview". Translated from Japanese by J. Haig. In: Heinrich, P., S. Miyara and M. Shimoji (eds.), *Hand-*

book of the Ryukyuan languages: history, structure, and use. Berlin, Boston: De Gruyter Mouton. 113–140.

Labov, W. 1994. *Principles of linguistic change.* (Volume 1: *Internal factors*.) Oxford: Blackwell Publishers Inc.

Martinet, A. 1952. "Function, structure, and sound change". *Word* 1–8, April 1952. 1–32.

Miyara, S. 2010. "Japonikku gozoku-no naka-no ryūkyū goha: keitō, taikei, oyobi genkyō [Ryukyuan group of languages as a part of Japonic family: its origins, systems and current situation]". In: Heinrich, P. and M. Shimoji (eds.), *Essentials in Ryukyuan language documentation*. Tokyo: Research Institute for Languages and Cultures of Asia and Africa, Tokyo University of Foreign Studies. 12-41. // 宮良信詳「ジャポニック語族の中の琉球語派：系統、体系、及び現況」。パトリック・ハインリッヒ、下地理則編『琉球諸語記録保存の基礎』東京外国語大学アジア・アフリカ言語文化研究所。

Miyara, T. 1980 [1926]. *Miyara Tōsō zenshū 7. Saihō nantō goikō* [The complete works of Tōsō Miyara, vol. 7. Manuscript wordlist from the fieldwork in the Southern Islands]. Tokyo: Daiichi Shobō. /// 宮良當荘『宮良當荘全集 7 採訪南島語彙稿』東京都・第一書房。

Miyara T. 1980a [1930]. *Miyara Tōsō zenshū 8. Yaeyama goi kōhen* [The complete works of Tōsō Miyara, vol. 8. Yaeyaman vocabulary, part 1 of 2]. Tokyo: Tōyō Bunko. /// 宮良當荘『宮良當荘全集 8 八重山語彙　甲篇』東京都・東洋文庫。

Miyara, T. 1981 [1930]. *Miyara Tōsō zenshū 8. Yaeyama goi otsuhen* [The complete works of Tōsō Miyara, vol. 8. Yaeyaman vocabulary, part 2 of 2]. Tokyo: Tōyō Bunko. /// 宮良當荘『宮良當荘全集 8 八重山語彙　乙篇』東京都・東洋文庫。

Nakama, M. 1992. *Ryūkyū hōgen-no kosō* [old layers of Ryukyuan dialects]. Tokyo: Daiichi Shobō. /// 名嘉真三成　『琉球方言の古層』　東京都・第一書房。

Nakama, M. 1988-2001. "Miyako Nishihara hōgen-no goi [Nishihara-Miyakoan vocabulary]". *Ryūkyū-no hōgen* 13 (1988), 131–159; 14 (1989), 1–31; 15 (1990), 3–50; 16 (1991), 21–55; 21 (1996), 136–168; 22 (1997), 149-173; 23 (1998), 109–134; 24 (1999), 113–130; 25 (2000), 159–167; 26 (2001), 91–104. Vols. 25, 26 co-authored by K. Nakamoto. Tokyo: Hōsei Daigaku Okinawa Bunka Kenkyūjo.

名嘉真三成 「宮古西原方言の語彙」『琉球の方言』13 号～26 号　25~26 号は中本謙共著　東京都・ 法政大学沖縄文化研究所。

Nakamoto, M. 1976. *Ryūkyū hōgen on'in-no kenkyū* [Phonological research of Ryukyuan dialects]. Tokyo: Hosei Daigaku Shuppankyoku. /// 中本正智　『琉球方言音韻の研究』　東京都・法政大学出版局。

Nakasone, S. 1961. "Ryūkyū hōgen gaisetsu [An outline of Ryukyuan dialects]". In: Hokama, S. (ed.), 1972, *Okinawa bunka ronsō 5: gengogaku* [papers on Okinawan culture 5: linguistics]. Tokyo: Heibonsha. 65–79. /// 仲宗根政善　「琉球方言概説」外間守善編『沖縄文化論叢 5 言語学』東京都・平凡社。

Nakasone, S. 1983. *Okinawa Nakijin hōgen jiten* [a dictionary of Nakijin dialect in Okinawa]. Tokyo: Kadokawa Shoten. /// 仲宗根政善 『沖縄今帰仁方言辞典』東京都・ 角川書店。

Nevskiy, N.A. 2005. *Miyako hōgen nōto: fukushabon* [Notes on Miyakoan dialects: facsimile edition], vols. 1–2. Hirara: Okinawa-ken Hirara-shi Kyōiku Iinkai. /// ニコライ• A • ネフスキー『宮古方言ノート　複写本』上•下　平良市・沖縄県平良市教育委員会。

Nevskiy, N.A. 2015. *Nikolay Nevskiy's Miyakoan dictionary. The reconstructed dictionary*. (Edited by A. Jarosz as a volume of Jarosz 2015.) Poznań: Adam Mickiewicz University.

Niinaga, Y., M. Ishihara and S. Nishioka. 2014. *Kita Ryūkyū shogo (amamigo, kunigamigo, okinawago)-no zonzokuryoku to kikido* [Vitality and level of endangerment of North Ryukyuan languages: Amamian, Kunigamian and Okinawan]. In: Shimoji, M. and P. Heinrich (eds.), *Ryūkyū shogo-no hoji-o mezashite. Shōmetsu kikigengo-o meguru giron-to torikumi* [how to preserve Ryukyuan languages? Discussions and initiatives devoted to endangered languages]. Tokyo: Koko Shuppan. 96–143. /// 下地理則・パトリック　ハインリッヒ編『琉球諸語の保持を目指して　消滅危機言語をめぐる議論と取り組み』東京都：ココ出版。

Nishioka, S. 2013."*Kunigamigo* gaisetsu [An outline of *Kunigami* language]". In: Okinawa Daigaku Chiiki Kenkyūjo (ed.), *Ryūkyū shogo-no fukkō* [Restoration of Ryukyuan languages]. Tokyo: Fuyō Shobō. 43–64. /// 西岡敏　『「国頭語」概説』沖縄大学地域研究所編　『琉球諸語の復興』東京都・芙蓉書房。

Oshio, M. 2009. *Okinawa Ie-jima hōgen jiten* [A dictionary of the dialect of the Ie island in Okinawa]. Ie: Ie-son Kyōiku Iinkai. /// 生塩睦子『沖縄伊江島方言辞典』伊江村・伊江村教育委員会。

Pellard, T. 2009. *Ōgami – Éléments de description d'un parler du Sud des Ryūkyū* [Ōgami: Basic description of a language of the southern Ryūkyūs]. (PhD dissertation, École des hautes études en sciences sociales, Paris.)

Pellard, T. 2015. "The linguistic archeology of the Ryukyu islands". In: Heinrich, P., S. Miyara and M. Shimoji (eds.). *Handbook of the Ryukyuan languages: history, structure, and use*. Berlin, Boston: De Gruyter Mouton. 13–37.

Sakihara, M. 2006. *Okinawan-English wordbook. A short lexicon of the Okinawan language with English definitions and Japanese cognates*. (Edited by S. Curry. Supervising editors: L.A. Serafim and S. Karimata.) Honolulu: University of Hawai'i Press.

Satō, R. 2009. *Todōfukenbetsu zenkoku hōgen jiten* [A dictionary of Japanese dialects divided according to prefectures]. Tokyo: Sanseido. /// 佐藤亮一『都道府県別全国方言辞典』東京都：三省堂。

Serafim, L.A. 2003. "When and from where did the Japonic language enter the Ryukyus? – A critical comparison of language, archaeology, and history". In: Osada, T. and A. Vovin (eds.), *Perspectives on the origins of the Japanese language*. Kyoto: International Research Center for Japanese Studies. 463–476.

Shimoji, K. 1979. *Miyako-guntōgo jiten* [Dictionary of the language of the Miyako island cluster]. Naha: Shimoji Yoneko. /// 下地一秋　『宮古群島語辞典』那覇市・ 下地米子。

Tawada, Sh. 2010. *Okinawago on'in-no rekishiteki kenkyū* [Historical research on the Okinawan language]. Hiroshima: Keisuisha. /// 多和田眞一郎『沖縄語音韻の歴史的研究』広島市・渓水社。

Thorpe, M.L. 1983. Ryūkyūan language history. (PhD dissertation, University of Southern California, Los Angeles.)

Tomihama S. 2013. *Miyako Irabu hōgen jiten* [A dictionary of Irabu-Miyakoan]. Naha: Okinawa Taimusu-sha. /// 富浜 定吉『宮古伊良部方言辞典』那覇市・沖縄タイムス社。

Vovin, A. 2010. *Koreo-Japonica: a re-evaluation of a common genetic origin*. Honolulu: University of Hawai'i Press and Center for Korean Studies, University of Hawai'i.

Vovin, A. 2017. "Origins of the Japanese language". *Oxford Research Encyclopedia of Linguistics*, subject: Historical Linguistics, Language Families/Groups/Areas. Retrieved from: <https://www.academia.edu/35280086/Origins_of_the_Japanese_Language>. (Last accessed 23 October 2018.)

Uchima, C. and M. Nohara. 2006. *Okinawago jiten – Naha hōgen-o chūshin-ni* [A dictionary of Okinawan language with a special focus on Naha dialect]. Tokyo: Kenkyūsha. /// 内間直仁、野原三義編著『沖縄語辞典―那覇方言を中心に』東京都・研究者。

Whitman, J.B. 1985. The phonological basis for the comparison of Japanese and Korean. (PhD dissertation, Harvard University.)

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