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RYUKYUAN AND THE RECONSTRUCTION OF PROTO-JAPANESE-RYUKYUAN

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1 THE RYUKYUAN LANGUAGES

The Ryukyuan (Ry.) languages¹ are spoken in the Ryukyu Islands, a chain of around 50 inhabited islands stretching from southeast of Kyushu to northeast of Taiwan and naturally delimited by the Kuroshio Current. Ryukyuan subdivides into *at least* five languages, which are not mutually intelligible: Amami (Ama.), Okinawan (Oki.), Miyako (Miy.), Yaeyama (Yae.), and Yonaguni (Yonag., a.k.a. Dunan). Amami and Okinawan belong to Northern Ryukyuan, while Miyako, Yaeyama, and Yonaguni form together the Southern Ryukyuan group (Pellard 2015). All Ryukyuan languages are highly endangered: fluent speakers are usually in their late sixties or older and are bilingual in Japanese (Jp.), while younger generations are monolingual in Japanese.

The Ryukyuan languages form a sister branch of Japanese within the Japanese-Ryukyuan family² (Pellard 2015). Ryukyuan and Japanese most likely split during the first half of the first millennium AD, and the ancestor of Ryukyuan was then spoken on Kyushu for several centuries before it migrated to the Ryukyus around the 10th century (Pellard 2013a; 2015; 2016a).

The following will address, after a brief historiographic overview, those phonological (vowels, consonants, accent/tone), grammatical (verbs, adjectives, case, *kakari-musubi*), and lexical (pronouns, demonstratives) topics for which the contribution of Ryukyuan is, or has been claimed to be, important for the reconstruction of proto-Japanese-Ryukyuan (pJR), the common ancestor of Japanese and Ryukyuan.

2 RYUKYUAN HISTORICAL LINGUISTICS

Though the close similarity between Japanese and Ryukyuan (usually Okinawan) had long been repeatedly noticed and their genetic relationship recognized before (Osterkamp 2015), the first historical-comparative study of Ryukyuan is Chamberlain's (1895) comparative grammar of (Tokyo) Japanese and (Shuri) Okinawan. Chamberlain's pioneer work is however mainly of historiographic interest today, as it suffers from the limitations of its pre-Neogrammarian methodology and

¹ See Shimoji & Pellard (2010) and Heinrich et al. (2015) for a general introduction.

² The position of the Hachijō language remains to be ascertained (Hirako & Pellard 2013). Though most specialists would group it with Japanese, and specially Eastern Old Japanese (Alexander Vovin and John Kupchik, p.c. December 2017), the relevant evidence has yet to be published.

conceptions of linguistic change,³ and from the shortage of descriptive linguistic studies on both Old Japanese (OJ) and Ryukyuan at that time.⁴

It was Hattori Shirō who first undertook a strict application of the modern comparative method to Japanese and Ryukyuan on a large scale, taking advantage of the blossoming of descriptive studies on Ryukyuan in the postwar period, in which Hattori himself played an important role. After numerous and important contributions to the reconstruction of pJR (e.g. Hattori 1932; 1959a; 1976; 1977), Hattori's comparative work culminated with the publication of his *magnum opus* “Nihon sogo ni tsuite” (1978–1979) as a series of 22 articles (reprinted in Hattori 2018), which remains the basis of most current research.

Following Hattori's breakthrough, Thorpe (1983) was the first to undertake a systematic reconstruction of proto-Ryukyuan (pR).⁵ Though Thorpe's work remains the most extensive reconstruction of pR available, it suffers from several limitations, especially in the domain of prosody, since it did not take into account several distinctions attested in Ryukyuan but absent from Japanese (§5).

Other large-scale reconstructions include Martin's (1987) timeless classic, which consistently lists Ryukyuan cognates, though it is primarily concerned with Japanese and does not accept Hattori's findings on the pJR vocalism. The OJ grammar by Vovin (2005; 2009) and his comparative study with Korean (Vovin 2010) also provide detailed and important comparisons with Ryukyuan. Shimabukuro's (2007) reconstruction of accent has been strongly criticized (Lawrence 2016) and should be used with caution. Bentley's (2008) proto-Southern Ryukyuan reconstruction is a useful work, though it suffers from important limitations (Pellard 2010). Other noteworthy reconstructions include Urakami's (1992; 1992) proto-Amami and Pellard's (2009) and Pellard & Hayashi's (2012) proto-Miyako.

3 RYUKYUAN AND THE PROTO-JAPANESE-RYUKYUAN VOWEL SYSTEM

The reconstruction of the pJR vowel system is the field which has most benefited from a comparative perspective from Ryukyuan. The pR vowel system can be reconstructed following Thorpe (1983) with five vowels: **i*, **u*, **e*, **o*, **a*. In cases where the distinction between **u* and **o* is unclear, Thorpe (1983) writes **U*, but the unambiguous notation **{u,o}* is adopted here instead.

The comparative data from Ryukyuan leads to the addition of two mid vowels, **e* and **o*, to the four-vowel system (**i*, **u*, **ə*, **a*) traditionally reconstructed for pJR on the basis of OJ (e.g. Miller 1967; Matsumoto 1975; Whitman 1985; Martin 1987). Ryukyuan also preserves some distinctions which are not directly attested in OJ but can be inferred to have existed earlier on the basis of internal reconstruction, e.g. the different sources of OJ *Cwi*. On the other hand, reconstructing a seventh pJR vowel **i*, as proposed by Frellesvig & Whitman (2008), finds no support in Ryukyuan, and the seventh vowel **ü* posited by Hattori (2018 [1979]) to account for some Japanese-Ryukyuan correspondences proves to be unnecessary too (Pellard 2013b).

3 Chamberlain arrived in Japan in 1873, just before the rise of the *Junggrammatiker* and the methodological upturn of the comparative method.

4 See Hattori (2018) for a historiographic overview of the beginnings of Japanese–Ryukyuan comparatism.

5 Unfortunately, not only was Thorpe's dissertation never published, but he also never carried on his work.

3.1 *The mid vowels *e and *o*

The most important contribution of Ryukyuan to the reconstruction of pJR is perhaps the reconstruction of two mid vowels *e and *o and a six-vowel system instead of the previous standard four-vowel system. This hypothesis was first proposed by Hattori (1976; 2018 [1979]) and subsequently further developed by Thorpe (1983), Serafim (2008), and Pellard (2008; 2013b).

Ryukyuan exhibits two different correspondences for both OJ *i* and *u* (Tables 1 and 2): some of the correspondents of the OJ high vowels unconditionally merged with the correspondents of the OJ mid vowels (*Cye, Ce, Cwo, Co*). This split correspondence leads to the reconstruction of those as mid vowels, i.e. respectively pJR *e and *o. In Northern Ryukyuan, the original pJR high vowels *i and *u usually trigger fortition of a preceding voiceless stop, while the mid vowels *e and *o trigger aspiration or spirantization. The high vowel *i also often triggers palatalization, while *e has a central or non-palatalized reflex. On the other hand, in Southern Ryukyuan *i often has a centralized or fricative reflex. In both groups, the original high vowels *i and *u tend to undergo syncope or nasalization in some environments.

TABLE 1: pJR *i vs. *e in Ryukyuan

	pJR	OJ	pR	Ama.-Yam.	Oki.-Yon.	Miy.-Hir.	Yae.-Ish.	Yonag.
‘ditch’	*minsə	mizo	*mizo	midzo	dzú:	mdzu	ńdzú	ndú
‘water’	*mentu	midu	*medu	midzi	mǐdzí:	midzɪ	mǐdzì	mín
‘daytime’	*piru	piru	*piru	çiru	pʰírú:	pɪ:	pʰ:rì	tsʰu:
‘garlic’	*peru	piru	*peru	φiru	pʰírú:	pɪ	pʰɪn	çírú

TABLE 2: pJR *u vs. *o in Ryukyuan

	pJR	OJ	pR	Ama.-Yam.	Oki.-Shur.	Miy.-Hir.	Yae.-Ish.	Yonag.
‘horse’	*uma	uma	*uma	mʰa:	mʰmà	mma	ńmá	mmà
‘sea’	*omi	umi	*omi	ʔumi	ʔùmì	im	ín	ùnnágâ
‘mortar’	*{u,o}su	usu	*{u,o}su	ʔusi	ʔù:sì	usɪ	úsí	ùtɛí
‘medicine’	*kusori	kusuri	*kusori	kʰusuri	kùsù	fusurɪ	φùcírí	tsʰúrí

The distinction between high and mid vowels was retained in most environments in pR, though not equally in all modern varieties. Since the distinction has often been transphonologized onto the preceding onset consonant, it is not always faithfully preserved when there is no onset, i.e. in word-initial (*Anlaut*) position, especially when the following consonant is voiceless (e.g. pR *{i,e}ki ‘breath’, *{i,e}si ‘stone’, *{u,o}si ‘cow’, *{u,o}ta ‘song’). Similarly, the loss of the pJR onset consonant in non-initial *-pu, *-po, and *-wo led to the merger of *u and *o in these environments (e.g. pR ‘fall down’ *ta{u,o}re-, ‘fan’ *a{u,o}gi, ‘pole’ *sa{u,o}). Also, evidence for a distinction between *ju and *jo is scarce.

3.2 Two origins of OJ *Cwi* syllables: **ui* and **əi*

The B-type *Cwi* syllables are usually thought to be secondary and to result from the fusion of earlier vowel sequences (Frellesvig & Whitman 2008; Hayata 2023). From the so-called “apophonic” alternations in OJ stems, it is possible to reconstruct two different origins for OJ *Cwi*: **ui* for those instances of *Cwi* which alternate with *Cu* (e.g. ‘moon’ *tukwi* ~ *tuku-*), and **əi* for those which alternate with (B-Type) *Co* (e.g. ‘tree’ *kwi* ~ *ko-*).

In Ryukyuan, the cognates of the *Cwi*-apophonic forms of OJ can be divided into two sets according to whether they have a vowel **i* or **e* in pR. These two sets show a regular correspondence with the two different origins **ui* and **əi* of OJ *Cwi* posited from internal reconstruction. In other words, pJR **ui* and **əi* merge as OJ *Cwi* but are kept distinct in Ryukyuan as different vowels or as a distinction on the preceding consonant (Table 3),⁶ and the Ryukyuan data corroborates the internal reconstruction based on OJ.

TABLE 3: Correspondences of Old Japanese *Cwi* in Ryukyuan

	OJ	pR	Ama.-Yam.	Oki.-Yon.	Miy.-Hir.	Yae.-Ish.	Yonag.
‘moon’	<i>tukwi</i> ~ <i>tuku-</i>	* <i>tuki</i>	<i>tsiki</i>	<i>ɕitɕi</i>	<i>tsɪkɪ</i>	<i>tsʰikʰi</i>	<i>tʰi</i>
‘tree’	<i>kwi</i> ~ <i>ko-</i>	* <i>ke</i>	<i>kʰi</i>	<i>kʰi</i>	<i>ki</i>	<i>ki</i>	<i>kʰi</i>
‘mouth’	<i>kuti</i> ~ <i>kutu-</i>	* <i>kuti</i>	<i>kʰuti</i>	<i>kʰutɕi</i>	<i>futsɪ</i>	<i>φútsɪ</i>	<i>tʰi</i>
‘to fall’	<i>oti</i> ~ <i>otos-</i>	*{ <i>u,o</i> } <i>te</i>	<i>ʔuti-</i>	<i>φùtirúɴ</i>	<i>utɪ</i>	<i>útírún</i>	<i>utirun</i>

It is noteworthy that Ryukyuan distinguishes between **ui* and **əi* even in those contexts where OJ has no distinction between *Ci* and *Cwi*, like ‘fall’ *oti-* ~ *otos-* in Table 3. The Ryukyuan data can thus enhance our reconstructions in the following cases: when a word is not phonographically attested in OJ, when a word lacks an apophonic alternate form, or when a word contains a syllable without distinction between *Ci* and *Cwi*. On the other hand, since pJR **i* and **ui*, as well as pJR **əi*, **ai*, and **e*, respectively merge in Ryukyuan, only the comparison between OJ and Ryukyuan can elucidate many reconstructions. To give only one example, the pR form **miti* ‘path’ could theoretically reconstruct in pJR as **miti*, **muiti*, **mitui*, or **muitui*. On the other hand, OJ *miti* ‘path’ could reconstruct as pJR **miti*, **meti*, **mete*, **mitui*, **mitəi*, **metui*, or **metəi*.⁷ The comparison of the two data sets leads by intersection to reduce the number of possibilities to just two: pJR **miti* or **mitui* (to which we should further add **mitoi* as explained in §3.3).

⁶ See also Arisaka (1934), Hattori (1932; 2018), Serafim (2008), and Pellard (2013b). Polysyllabic verb stems ending in **ui* (or **oi*) have been analogically reshaped in the Southern Ryukyuan languages, and the distinction between the different origins of OJ *Cwi* is thus faithfully preserved in nouns only. Thorpe (1983: 355) proposes that the bound stem of ‘moon’ reconstructs as pJR *tuko-* rather than *tuku-*, which would entail the reconstruction of the free form as **tukoi*, but the basis for his reconstruction is not clear (Pellard 2013b). In any case, that reconstruction is compatible with the system proposed here, as explained in §3.3. That example is retained here for lack of another *Cwi* ~ *Cu-* vs. *Cwi* ~ *Co-* minimal pair with abundant Ryukyuan cognates.

⁷ If we ignore for the sake of the discussion Frellesvig & Whitman’s (2008) proposal that mid vowel raising was limited to non-final position.

3.3 One more origin of Old Japanese Cwi syllables: *oi

Some words for which we need to reconstruct a vowel *o in pJR, and subsequent vowel raising in oJ, exhibit the *Cwi* ~ *Cu* alternation pattern. This entails reconstructing them not with pJR *ui but with *oi (Vovin 2011; Pellard 2013b).⁸ This is the case of verb stems like oJ ‘exhaust’ *tukwi-* ~ *tukus-* or ‘pass’ *sugwi-* ~ *sugus-*, which correspond to pR **tukos-* and **sugos-*. In the case of *sugus-*, the reconstruction pJR **sugos-* is also supported by the existence of the EOJ form *sugwos-* (MYS 14.3564) and of the EMJ form *sugos-*, which survives in ModJ. Another example is ‘yellow’ oJ *kwi-* ~ *ku-*,⁹ whose reconstruction as pJR **koi* is here again supported by the EMJ form *ko-gane* ‘gold’.

Among the words exhibiting an alternation between *Co* and *Cwi* in oJ, and which are thus traditionally reconstructed with an earlier **ai*, some do not show a distinction between A-type *Co* and B-type *Cwo*. The *o* in such examples could thus theoretically be interpreted as coming not from **a*, the origin of oJ *Co*, but from **o*, one of the origins of oJ *Cwo*. This hypothesis is reinforced by the fact that some of such words constitute exceptions to the correspondence between oJ *Cwi* (~ *Co-*) and pR **e* described above (Pellard 2013b). Such words should thus be reconstructed with **oi* rather than **ai*. This is the case of ‘fire’ oJ *pwi* ~ *po-*, whose pR cognate form reconstructs as **pi* and not **pe*, as expected if it came from pJR **pai* (Table 4).

TABLE 4: pJR *oi vs. *ai in Ryukyuan

	pJR	oJ	pR	Ama.-Yam.	Oki.-Yon.	Miy.-Hir.	Yae.-Ish.
‘fire’	* <i>poi</i>	<i>pwi</i> ~ <i>po-</i>	* <i>pi</i>	<i>çi-</i>	<i>pʔi:</i>	<i>pi:</i>	<i>pí:</i>
‘yellow’	* <i>koi</i>	<i>kwi</i> ~ <i>ku-</i>	* <i>ki</i>	<i>kʔi-</i>	<i>tɛʔi-</i>	<i>ki-</i>	<i>ki-</i>
‘tree’	* <i>kai</i>	<i>kwi</i> ~ <i>ko-</i>	* <i>ke</i>	<i>kʰi:</i>	<i>kʰi:</i>	<i>ki:</i>	<i>kí:</i>

All such examples are found after a labial consonant (i.e. { **p*, **b*, **m*, **w* }), but this is not surprising since this is precisely the exact environment where the distinction between *Co* and *Cwo* is neutralized in oJ¹⁰ and for which we may be in doubt about whether a given example should reconstruct as **a* or **o*. Thorpe (1983: 230–232) argues that in fact there is no distinction between the different pJR origins of oJ *Cwi* after **p* and probably **w*, but there is at least one potential counterexample to that hypothesis: pR **{u,o}po-* ‘big, many’ corresponds to oJ *opo-* ‘big, great, many’ and has an alternate form pR **{u,o}pe-* ‘big, many’, which corresponds to the oJ verb stem

⁸ This solves the oddness of the systematic lack of a diphthong **oi* in most previous reconstructions. This idea was first suggested by Frellesvig & Whitman (2008: 39), who only gave one possible example of **oi*, oJ *isi* ~ *iswo* ‘rock, stone’, but they did not include **oi* into their reconstructed system (Frellesvig & Whitman 2008: 16), nor did they propose a full treatment of the issue. Vovin (2011) and Pellard (2013b) independently reached the same conclusion from not completely identical evidence around the same time (April 2010), though Vovin (2011) appeared in print first and should thus be credited with the priority of the discovery.

⁹ The stem *kwi* is not phonographically attested in oJ, but the fact that it alternates with *ku-* shows that it must have been a B-type *kwi*.

¹⁰ Except *mwo* and *mo*, which are distinguished in the *Kojiki* only. Another context where the distinction is neutralized is the initial, onsetless, position, but there are no examples of apophonic alternations involving onsetless *o* since apophony is restricted to stem-final syllables.

opwi- ‘grow’. Thorpe 1983 Ryukyuan Language History’s (1983: 257, 263–264) solution is to analyze pR $\{u, o\}pe-$ as containing the suffix $*-pe$ ‘layer’, but this is debatable. The limited number of relevant examples in OJ proper and the paucity of cognates in Ryukyuan are anyway problematic.

3.4 The vowels *Cwo* and *Co*

The distinction between OJ A-type and B-type *o*-syllables (< pJR $*o$ vs. $*ə$) has been claimed to be preserved in some Amami dialects of the Ōshima and Kakeroma Islands (Hattori 1959b: 58–61; Sibata & Mitsuishi 1979; Urakami 1993),¹¹ i.e. pJR $*ə > \text{OJ } Co :: \text{Ama. } u \text{ vs. pJR } *o > \text{OJ } Cwo :: \text{Ama. } o$. While the Amami data might seem striking at first sight, the correspondences are actually complex, and it is not possible to establish the existence of a distinction between pJR $*ə$ and $*o$ in Amami (M. Nakamoto 1976: 94–103; Thorpe 1983: 34–37; Matsumori 1991; Nakama 1992: 67–72).

The major problem for the hypothesis that some Amami dialects preserve the distinction between $*o$ and $*ə$ is that there are many counterexamples, perhaps about as many as examples that follow the putative sound law. Both pJR $*ə$ and $*o$ can correspond to either *o* or *u* in a single dialect, but there are differences in the exact correspondences between dialects (Table 5). The correspondences involved are fairly complex and need a more systematic treatment which will have to remove loans from the data, and to concentrate on the segmental (and suprasegmental) environments.

TABLE 5: Reflexes of pJR $*o$ and $*ə$ in Amami

	pJR	OJ	Ama.-Yam.	Ama.-Shib.
‘heart’	$*kəkəɾə$	<i>kokoro</i>	<i>k^hohoro</i>	<i>k^huho:ro</i>
‘nine’	$*kəkənə-tu$	<i>kokono-tu</i>	<i>k^huhunutsi</i>	<i>k^hoho:not</i>
‘origin’	$*mətə$	<i>moto</i>	<i>mutu</i>	<i>mutu:</i>
‘sound’	$*ətə$	<i>oto</i>	<i>ʔutu</i>	<i>ʔuto:</i>
‘cloud’	$*kumo$	<i>kumwo</i>	<i>k^ʔumo</i>	<i>k^ʔumo:</i>
‘feces’	$*kuso$	<i>kuswo</i>	<i>k^ʔusu</i>	<i>kusu:</i>
‘partner, bridegroom’	$*moko$	<i>mwokwo</i>	<i>muhu</i>	<i>muho:</i>
‘thigh’	$*momo$	<i>mwomwo</i>	<i>momo</i>	<i>mumo:</i>

4 CONSONANTS

The pR consonant system can be reconstructed following Thorpe (1983) with 13 consonants: $*p$, $*t$, $*k$, $*b$, $*d$, $*g$, $*s$, $*z$, $*m$, $*n$, $*r$, $*j$, $*w$. Thorpe (1983) also adds two archiphonemes: the first part of geminate obstruents $*Q$ and a placeless nasal $*N$, which developed through vowel loss, in a way similar to but independent of Japanese.

¹¹ Hattori later abandoned his own proposal.

While the comparison with Ryukyuan is crucial for reconstructing the pJR vowel system, the reconstruction of pJR consonants is rather straightforward. Though it has been proposed that the Ryukyuan consonant systems were archaic in several aspects, the contribution of Ryukyuan to the reconstruction of the pJR consonants seems limited to corroborating the OJ evidence.

4.1 Approximants

A long-standing issue is whether the approximants *w* and *y* of OJ should be reconstructed as stops in pJR, i.e. respectively **b* and **d*. Indeed, in Southern Ryukyuan, and in some Northern Ryukyuan varieties too, OJ initial *w*- corresponds to a stop *b*- (Table 6), and in Yonaguni OJ initial *y*- also corresponds to a stop *d*- (Table 8). On the basis that lenition is more natural and frequent, it has been proposed that *b*- (e.g. Whitman 1985: 15–18; Martin 1987; Nakama 1996; Vovin 2010: 36–40)¹² and sometimes also *d*- (e.g. Martin 1987) of Southern Ryukyuan were preservations of pJR **b* and **d*.¹³ However, several arguments can be offered against reconstructing pJR **b* and **d*, the lenition hypothesis, instead of **w* and **j*, the fortition hypothesis.

4.1.1 Reconstructing initial **w*-

In Southern Ryukyuan, Japanese *w*- regularly corresponds to *b*- in initial position, while in Northern Ryukyuan, most varieties have *w*-, but a few dialects also exhibit a stop *b*- or *g*- in some contexts (Table 6).

TABLE 6: Correspondences of Jp. initial *w*-

	EMJ	Ama.-Ad.	Ama.-YHig.	Oki.-Ben.	Oki.-Kud.	Miy.-Hir.	Yae.-Ish.	Yonag.
'I, we'	<i>wa</i>	<i>wan</i>	<i>wanu</i>	<i>gwan</i>	<i>wana:</i>	<i>ban</i>	<i>bánú</i>	<i>bànú</i>
'sit'	<i>wi</i>	<i>jjui</i>	<i>bjun</i>	<i>bi:n</i>	<i>gi:n</i>	<i>br:</i>	<i>bírúñ</i>	<i>bir-</i>
'get drunk'	<i>wep-i</i>	<i>ju:jui</i>	<i>φuijun</i>	<i>γuirun</i>	<i>gui:n</i>	<i>bjur:</i>	<i>bi:n</i>	<i>birun</i>
'husband'	<i>wopito</i>	<i>gutú</i>	<i>φutu</i>	<i>γutu</i>	<i>gutú</i>	<i>butú</i>	<i>búdù</i>	<i>bùtú</i>

Some of the Northern Ryukyuan stop reflexes are clearly secondary developments since, for instance, 'pig' pR **uwa* is *w'a:* or *wa:* in most Northern Ryukyuan varieties, but *gwa:* in Okinawa-Benoki, which suggests that a late **w*- > *gw*- fortition process has occurred after the loss of the initial vowel and glottal stop in that dialect. Similarly, *γagwa* 'millet' in Okinawa-Benoki can only be due to a late fortition of pR **awa* since it corresponds to OJ *apa*. In the case of Okinawa-Benoki, the absence of a *w* :: *b* correspondence before back round vowels suggests that the earlier **γu* (< **#o*) and **wu* (< **#wo*) seen in other dialects merged to *γu*, and that the loss of the initial **w*

¹² Vovin informs me (p.c. December 2017) that he does not strongly support that hypothesis anymore.

¹³ One motivation for reconstructing earlier stops was to make some comparisons of Japanese with other languages seem phonetically closer. Phonetic similarity is however irrelevant: only regularity of correspondences matter, and whether we reconstruct these segments as glides or stops has thus no bearing on the question of genetic comparisons.

prevented it from taking part into the later glide fortition process $w > b$. The reverse explanation, namely that $*b$ was lost in front of u first, is not well motivated. The restricted distribution of g in Amami-Aden is suspect too: it seems that the change $*w > g$ was conditioned by the following $*o$. For Okinawa-Kudaka, this g only appears before non-low vowels, a mirror image of Okinawa-Benoki. In the case of Amami-Yoron Higashi-ku too, positing a change $*b > \phi$ in front of $*o$ has no explanation, while a change $*w > \phi$ has several cross-linguistic parallels.¹⁴

Moreover, the lenition hypothesis needs to assume several fortition processes, $*b > w > g$ in Northern Ryukyuan, which of course nullifies any argument about fortition being less frequent and natural than lenition. Fortition of glides is actually not unfrequent, and specifically the change $w > b$ in initial position is far from being rare cross-linguistically (Kümmel 2007: 159–161).¹⁵ The absence of $*bu$ in the proto-system posited by the lenition hypothesis is also problematic since there is no obvious explanation for it. Typologically, bu is not a disfavored sequence, while on the other hand a sequence wu (distinct from u) is often absent in phonological systems due to the lack of perceptual distance between the onset and the vowel (Maddieson & Precoda 1992). Reconstructing earlier $*w$ instead of $*b$ thus provides a straightforward explanation for this systematic gap. The fact that some loanwords of Chinese origin also exhibit a $w :: b$ correspondence adds further support to the fortition scenario (Karimata 1999; Pellard 2009: 354; Vovin 2010: 37). For example, the word ‘teacup, bowl’ (MC *dræ* ‘wanX 茶碗, Jp. *chawan*) has a labial stop in Southern Ryukyuan (Miy.-Hir. & Yae.-Ish. *teaban*, Yonag. *saban*). This can be easily explained if that word was borrowed after the loss of intervocalic $*-w-$ and before the fortition of $*w$. The lenition hypothesis has no explanation to offer here. Moreover, some words fail to exhibit a stop when in the second position of compounds, like ‘husband’ in the compound ‘couple, husband and wife’ (Table 7; Bentley 2008: 199–201; Pellard 2009: 354). Nakama (1996) rightly points out that compounds often preserve archaic forms and that compounds in Miyako usually show a b , but all the examples he adduces are transparent ones, while ‘couple’ contains a bound form ‘female’ and often an archaic suffix, which shows it has been lexicalized early. Such data goes against Nakama’s conclusion, and we can assume that $*w$ underwent fortition to b in initial position and within transparent compounds, but not in lexicalized ones, where it disappeared like other instances of medial $*-w-$.

TABLE 7: Initial $*w-$ in free and bound forms

	Jp.	pR	Miy.-Hir.	Yae.-Ish.	Yonag.
‘husband’	<i>wopito</i> (EMJ)	<i>*woto</i>	<i>butu</i>	<i>búdu</i>	<i>bùtú</i>
‘couple’	<i>me-woto</i> (LMJ)	<i>*me-woto(-ra)</i>	<i>mju:tu(ra)</i>	<i>mjú:tú</i>	<i>mitúdâ</i>

Whitman (1985: 17) and Vovin (2010: 36–40) adduce interesting data from the Miyako-Hirara dialect of Miyako, where either $v(u)$ or u corresponds to Japanese u , and they propose to reconstruct

¹⁴ Compare with the synchronic variation observed between wu and ϕu for pR $*wo$ in Tokunoshima dialects (e.g. Amami-Okazen ‘husband’ $\{w, \phi\}ùtú$: < pR $*woto$:: EMJ *wopito*; personal field notes) and with the diachronic change $*w > (*\beta >)f$ found in Old Irish (Hock 1991: 163).

¹⁵ No phonetic motivation seems to have been proposed for initial glide fortition, but Hock (1991: 162) proposes instead a structural explanation, i.e. a generalization of the principle of initial strength from obstruents to sonorants.

**bu* for the former and **u* for the latter. However, a word of caution is needed since most other sources on the Miyako-Hirara dialect (e.g. Nevskij c. 1922–1928) reveal important discrepancies in the relevant forms. The data presented seem to contain at least some transcriptions which do not faithfully reflect the synchronic phonology of the Miyako-Hirara dialect but have been etymologically re-spelled in order to make them more similar to their Japanese cognates. For instance, the very syllable *vu* in question here is probably a dubious transcription of a syllabic *v*, and the letter *u* is added because the Japanese cognate usually exhibits such a vowel.

Among the unexpected cases of initial *v* adduced, most do not have a *v* in standard sources ('song', 'move', 'doubt', 'back'). The remaining examples are marked as subject to variation between *v* and *u* ('quail', 'inside') and/or almost all involve a dental stop in the second syllable. Determining whether there is actually a special correspondence in the Miyako-Hirara dialect for Japanese *ut-* and *ud-* will require more investigation.

There are two problematic examples left. First, the word 'rabbit (zodiac sign)' is not attested in most sources on Miyako-Hirara, but in Miyako-Irabu, Ōgami, Tarama, and other Miyako dialects it is *ur*, with a vowel, as expected, and not a fricative. Second, while Whitman (1985: 17) and Vovin (2010: 37–38) reconstruct Miy.-Hir. *v* :: Jp. *ur-i* 'sell' as **bur-i*, vs. Miy.-Hir. *ur* :: Jp. *uri* 'gourd' as **uri*, it is possible to reconstruct **ur-i* vs. **ori* instead (Pellard 2009: 352, cf. МК *wōy* < **ò{r,n}í* 'gourd'). For the time being, it is thus safer to not consider the Miyako-Hirara data as evidence supporting the reconstruction of pJR **b*.

4.1.2 Reconstructing initial **j-*

The Southern Ryukyuan language Yonaguni is unique in exhibiting a stop *d-* corresponding to initial *j-* in other Japonic languages (Table 8). As with the case of **w*, evidence from both loanwords and compounds can be adduced against the reconstruction of **d*.

TABLE 8: Initial *d-* in Yonaguni

	OJ	Ama.-Yam.	Oki.-Yon.	Miy.-Hir.	Yae.-Ish.	Yonag.
'mountain, forest'	<i>yama</i>	<i>jama</i>	<i>jàmǎ:</i>	<i>jama</i>	<i>jámá</i>	<i>dàmà</i>
'hot water'	<i>yu</i>	<i>ju:</i>	<i>jǔ:</i>	<i>ju:</i>	<i>jú:</i>	<i>dù:</i>
'night'	<i>yworu</i>	<i>juru</i>	<i>jùrǔ:</i>	<i>jur</i>	<i>jú:rí</i>	<i>dùrù</i>

In Yonaguni, several loanwords of Chinese origin exhibit a correspondence *j* :: *d* in initial position (Table 9; Whitman 1985: 19; Pellard 2009: 354–355; Vovin 2010: 41–42), which can only be explained by a late fortition. The *d* ~ *j* alternation seen in examples such as *da*: 'house' ~ *baja* 'my/our house' (< **ba-ja* 'we-house'), *ndja* 'your house' (< **ndi-ja* 'you-house') also supports the fortition hypothesis (Nakama 1996: 214; Bentley 2008: 166; Pellard 2009: 354).

Here again, the lenition hypothesis posits a system without a syllable **di*, since there is no *yi* in Japanese¹⁶ and no correspondence Jp. *i* :: Yonag. *di*, but is unable to explain that gap. From

¹⁶ A distinct syllable *yi* might be reconstructed, at least in pre-OJ, mainly from morphophonological alternations, but it

TABLE 9: Loanwords of Chinese origin in Yonaguni

	MC	Jp.	Yonag.
‘vegetable’	野菜 <i>yæX tshojH</i>	<i>yasai</i>	<i>dasai</i>
‘desire’	欲 <i>yowk</i>	<i>yoku</i>	<i>dugu</i>
‘carelessness’	油断 <i>yuw dwanX</i>	<i>yudan</i>	<i>dudan</i>

the point of view of the fortition hypothesis, this systematic gap is easily accounted for by a perceptual constraint and is also supported by typological evidence. A direct change $*j > d$ seems to be cross-linguistically rather rare, but $*j > \{f, j, (d)z, (d)ʒ\}$ is cross-linguistically common (Kümmel 2007: 159–161, 165–167), and it is important to note that Yonaguni has undergone several consonant fortitions (Table 10), including $*(d)\{z, ʒ\} > d$. We thus only need to postulate a simple and common change $*j > *(d)z$ in Yonaguni in order to explain the observed correspondence, since the second part of the change, namely $*(d)\{z, ʒ\} > d$, needs to be posited anyway. This change fits neatly within the general trend of fortition seen in Yonaguni.

TABLE 10: Fortitions in Yonaguni

fortition	Yonag.	Jp.	gloss
$*(d)\{z, ʒ\} > d$	<i>kʰádí</i>	<i>kaze</i>	‘wind’
$*ki (> \{*teí, *tsɿ\}) > ti$	<i>ití</i>	<i>iki</i>	‘breath’
$*si > tɕ^{(?)i}$	<i>φùtɕí</i>	<i>posi</i>	‘star’
$*su > tɕ^{(?)i}$	<i>tɕʰiní</i>	<i>sune</i>	‘shank’

Moreover, there is at least one piece of philological evidence for the fortition hypothesis $*j > d$ (Bentley 2008: 167; Vovin 2010: 43–44), which also happens to confirm the fricative intermediary stage posited above. The name of Yonaguni Island, modern *dunan-tɕʰima*, is recorded in the 15th c. Korean chronicle *Sŏngchong sillok* (10th year [1479], 6th month, 10th day) as 閏伊是麼, read *zyun.i sima* in MK. This testifies of the intermediary stage of the fortition process $*j > *(d)z > d$.

4.2 Initial $*p$ -

The main arguments for reconstructing ModJ *h* as earlier $*p$ are well known since Ueda (1898). Comparative evidence from Ryukyuan played an important role in Ueda’s demonstration, and indeed Ryukyuan fully exemplifies the different stages of the development chain posited, i.e. $p > p^h > \phi > h$ (Table 11). Though determining when the lenition of initial $*p$ started in Japanese is not a simple matter, its reconstruction as a stop $*p$ and the archaic character in this matter of Ryukyuan enjoys a broad consensus (e.g. Hashimoto 1928; Arisaka 1955: 569–571; Hattori 1976; M. Nakamoto 1976: 165–184; Whitman 1985: 17; Nakama 1992: 82–92).

was not distinguished in writing (Ramsey & Unger 1972; Vovin 2009: 420–426).

TABLE 11: Initial $*p$ - in Ryukyuan

	OJ	Ama.-Yam.	Oki.-Kud.	Oki.-Ize.	Oki.-Yon.	Miy.-Hir.	Yonag.
‘wing’	<i>pane</i>	<i>hane</i>	<i>p^háni</i>	<i>pháni</i>	<i>páni</i>	<i>pani</i>	<i>hàní</i>
‘day’	<i>pi</i>	<i>çi:</i>	<i>p^ʔi:</i>	<i>phi:</i>	<i>p^ʔi:</i>	<i>pu:</i>	<i>te^ʔi:</i>
‘spatula’	<i>pyera</i>	<i>hera, phera</i>	<i>p^hira</i>	<i>phírá</i>	<i>p^hírà</i>	<i>pira</i>	<i>çirâ</i>
‘winter’	<i>puyu</i>	<i>phuju</i>	<i>p^ʔuju</i>	<i>phújú:</i>	<i>pùjú:</i>	<i>fiju</i>	<i>phújú</i>
‘bone’	<i>pone</i> (EMJ)	<i>phuni</i>	<i>p^hun</i>	<i>phíní</i>	<i>píni</i>	<i>puni</i>	<i>phúní</i>

Still, doubts have been expressed about the archaic character of Ryukyuan p , and it has been suggested that it is the result of the late fortition of a fricative $*\phi$ (Yanagida 1989; K. Nakamoto 2011).¹⁷ However, that rather speculative hypothesis is not backed up by concrete evidence and suffers from many problems (Karimata 2009; Pellard 2016a). For instance, while fortitions of *voiced* approximants like w and j are cross-linguistically well attested (§4.1), the fortition of a *voiceless* fricative $\{\phi, f\} > p$ in initial, prevocalic, position is not,¹⁸ and the fortition hypothesis requires that such a rare sound change happened several times in Ryukyuan. On the other hand, the sound change $p > (p^h >) \{\phi, f\} > h$ is amply attested cross-linguistically (Kümmel 2007: 57, 65–66, 68, 194).

The hypothesized link between a fortition $\phi > p$ and the tensification of consonants due to vowel raising is easily falsified by looking at the Okinawa-Kudaka and Okinawa-Nakijin Yonamine data, where we not only found a tense $p^ʔ$ before originally high vowels as expected by the fortition hypothesis, but also a lax p^h before originally non-high vowels. The fact that Yonaguni, the Ryukyuan language which has undergone the greatest number of fortitions, has a reflex h also constitutes evidence against the fortition hypothesis. The putative cases of $*k\{u, o\}\{r, w\} > *kw > *\phi > \{p, \phi, h\}$ adduced by K. Nakamoto (2011) can be instead interpreted as cases of $*k\{u, o\}\{r, w\} > *kw > *p > \{p, \phi, h\}$, a typologically much more plausible sound change (Kümmel 2007: 274).

4.3 Word-final nasals

Southern Ryukyuan exhibits word-final nasals without any correspondent in Japanese, and these have been claimed to go back to pJR (Starostin 1975; Murayama 1981). However, though the discussion has usually centered around the Hateruma dialect of Yaeyama, unexpected word-final nasals are also found¹⁹ in Yonaguni and, even more interestingly, in the Shiraho dialect, which is a

¹⁷ One motivation was to show that Ryukyuan and Japanese separated late, after the 8th c. This of course fails to account for all the evidence other than $*p$ summarized in Pellard (2015; 2016a). More importantly, even if $*p$ had lenited to $*\phi$ in pR, this could be an innovation parallel to Japanese, especially given the cross-linguistic frequency of that change, and it would have no bearing on the dating of the Japanese-Ryukyuan split.

¹⁸ The rare examples of $\{\phi, f\} > p$ found in Kümmel (2007: 147–148) actually involve a merger of the fricative with a pre-existing p , which would not be the case of Ryukyuan under the fortition hypothesis. The two would be structurally completely different.

¹⁹ Such unexpected word-final nasals are found sporadically in some other dialects too (Martin 1987: 74–75; Wayne Lawrence, p.c. December 2017).

subdialect of Hateruma spoken on Ishigaki Island.²⁰ A comparison of the three (Table 12) reveals that they all exhibit unexpected word-final nasals, but not in the same words. Crucially, though both Yaeyama-Hateruma and Yaeyama-Shiraho show a correspondence for some words, the final nasals of Yonaguni never correspond to those of either Yaeyama-Hateruma or Yaeyama-Shiraho.

TABLE 12: Word-final nasals in Yaeyama-Hateruma, Yaeyama-Shiraho, and Yonaguni

	Yae.-Hat.	Yae.-Shir.	Yonag.	Yae.-Ish.	Jp.
‘eye’	<i>min</i>	<i>min</i>	<i>mi:</i>	<i>mi:</i>	<i>me</i> (OJ)
‘last year’	<i>kutsɯN</i>	<i>kutsɯN</i>	<i>kudu</i>	<i>kudzu</i>	<i>kozo</i> (OJ)
‘pigeon’	<i>paton</i>	<i>paton</i>	<i>hatu</i>	<i>patu</i>	<i>patwo</i> (OJ)
‘root’	<i>nin</i>	<i>ni:</i>	<i>ni:</i>	<i>ni:</i>	<i>ne</i> (OJ)
‘day’	<i>pɯN, piN</i>	<i>pi:</i>	<i>tɛʔi:</i>	<i>pr:</i>	<i>pi</i> (OJ)
‘horse’	<i>mman</i>	<i>mma</i>	<i>mma</i>	<i>mma</i>	<i>uma</i> (OJ)
‘forehead’	<i>fute</i>	<i>futen</i>	<i>tʔai</i>	<i>futai</i>	<i>pitapi</i> (EMJ)
‘mushroom’	<i>naba</i>	<i>naban</i>	<i>naba</i>	<i>naba</i>	<i>naba</i> (LMJ)
‘smoke’	<i>kipusɯ</i>	<i>kipucɯN</i>	<i>kʰibuntci</i>	<i>kibusɯ</i>	<i>keburɯ</i> (OJ)
‘flour’	<i>ku:</i>	<i>ku:</i>	<i>kʰuN</i>	<i>ku:</i>	<i>kwo</i> (OJ)
‘horn’	<i>sɯno</i>	<i>sɯmu</i>	<i>nnun</i>	<i>tsɯnu</i>	<i>tunwo</i> (OJ)
‘rice bran’	<i>nuga</i>	<i>nuga</i>	<i>nugan</i>	<i>nuka</i>	<i>nuka</i> (EMJ)

One could theoretically reconstruct several different word-final nasals in pJR in order to try account for this situation, but reconstructing here four different nasals seems unrealistic. Anyway, this would not resolve the parsimony problem involved here: if we reconstruct these word-final nasals at the pJR level, then we need to assume they have been *independently* lost in Japanese and all other Ryukyuan branches and subbranches. This suffices to cast a reasonable doubt on the antiquity of such nasals.

Moreover, the same root in Yaeyama-Hateruma sometimes fails to exhibit a final nasal in compounds (Oyler 1997: 89–102; Bentley 2008: 118, Chart 40). Compare for instance *min* ‘eye’ with *mi:-kangan* ‘glasses’ (‘eye-mirror’), *sɯkɯN* ‘moon, month’ with *mata-sɯkɯ* ‘next month’ (‘again-moon’), or *mman* ‘horse’ with *mma-nu-kan* ‘mane of a horse’.

Oyler (1997) proposed an alternative explanation of morphological reanalysis and analogy. He links the development of word-final nasals to the frequent attachment of the focus marker =*ndu* (< *=*nu=du* ‘NOM=FOC’) to nominals. Aso (2010: 217) mentions that this focus marker has an allomorph =*du* after nasal-ending words, which adds credence to the hypothesis of Oyler. However, such a scenario is hard to postulate for Yonaguni since its focus marker is simply =*du* (Yamada et al. 2015).

On the other hand, Karimata (2010: 5–6) proposes a phonetic explanation for these excrescent nasals and links their emergence to the strong aspiration and devoicing (or breathiness) found in

²⁰ After its destruction by a giant tsunami in 1771 and the death of almost all its inhabitants, the Yaeyama-Shiraho village was repopulated by a group of Yaeyama-Hateruma Islanders (Karimata 2008: 2).

Yaeyama-Hateruma. Devoicing would trigger nasalization, which would get then reinterpreted as a full nasal consonant, e.g. *pa:* > *pɑ:* > *pã:* > *pã* > *paŋ*. However, that explanation is problematic for several reasons. First, it does not solve the problem of the irregular character of these nasals. Second, it fails to explain the existence of excrescent nasals in words where neither aspiration nor devoicing is expected, such as **uma* > *mmaŋ*. Last, such an explanation cannot be applied to the case of Yonaguni since it lacks the Yaeyama-Hateruma-type devoicing/breathiness.

5 WORD-PROSODY (ACCENT AND TONE)

The comparison of the Ryukyuan prosodic systems enables us to reconstruct two classes for monosyllables, three for disyllables, and three or possibly four for trisyllables in pR (Hattori 1959a; Matsumori 1998; 2000a,b; 2001; 2012; Uwano 2000). These classes are customarily referred to by the letters A, B, C, and D.

Turning to the comparison with Japanese,²¹ the correspondences of monosyllables are straightforward and involve a simple merger of classes 1.1 and 1.2 in pR. For disyllables and trisyllables, the correspondences are more complex (Figure 1). Several Ryukyuan varieties present two different correspondences for the same Japanese tone class, and the distinction can be realized as a difference of tone, vowel length, or both (Table 13).²²

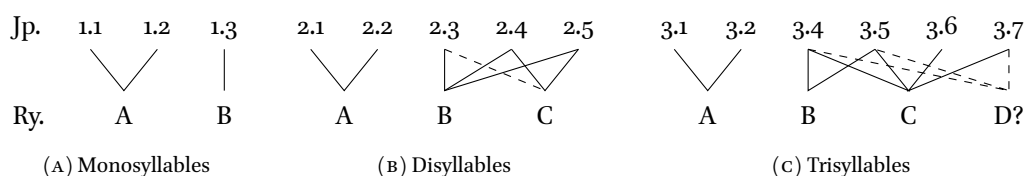


FIGURE 1: Tone class correspondences between Japanese and Ryukyuan

TABLE 13: Reflexes of classes 2.4 and 2.5 in Ryukyuan

	Ama.-Asa.	Ama.-YHig.	Oki.-Yon.	Oki.-Shur.	Miy.-Nis.	Yonag.
2.4 :: B ‘corner’	<i>kʰàdũ:</i> LR:	<i>hàdũ</i> LF	<i>hàdũ:</i> LR:	<i>kàdũ</i> LL	<i>kádu</i> HL	<i>kʰàdũ</i> LL
2.5 :: B ‘rain’	<i>ʔàmě:</i> LR:	<i>ʔàmí</i> LF	<i>ʔàmĩ:</i> LR:	<i>ʔàmì</i> LL	<i>ámì</i> HL	<i>àmì</i> LL
2.4 :: C ‘breath’	<i>ʔú:kì</i> H:L, L:H	<i>ʔkì</i> HL	<i>ʔíteʔi</i> HL	<i>ʔi:teì</i> L:H	<i>ítsɿ</i> HH	<i>ití</i> LF
2.5 :: C ‘shadow’	<i>kʰà:gí</i> H:L, L:H	<i>há:gí</i> HL	<i>há:gì</i> HL	<i>kà:gì</i> L:H	<i>kágí</i> HH	<i>kʰàŋí</i> LF

Until recently, the very existence of two different reflexes in Ryukyuan for the classes 2.3, 2.4, 2.5, 3.4, 3.5, 3.6, and 3.7 (Figure 1) had been ignored or even denied in Japanese dialectology, and

²¹ See Martin (1987), de Boer (2010) and Matsumori (2023) for a more detailed presentation of the Japanese material. Note that the original class 3.3 is nowadays rejected due to too many irregularities, but the numeration has not been changed.

²² Note that in Amami-Asama, reflexes of the C-class disyllables have a H:L pattern in case of a glottalized onset and a L:H pattern otherwise. See Uwano (2002) on the emergence of such new tonal distinctions.

Ryukyuan was presented as deriving from a system similar, if not identical, to that of the Ōita dialect of Kyushu (e.g. [Kindaichi 1960](#); [Uemura 1997](#)). However, it has been clearly and repeatedly demonstrated ([Hattori 1959a](#); [2018](#)) that there is not a single dialect anywhere in the Ryukyus exhibiting such a system, and cumulative empirical evidence has confirmed the correspondences of Figure 1 (e.g. [Matsumori 1998](#); [2000b](#); [2001](#); [Uwano 2000](#); [Igarashi et al. 2012](#)). The only really problematic correspondences are those symbolized by dashed lines in Figure 1. There are only few 2.3 words actually corresponding to the C-class, and the D-class contains only a handful of words and is only distinguished in Amami. For other one-to-many correspondences, since no conditioning factor has been found hitherto to explain the correspondences of Figure 1, the only methodologically valid solution is to posit more tonal distinctions in pJR. Of course, some of those extra classes might be the result of secondary developments, but there also is a possibility that it is some of the Japanese classes that are secondary, and not the Ryukyuan ones. In any case, the reality of the tonal correspondences cannot be simply ignored when reconstructing pJR.²³

Several scholars have argued that the vowel length found in C-class nouns is original and goes back to pJR ([Hattori 2018](#); [Vovin 1993](#); [Shimabukuro 2007](#)), or at least to proto-Northern Ryukyuan ([Matsumori 1998](#); [Lawrence 2016](#)).²⁴ On the other hand, a strong argument can also be made on the basis of comparative and internal reconstruction for a secondary development of vowel length due to tonal or accentual shift ([de Boer 2010](#): 208–246; [Pellard 2016b](#); [Matsumori 2017](#)). The general absence of C-class verbs and adjectives would be surprising if the C-class originated from earlier vowel length, but on the other hand verbs and adjectives often display fewer tonal or accentual patterns than nouns, as is the case in many Japanese dialects, including EMJ and ModJ. The lack of long vowels in compounds and derivations from C-class roots, while etymologically long vowels are usually preserved, and in disyllables reduced to monosyllables due to the loss of an intervocalic consonant indicates that the C-class vowel length is probably a secondary development (Table 14; [Pellard 2016b](#)).

TABLE 14: Long and short vowels in Northern Ryukyuan

	pR		long	short
Ama.-Asa.	* <i>moto</i> ‘origin’	>	<i>mù:tú</i>	~ <i>tʰì-mùtù:</i> ‘at hand’
	vs. * <i>taupu</i> ‘tofu’	>	<i>tʰò:φú</i>	~ <i>sì-mà-dò:φú</i> ‘local tofu’
	* <i>kuro</i> ‘black’	>	<i>k’ú:rù</i> (n.)	~ <i>k’ù:rù:hán</i> (adj.)
Oki.-Shur.	* <i>naka</i> ‘middle’	>	<i>nà:kà</i>	~ <i>jùnàkà</i> ‘midnight’
	vs. * <i>taupu</i> ‘tofu’	>	<i>tò:φú</i>	~ <i>ʔágí-dò:φù</i> ‘fried tofu’
	* <i>ke{o,u}</i> C ‘today’	>		<i>tɛù:</i> († <i>kì:jù</i>)

²³ [Igarashi & Hirako \(2016\)](#) have recently claimed that the Japanese dialect of Kishima in Saga prefecture has two different reflexes for 2.5 words, and that this distinction corresponds to the Ryukyuan B- vs. C-class. Though a fully detailed account has yet to be published, this discovery potentially has major implications for Japanese-Ryukyuan historical linguistics.

²⁴ [Lawrence](#) (p.c. December 2017) actually considers vowel length to be “a secondary development, occurring at the locus of pitch change”. He adds that “for two-mora nouns, A-class and C-class would have had the same phonetic contour (although phonologically distinct), and vowel length developed in the first place to allow a phonetic distinction between the two to be made.”

6 GRAMMAR

6.1 Verbs

The major problem for the comparative grammar of the Japanese-Ryukyuan languages is that the modern Ryukyuan verb paradigms often exhibit forms that do not strictly phonologically correspond to the Japanese ones. For instance the conclusive and adnominal forms in Table 15²⁵ are unexpected, e.g. the Okinawa-Shuri forms should be identical with the Japanese ones, but they exhibit an unexpected palatalization of the stem, as well as endings absent from the Japanese forms.

 TABLE 15: Basic forms of **kak-* ‘write’ in Northern Ryukyuan

form	OJ	Ama.-Yam.	Ama.-YHig.	Oki.-Yon.	Oki.-Shur.	Oki.-Kud.
NEG	<i>kakanu</i>	<i>k^hakan</i>	<i>kakannu</i>	<i>hakan</i>	<i>kakan</i>	<i>hakan</i>
INF	<i>kaki</i>	<i>k^haki</i>	<i>kaki</i>	<i>hatei-</i>	<i>kat̤ei</i>	<i>haki-</i>
CONCL	<i>kaku</i>	<i>k^hakun</i>	<i>kakjun</i>	<i>hateun</i>	<i>kat̤eun</i>	<i>hakin</i>
ADN	<i>kaku</i>	<i>k^hakuru</i>	<i>kakjuru</i>	<i>hateuru</i>	<i>kat̤euru</i>	<i>hakiru</i>
PROV	<i>kakeba</i>	<i>k^hakiba</i>	<i>kakiba</i>	<i>haki:ba</i>	<i>kakiwa</i>	<i>hakiba</i>
IMP	<i>kakye</i>	<i>k^haki</i>	<i>kaki</i>	<i>haki</i>	<i>kaki</i>	<i>haki</i>

It is now well-established that the conclusive and adnominal forms of Northern Ryukyuan derive from the univerbation of an earlier imperfective construction where a main “infinitive” verb (*-*i*) was followed by the stative verb **wor-* ‘be staying’ (Hattori 1977; Uchima 1984; Serafim 2007). This univerbation of *-*i* + *wor-* explains the otherwise unexpected palatal element usually seen in Northern Ryukyuan conclusive and adnominal forms. Though it is plausible that the Japanese forms might also come from the fusion of an infinitive with an auxiliary verb,²⁶ the hypothesis that both the Japanese and Northern Ryukyuan forms are cognate (i.e., homologies, Thorpe 1983: 238–258; Vovin 2009: 609–611; 2010: 82–83) rather than parallel innovations (homoplasies), faces important problems (Serafim 2007). The crucial evidence is found in Old Okinawan, which preserves the original simplex verb forms, without palatalization or special endings, that directly correspond to the Japanese ones (Takahashi 1991; Karimata 2015), like the adnominal form of ‘bloom’ <*saku*> (OS 14.989) vs. Oki.-Shur. *sat̤uru*. Old Okinawan also exhibits the complex extended forms, like the imperfective adnominal form of ‘blow’ <*fukiyoru*> (OS 11.618) that correspond to Oki.-Shur. *put̤uru* (now replaced by modern *put̤e:ru*). This indicates that the modern Northern Ryukyuan forms are the result of a late process, which is independent from the possible ultimate origins of the Japanese verb forms.

25 For the sake of clarity, the Amami-Yamatohama, Okinawa-Nakijin Yonamine, and Okinawa-Kudaka adnominal forms quoted are not the usual ones used in adnominal constructions but those used in *kakari-musubi* constructions, where other varieties use the adnominal form.

26 This is the hypothesis developed by Ono (1953), who identifies the auxiliary with the OJ verb *wi-*, conclusive *u*, ‘stay, sit’, the dynamic counterpart of the stative *wor-*.

On the other hand, several Northern Ryukyuan varieties possess an adnominal form restricted to some constructions, especially before more or less grammaticalized formal nouns. These forms do not include the stative auxiliary (Nakasone 1960) and reconstruct with a final *-o in pR (Table 16). Such archaic forms compare well with the EOJ and Hachijō adnominal forms in -o, in contrast with the -u found in OJ and most Japanese dialects (Pellard 2008; Hirako & Pellard 2013), and suggest the existence of a pJR adnominal marker *-o.²⁷

TABLE 16: Okinawa-Nakijin Yonamine adnominal forms

	ADN	old ADN *-o	cf. *u
'stand'	<i>tʰateʷunu</i>	<i>tʰatʷu</i> († <i>tʰateʷi</i>)	'summer' <i>nàteʷi</i> < * <i>natu</i>
'beat'	<i>kʰuru:ɕunu</i>	<i>kʰuru:ɕu</i> († <i>kʰuru:ɕi</i>)	'mortar' <i>ʷúɕi</i> < *{ <i>u,o</i> } <i>su</i>

Though Karimata (2014) argues for the existence of an adnominal ending -o distinct from a conclusive -u in the OS, the evidence adduced is far from being satisfactory both qualitatively and quantitatively. For instance, the orthography of the OS shows variation between ⟨u⟩ and ⟨o⟩ *except* after coronal obstruents, so that if an adnominal ending -o and a conclusive ending -u could have been strictly distinguished anywhere, it would have been after such consonants. Yet, no o-adnominal form is found for verbs with a stem ending with a coronal obstruent.

The origins of the Southern Ryukyuan verb forms and paradigms (Table 17),²⁸ which can be quite complex (Pellard & Yamada 2017), are more difficult to elucidate. Some finite forms seem to be directly comparable to those of Japanese, but there is evidence that at least some of them derive from the same complex auxiliary forms as Northern Ryukyuan (Thorpe 1983: 153–173; Pellard 2009: 34–346).

TABLE 17: Basic forms of **kak*- 'write' in Southern Ryukyuan

form	OJ	Miy.-Ira.	Yae.-Ish.	Yonag.
NEG	<i>kakanu</i>	<i>kaʃan</i>	<i>kakanu</i>	<i>kʰaganun</i>
INF	<i>kaki</i>	<i>katsɿ-, kafu-</i>	<i>kakɿ</i>	<i>kʰati</i>
CONCL	<i>kaku</i>	<i>kafum</i>	<i>kakun</i>	<i>kʰagun</i>
ADN	<i>kaku</i>	<i>kafu</i>	<i>kaku</i>	<i>kʰagu</i>
PROV	<i>akeba</i>	<i>kakiba</i>	<i>kakja:</i>	<i>kʰaguba</i>
IMP	<i>kakye</i>	<i>kaki</i>	<i>kaki</i>	<i>kʰagi</i>

²⁷ Frellesvig's (2012) hypothesis of a late development of the conclusive vs. adnominal opposition out of a single "finite" marker *-o is not incompatible with the above proposal. See also Osterkamp (2017) for new evidence of an adnominal *-o ending from non-Eastern OJ.

²⁸ For the sake of clarity, I have distinguished between the Miyako adnominal and conclusive forms but the distinction is not actually a syntactic one but rather a modal one (Shimoji 2009).

6.2 Adjectives

Like verbs, the Ryukyuan adjectival paradigms are not directly cognate with the Japanese ones (Table 18; Uchima 1984; Nakama 1992: 555-601). Most Ryukyuan inflected forms incorporate the auxiliary **ar-* ‘be’ attached to either a nominalized form marked with **-sa* or an adverbial form marked with **-ku*, and the inflectional endings are not always cognate with Japanese.

TABLE 18: Basic forms of **taka-* ‘high’ in Ryukyuan

form	OJ	Ama.-Yam.	Oki.-Shur.	Miy.-Ira.	Yae.-Ish.	Yonag.
INF	<i>takaku</i>	<i>t^hahasa</i>	<i>takaku</i>	<i>taʃafu</i>	<i>takasa:ri</i>	<i>t^hagagu</i>
CONCL	<i>takasi</i>	<i>t^hahasan</i>	<i>takasan</i>	<i>taʃaham</i>	<i>takasa:n</i>	<i>t^hagan</i>
ADN	<i>takaki</i>	<i>t^hahasarū</i>	<i>takasaru</i>	<i>taʃar</i>	<i>takasa:r</i>	<i>t^hagaru</i>
REAL	<i>takakyeba</i>	<i>t^hahariba</i>	<i>takasare:</i>	<i>taʃahariba</i>	<i>takasa:rja:</i>	<i>t^hagarja</i>

6.3 Core case markers

The two OJ case markers *ga* and *no* were both used to mark genitive modifiers and subjects in dependent clauses (and more rarely in main clauses), and the distinction between the two has been debated. There is some overlap in their usage, except after pronouns referring to humans (only *ga*) and demonstratives (only *no*), and the distinction between the two seems to have been based on the properties of the host noun.

The exact nature of the distinction between the two nominative/genitive markers *ga* and *no* in OJ is elusive since the two were often interchangeable, except after pronouns referring to humans (only *ga*) and demonstratives (only *no*). Several Ryukyuan varieties preserve both markers, and the distinction between the two depends on a hierarchy of nominals based on their referentiality and identifiability. Typically, personal pronouns and address terms, i.e. kinship terms and titles that can be used not only to refer to but also to address somebody, are marked with the cognate of *ga*, and other nominals with the cognate of *no*, though in some cases nominals located highest on the hierarchy can have a zero-marked form (Table 19).

TABLE 19: Ryukyuan nominative/genitive markers

	Ama.-Yam.	Oki.-Shur.	Miy.-Hir.	Yae.-Ish.	Yonag.
higher nominative	<i>ga</i>	\emptyset , <i>ga</i>	<i>ga</i>	\emptyset , <i>nu</i>	<i>ŋa</i>
lower nominative	<i>nu</i>	<i>nu</i>	<i>nu</i>	<i>nu</i>	<i>ŋa</i>
higher genitive	\emptyset , <i>ga</i>	\emptyset , <i>ga</i>	<i>ga</i>	\emptyset , <i>nu</i>	\emptyset , <i>ŋa</i>
lower genitive	<i>nu</i>	<i>nu</i>	<i>nu</i>	<i>nu</i>	<i>nu</i>

The OJ accusative marker *wo* has well attested reflexes in Ryukyuan too, though some varieties have no accusative marker, and they thus have a marked nominative system (e.g. Oki., Yonag.).

The reconstruction of its proto-form is not without problems at first sight, since many varieties exhibit a reflex *ju*. The palatal glide is however epenthetic, as is clear from Miyako accusative forms such as *panau* or *pano*: ‘flower’, in which there would be no reason for an original palatal glide to be lost intervocally. The development of the accusative marker is paralleled by that of the topic marker pJR **pa* > pR **wa*, which also has a reflex *ja*, but whose original onset **-w-* is here recoverable from the alternations of *a*-ending stems in Northern Ryukyuan (Table 20). This suggests that the pR form of the accusative marker should thus reconstruct as **(w){u,o}*.

TABLE 20: Amami-Yoron Higashi-ku topicalized forms

‘flower’	Jp.	Ama.-YHig.
bare stem	<i>pana</i>	<i>pana</i>
topicalized form	<i>pana pa</i>	<i>pano:</i>
cf. ‘millet’	<i>apa</i>	<i>o:</i>
cf. ‘foam’	<i>awa</i>	<i>o:</i>
vs. ‘design’	<i>aja</i>	<i>aja</i>

6.4 *Kakari-musubi*

The focus construction type known in Japanese grammar as *kakari-musubi*, where the presence of a focus-marked constituent correlates with a main predicate in the adnominal or exclamatory instead of the conclusive form, is well attested in Ryukyuan. Shinzato & Serafim (2013) undertake a detailed comparison of such *kakari-musubi* patterns in both Japanese and Ryukyuan, though their Ryukyuan data are limited to Old and Modern Okinawan.²⁹ They reconstruct several *kakari-musubi* constructions in pR and pJR, and retrace their development from a functional point of view. They also offer etymologies for the different focus markers involved.

The pJR reconstruction of OJ *{s,z}o* :: pR **do*, a focus marker cooccurring with a main predicate in the adnominal form, is not straightforward due to the phonological mismatch between the Japanese and Ryukyuan forms. It is possible that in this case OJ is more innovative than Ryukyuan in view of the stop initial of the EOJ cognate *to* (MYS 14.3409, 14.3561, 20.4385, 20.4430).³⁰ The discrepancy in the voicing is only a minor problem, especially if we compare with the similar case of the interrogative marker OJ *ka* :: pR **ga*.

The pR nominaliser **so* also plays a role in the historical investigation of *kakari-musubi* since Shinzato & Serafim (2013) propose that it is cognate with the second syllable of the OJ focus marker *koso*, whose first syllable is said to be the proximal demonstrative *ko*, i.e. *koso* is etymologized as ‘this one’. In any case, the existence of straightforward cognates of the pR nominaliser **so* in some

²⁹ See Karimata (2011) and Shimoji (2011) on *kakari-musubi* in Southern Ryukyuan.

³⁰ Shinzato & Serafim (2013: 138–139) propose to reconstruct pJR **t(j)ə* (*t(j)ö*) and subsequent affrication in order to account for OJ *so*. They also argue that the focus marker originates in the mesial demonstrative (OJ *so*) and suggest a comparison with the MK distal demonstrative *tye*.

Japanese dialects (Northeast of Kyushu and extreme West of Honshu) suggests it already existed in pJR (Shinzato & Serafim 2013: 160, 202–207).

7 LEXICON

The Ryukyuan languages exhibit many lexical innovations, but they also preserve many archaic words and meanings, some of which have been lost in Japanese after the OJ period. The Ryukyuan data can thus often shed a new light on etymological problems, particularly when trying to discriminate between potential cognates and loanwords from other languages (Vovin 2010; Pellard 2017).

7.1 Personal pronouns

Cognates of the two OJ first person pronouns *a* and *wa* are found in Ryukyuan (Table 21; M. Nakamoto 1983: 156–161; Uchima 1984: 75–86, 133–164), though no cognates of the OJ extended forms *are* and *ware* are found. On the other hand, direct cognates of the EOJ form *wan*{*u,wo*} (MYS 14.3476a, 14.3476b, 20.4358) are well attested. Though the distinction between the two pronouns *a* and *wa* is elusive in OJ (Vovin 2005: 217–219), the attestation of both roots in several Ryukyuan varieties constitutes evidence that these are not phonological variants and do not belong to different historical stages either. It is interesting to note that while in Northern Okinawan, **a* is used with a collective plural meaning, in Southern Ryukyuan it is **wa* that is used in plural forms, while in the Tarama dialect of Miyako, the difference between the two has to do with politeness.

TABLE 21: Ryukyuan first person pronouns

pJR	Ama.-Yam.	Oki.-Yon.	Miy.-Ira.	Miy.-Tar.	Yae.-Ish.	Yonag.
<i>*wa</i>	<i>wan, wa:-</i>	<i>wànũ:, wa:-</i>	<i>pan-</i> (PL)	<i>ba-, ban</i>	<i>bánú</i>	<i>bànû-</i> (PL)
<i>*a</i>	—	<i>?a-</i> (PL)	<i>a-, anu</i>	<i>a-, an</i>	—	<i>ànú</i>

Cognates of the OJ second person pronoun *na* are amply attested in Northern Ryukyuan, where they usually function as honorific second person pronouns (Table 22; M. Nakamoto 1983: 156–159; Uchima 1984: 87–93). It has been suggested that *na* was also used as a first person pronoun in OJ because the character 己 ‘self’ is sometimes read *na*, and because it is used in compounds with kin terms for which there are variants involving the first person pronoun *wa* (e.g. *na-se* ‘my beloved (man)’ MYS 14.3458, FK 8; cf. *a-se* ‘id.’ KK 29, *wa ga se* ‘id.’ MYS 1.19). Whitman (1999) suggests that OJ *na* has undergone an intrapersonal pronoun shift from first person to second person mediated by a reflexive stage. This hypothesis can find support in the existence in Southern Ryukyuan of reflexive or logophoric pronouns cognate with OJ *na* (Table 22).³¹

³¹ The form *na* is not derived from *nara* since no such sound change is attested in those varieties. Thus *-ra* appears to be a suffix, though its meaning and function are unclear. It is nevertheless parallel with that of the pR second person

TABLE 22: Ryukyuan pronoun **na*

	Ama.-Yam.	Oki.-Yon.	Miy.-Ira.	Miy.-Tar.	Yae.-Ish.
2nd person	<i>nan, na:-</i>	<i>nán, nár:-</i>	—	—	—
reflexive/logophoric	—	—	<i>nara</i>	<i>na:, nara</i>	<i>nâ:, nárà</i>

7.2 Demonstratives

While the OJ demonstrative system consisted into a basically binary opposition between proximal *ko* vs. non-proximal *so*, with distal *ka* being fully integrated only from the EMJ period on (Frellesvig 2010: 139–140), the existence in Southern Ryukyuan of cognates of *ka* (Table 23; M. Nakamoto 1983: 168–186; Uchima 1984: 54–66, 100–105) suggests it should be reconstructed in pJR.

TABLE 23: Ryukyuan distal demonstratives

	Miy.-Ira.	Miy.-Tar.	Yae.-Ish.	Yonag.
pronoun	<i>kari</i>	<i>kaŋ</i>	<i>kári</i>	<i>k^hári</i>
adnominal	<i>kanu</i>	<i>kanu</i>	<i>kánù</i>	<i>k^hànù</i>

On the other hand, no cognate of the OJ mesial demonstrative *so* is found in Ryukyuan (Table 24; M. Nakamoto 1983: 168–186; Uchima 1984: 54–66, 100–105). The pR mesial root **{u,o}* nevertheless corresponds to the Hachijō distal *u-* (Table 24; Hirako & Pellard 2013), which demonstrates its antiquity. Shinzato & Serafim (2013: 262–265) propose it was originally a reflexive deictic, related to the OJ reflexive pronoun *ono*, and that it replaced the original mesial in Ryukyuan.

TABLE 24: Ryukyuan and Hachijō mesial demonstratives

	Ama.-Yam.	Oki.-Yon.	Miy.-Ira.	Miy.-Tar.	Yae.-Ish.	Yonag.	Hach.
pronoun	<i>ʔuri</i>	<i>ʔúri:</i>	<i>uri</i>	<i>uŋ</i>	<i>úri</i>	<i>ú:</i>	<i>ure</i>
adnominal	<i>ʔun</i>	<i>ʔunu</i>	<i>unu</i>	<i>unu</i>	<i>únù</i>	<i>ùnù</i>	<i>uno</i>

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pronoun **ura* and little more mysterious than the suffix of the first person pronouns **wa(-no)* and **a(-no)*.

ABBREVIATIONS

FOC	focus
NOM	nominative
NR	Northern Ryukyuan
SR	Southern Ryukyuan
Ama.-Ad.	Amami-Aden (Amami, Kikai: Kibe et al. 2011)
Ama.-Asa.	Amami-Asama (Amami, Tokunoshima: Uwano 2014; 2017)
Ama.-Yam.	Amami-Yamatohama (Amami, Ōshima: Osada & Suyama 1977–1980)
Ama.-YHig.	Amami-Yoron Higashi-ku (Amami, Yoron: Kiku & Takahashi 2005)
Ama.	Amami
EMJ	Early Middle Japanese
EOJ	Eastern Old Japanese
FK	<i>Fudoki</i> (Tsuchihashi & Konishi 1957)
Hach.	Hachijō (Hirayama 1992–1994)
Jp.	Japanese
JR	Japanese-Ryukyuan
KK	<i>Kojiki</i> (Tsuchihashi & Konishi 1957)
MC	Middle Chinese
Miy.-Hir.	Miyako-Hirara (Miyako: Nevskij c. 1922–1928; Hirayama 1992–1994)
Miy.-Ira.	Miyako-Irabu (Miyako, Irabu: Tomihama 2013)
Miy.	Miyako
MK	Middle Korean
ModJ	Modern Japanese
MYS	<i>Man'yōshū</i> (Nakanishi 1978–1985)
OJ	Old Japanese
Oki.-Ben.	Okinawa-Benoki (Okinawa: Uchima & Arakaki 2000)
Oki.-Kud.	Okinawa-Kudaka (Okinawa, Kudaka: Fukuji & Kajiku 2012)
Oki.-Shur.	Okinawa-Shuri (Okinawa: Kokuritsu Kokugo Kenkyūjo 1963)
Oki.-Yon.	Okinawa-Nakijin Yonamine (Okinawa: Nakasone 1983)
Oki.	Okinawan
os	<i>Omoro sōshi</i> (Hokama 2000)
pJR	proto-Japanese-Ryukyuan
pR	proto-Ryukyuan
Ry.	Ryukyuan
Yae.-Hat.	Yaeyama-Hateruma (Yaeyama, Hateruma: Hirayama 1988; Karimata 2008)
Yae.-Ish.	Yaeyama-Ishigaki (Yaeyama, Ishigaki: Miyagi 2003)
Yae.-Shir.	Yaeyama-Shiraho (Yaeyama, Ishigaki: Karimata 2008)
Yae.	Yaeyama
Yonag.	Yonaguni (Sonai dialect: Yamada et al. 2013; 2015, personal fieldnotes)

NOTE ON TRANSCRIPTIONS AND SYMBOLS

All modern linguistic forms are given in a unified broad phonetic transcription, without indication of predictable vowel devoicing. Tense (“glottalized”) consonants are uniformly marked by a following ʔ and lax stops by ^h. The velar or uvular nasal coda is transcribed with *ŋ*, and the fricative vowel with the “apical vowel” symbol *ɿ* for lack of an official symbol, though it is not always apical. When a form lacks tone diacritics, it means either that the variety has no distinctive tone or accent, that the tone pattern of the form is unknown, or that tones are irrelevant for the issue under discussion. Jp. of all historical periods is transcribed according to the system of Frellesvig (2010), MK according to the Yale system, and MC according to Baxter & Sagart (2014). The obelus symbol (†) marks an expected but unattested form, and chevrons (<...>) a purely orthographical transcription without any commitment to the actual pronunciation. Alternative possibilities are indicated with the set notation between curly brackets, correspondences between languages are noted with a double colon (::), and morphological or morphophonological alternants are separated by a tilde. Forms not attested in isolation are marked with a hyphen, and a long dash in tables indicates there is no attestation. The symbol # represents a word boundary.

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