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2 The relationship between Japanese and Korean

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1. Introduction

This chapter reviews the current state of Japanese-Ryukyuan and Korean internal reconstruction and applies the results of this research to the historical comparison of both families. Reconstruction within the families shows proto-Japanese-Ryukyuan (pJR) and proto-Korean (pK) to have had very similar phonological inventories, with no laryngeal contrast among consonants and a system of six or seven vowels. The main challenges for the comparativist are working through the consequences of major changes in root structure in both languages, revealed or hinted at by internal reconstruction. These include loss of coda consonants in Japanese, and processes of syncope and medial consonant lenition in Korean.

The chapter then reviews a small number (50) of pJR/pK lexical comparisons in a number of lexical domains, including pronouns, numerals, and body parts. These expand on the lexical comparisons proposed by Martin (1966) and Whitman (1985), in some cases responding to the criticisms of Vovin (2010). It identifies a small set of cognates between pJR and pK, including approximately 13 items on the standard Swadesh 100 word list: ‘I’, ‘we’, ‘that’, ‘one’, ‘two’, ‘big’, ‘long’, ‘bird’, ‘tall/high’, ‘belly’, ‘moon’, ‘fire’, ‘white’ (previous research identifies several more cognates on this list). The paper then concludes by introducing a set of cognate inflectional morphemes, including the root suffixes *-i ‘infinitive/converb’, *-a ‘infinitive/irrealis’, *-or ‘adnominal/nonpast’, and *-ko ‘gerund.’

In terms of numbers of speakers, Japanese-Ryukyuan and Korean are the largest language isolates in the world. I use the term “isolate” here in the informal sense that includes both true isolates and small language families. Japanese-Ryukyuan, often misleadingly treated as the unitary language “Japanese” rather than a language family, ranks 9th, with 122 million first language speakers; Korean ranks 17th, with 66.3 million (Lewis 2009, http://www.ethnologue.com/ethno_docs/distribution.asp?by=size). The next largest language or family-level isolate is Quechua at 79th, with 10.1 million speakers. Like Quechua(n) and Aymara(n), Japanese-Ryukyuan is unquestionably a language family, made up of the 5 Ryukyuan languages and a variety of dialect clusters in the Japanese main islands. Korean dialects show less depth of separation. Due to their size and importance, their proximity and long cultural contact, and their well-known typological similarity, scholars have debated the possibility of a genetic relation between Japanese and Korean for over two centuries. All scholars agree that a genetic affiliation between the two, if valid, is distant. At the same time, Japanese-Ryukyuan and Korean are distributed in adjacent areas, and we know that their historical distribution overlapped. There is a consensus that at some point a relative of pJR was spoken on the Korean peninsula, although there is controversy over the relevant evidence. The evidence has been known for almost a century, beginning with Shinmura Izuru’s (1916) observation that words preserved in toponymic material in the 12th century Korean history

Samguk sagi shows close resemblances with Japanese. The combined factors of genetic distance and geohistorical proximity resemble the case of Quechuan and Aymaran: in the case of these two language groups as well, specialists divide up into protagonists (e.g. Campbell 1995) and skeptics (e.g. Adelaar & Muysken 2004) of a genetic relationship. Campbell (1995: 158) points out such situations are excellent test cases for the efficacy of historical/comparative tools for distinguishing material diffused by contact from material inherited from a common parent.

Proposals for a relationship between Japanese and Korean are sometimes dated to Arai Hakuseki's Korean etymologies for a number of lexical items in his *Tōga* (1717). Proposals for a thoroughgoing cognate relationship were made in the nineteenth century by Aston (1879) and Shiratori (1897), and again in the twentieth by Kanazawa (1910). Among Japanese specialists at mid-century, Kōno (1949) points out important phonological correspondences between Korean and Japanese but does not commit himself to a genetic relationship. Ohno Susumu (1975) expresses a positive view toward a genetic relationship between Japanese and Korean, as does this scholar in earlier work, mostly based on research by others. Among Korean scholars, Lee (1972a) affirms the existence of a relationship while stressing its distance. The first research to propose a systematic set of sound correspondences and reconstructions for a sizeable amount of vocabulary was Martin (1966); Whitman (1985) expands upon this inventory.

The current state of debate remains comparable to the Quechumaran controversy, with Vovin (2010) rejecting the majority of Martin's and Whitman's proposed cognates. Vovin addresses the problem of distinguishing diffused from inherited material by requiring that comparanda on the Japanese-Ryukyuan side be reconstructible to pJR. If a cognate is found only in Western Old Japanese (WOJ, the central dialect of eighth-century Japanese), Vovin rejects it as a probable loan, based on his hypothesis that WOJ or its immediate predecessor absorbed a large number of loanwords from Old Korean (OK).² This is a sound procedure and I adopt it insofar as possible in this paper. Vovin's conclusion is that the set of firm JK cognates is far smaller than suggested by Martin (1966) or Whitman (1985). He identifies six "reliable cognates", as against 75 "obvious loans" (2010: 239). The winnowing out of probable (or possible) loans is a great step forward in this field, but I will argue that an improved set of correspondences, involving not just phoneme-to-phoneme correspondences but consideration of original root shape, uncover a core set of cognates in the lexical and functional vocabulary.

The structure of the chapter is as follows. In section 2 I set out assumptions about the reconstruction of pJR, based on recent research in internal and comparative JR reconstruction. In section 3 I do the same for Korean. In section 4 I discuss a set of correspondences between pJR and pK, focusing on vowel correspondences, and introducing relevant lexical comparisons in the course of the discussion. This section also explores the comparative consequences of stem shape change, in particular syncope and medial consonant lenition in earlier Korean. Sections 5 and 6 discuss lexical comparisons in two specific functional domains, pronouns and grammatical formatives.

Transcription of Late Middle Korean is presented in a slightly different system to that in Sohn (this volume, Chapter 4). Following Yale Romanization (Martin 1995), I use *y*, *o* and *wo* where Sohn uses *j*, *ó* and *o* respectively, and mark tone as ´ (high/'accented', · in 15th-16th century han'gŭl texts), no mark (low/'unaccented', unmarked in 15th-16th century han'gŭl texts) and ˘ (rising, : in 15th-16th century texts).

2. Proto-Japanese-Ryukyuan

I assume a six vowel system for pJR (Table 2.1).

Table 2.1 *Proto-Japanese-Ryukyuan vowels*

*i		*u
*e	*ə	*o
	*a	

Reconstruction of the mid vowels *e and *o follows Hattori (1976, 1977-1979).³ The reflexes of pJR *e and *o are quite restricted, particularly in WOJ, but in other varieties as well. The WOJ reflexes of *e and *o are /e/ and /o/ in word-final position, /i/ and /u/ elsewhere.⁴ A process of mid vowel raising is posited to explain this distribution and correspondences such as WOJ *sugus-* ‘cause to pass by’: Eastern Old Japanese (EOJ) *sugwos-*, Early Middle Japanese (EMJ) *sugos-* id. (Hayata 1998, Hino 2003, Miyake 2003, Frellesvig & Whitman 2004, 2008), and similar correspondences involving WOJ /i/, /u/ and proto-Ryukyuan (pR) *e, *o. Comparison with pR is our richest source for evidence for pJR *e and *o in nonfinal position. Tables 2.2 and 2.3 list the examples of *e and *o proposed by Thorpe (1983) and Pellard (forthcoming) based on the correspondences pR *e : WOJ /i/ and pR *o : WOJ /u/.

Table 2.2 *Proto-Japanese-Ryukyuan *e*

Proto-Ryukyuan	Japanese (WOJ except as indicated)	Proto-Japanese-Ryukyuan
*ero	<i>iro</i>	*erə ‘color’
*ezu(ro)	<i>idu(re)</i>	*entu(rə/o) ‘which’
*kezu	<i>kizu</i>	*kensu ‘wound’
*memezu	<i>mimizu</i> (MJ)	*memensu ‘earthworm’
*mezu	<i>midu</i>	*mentu ‘water’
*nebu-	<i>nibu-</i> (MJ)	*nenpu- ‘dull, slow’
*pejesi- ‘cold’	<i>piye-</i> (MJ) ‘get cold’	*peje- ‘get cold’
*peru	<i>piru</i>	*peru ‘garlic’
*pezi	<i>pidi</i>	*penti ‘elbow’

Table 2.3 *Proto-Japanese-Ryukyuan *o*

Proto-Ryukyuan	Japanese (WOJ except as indicated)	Proto-Japanese-Ryukyuan
*ki ~ ko-	<i>kwi ~ ku-</i> (MJ <i>ko-</i>)	*koj ‘yellow’
*kusori	<i>kusuri</i>	*kusori ‘medicine’
*mogi	<i>mugi</i>	*monki ‘wheat’

*moko	<i>muko, moko</i>	*moko ‘bridegroom’
*omi	<i>umi</i>	*omi ‘sea’
*ori	<i>uri</i>	*ori ‘melon’
*tuki ~ tuko-	<i>tukwi ~ tuku-</i>	*tukoj ‘moon’
*tukos-	<i>tukus-</i>	*tuko-s- ‘exhaust it’

The pR data add nine examples of nonfinal *e. In all these examples *e occurs before a sonorant, as pointed out by Whitman (1985), who suggested that they are reflexes of an original nonfront vowel, *ə in the six-vowel system for pJR. Miyake (2003) and Pellard (forthcoming) observe that we cannot claim that *ə fronted automatically in this environment, since pJR contains many unfronted examples of *CəC[sonorant]. However the relevant environment can be narrowed to the position before a coronal sonorant, a phonetically plausible environment for vowel fronting (Clements 1991, Fleming 2003), and perhaps further narrowed to the position before a coronal sonorant in the same syllable. This narrower environment would leave unaccounted for the examples of *e before *r and *j, but these examples may mask an earlier more complex syllable structure (‘earthworm’, where *e occurs before *m, probably originates from a reduplication). I therefore reserve the possibility that at least some examples of nonfinal *e have been fronted from earlier ə*.

The eight tokens of nonfinal *o show a different pattern. In ‘exhaust it’ *o occurs in root-final position, while in ‘yellow’ and ‘moon’ it is in root-final position before a glide. ‘Bridegroom’ may involve root-final position in an original compound with *ko ‘child’/diminutive, while ‘medicine’ may be formed from *kus- ‘smelly’ + -or (adnominal) + i (nominalizer). These reconstructions would reflect a variety where the environment blocking mid vowel raising was broader than WOJ: root-final rather than word-final position. We see a similar contrast between EOJ (root-final *o retained) and WOJ (word final *o retained) in the contrast between EOJ *sugo-s-* and WOJ *sugu-s-* ‘cause to pass by’. In either case final position is privileged at the relevant level of prosodic analysis. The relevant generalization is preserved in a prosodically strong position, such as the head of a metrical foot (Zec 2003), whose location is subject to crosslinguistic variation.

Table 2.4 Proto-Japanese-Ryukyuan consonants

	Bilabial	Dental/ Alveolar	Palatal	Velar
Stop:	*p	*t		*k
Nasal:	*m	*n		
Fricative:		*s		
Tap:		*r		
Approximant:	*w		*j	

Proto-Japanese-Ryukyuan consonants are presented in Table 2.4. There is general consensus that so-called ‘*dakuon*’ consonants (*b, d, g, z*) in all varieties of Japanese and

Ryukyuan, usually realized as voiced, sometimes as prenasalized, go back to nasal-obstruent clusters. Thus pJR has no laryngeal or manner contrast for consonants.

There is also general consensus about the lexical pitch accent or word tone classes for pJR, although there is controversy about their interpretation (Ramsey 1979; de Boer 2010). I cite the reconstructed tonal classes in Martin (1987), without hypothesizing a pitch interpretation.

Summarizing this section, we have reconstructed a phonemic inventory for pJR with six vowels and nine consonants, the latter lacking any laryngeal contrast such as voicing. This inventory is supported by a high degree of agreement among specialists on the reconstruction of Japanese and Ryukyuan.

3. Proto-Korean

The closest approach to an internal reconstruction of Korean is Martin (1996), which shows partial convergence with work by Ki-moon Lee (1972a, b, 1991) and Lee & Ramsey (2011). Lee and Lee & Ramsey derive the seven-vowel system of Late Middle Korean (LMK) from an ‘Altaic’-type system with palatal harmony, but virtually all of the assumptions behind this have been called into question. More recent analyses posit a tongue root harmony system for LMK (Kim 1993, Ko 2010), similar to the retracted tongue root [RTR] systems found in Tungusic and most Mongolic languages. Based on the distribution of the LMK vowels in Sino-Korean, Itō (2007: 267) proposes the vowel system in Table 2.5 for Old Korean (OK; the language of Silla) at the period when Sino-Korean was established, commonly assumed to be in the late Tang period, roughly the eighth-ninth century.

Table 2.5 Old Korean (Silla) vowel system

*i > LMK <i>i</i> [i]	*i̥ > LMK <i>u</i> [i̥]	*u > LMK <i>wu</i> [u]
*ε > LMK <i>e</i> [ɛ]	*ə > LMK <i>o</i> [ʌ]	*o > LMK <i>wo</i> [ʊ] (or [o])
	*a > LMK <i>a</i> [a]	

LMK had vowel harmony (Sohn, this volume, section 4.2.2), but as Itō points out, the system in Table 2.5 is incompatible with a palatal vowel harmony system. But it is compatible with a tongue root harmony system, with [+/- RTR] pairs formed by *i and *i̥, *u and *o, and *ε and *a. Martin (2000) argues that vowel harmony was innovated some time prior to LMK. The OK system in Table 2.6 suggests a scenario: areal influence led to the reinterpretation of *i̥/*ə, *u/*o, and *ε/*a as [+/- RTR] harmonic pairs, and to the centralization of *ε. Centralization of *ε triggered backing and lowering of *ə to the low-mid back [ʌ] articulation of this vowel in LMK.

I adopt the system in Table 2.5 for OK, but represent the mid front vowel as *e. The distribution of the two ‘weak’ vowels *i > LMK *u* [i̥] and *ə > LMK *o* [ʌ] is restricted in LMK: /o/ does not occur not at all in onset position and /u/ is very rare there. A number of scholars have assumed that /u/ and /o/ undergo syncope in the second syllable of disyllabic verb stems of shape CVC*o/u* (Ramsey 1978, Martin 1996), and in the original second syllable of at least some LMK monosyllabic nouns with rising tone. A further environment for syncope is proposed as a source both for LMK initial obstruent clusters and aspirated consonants (Lee 1991; Lee & Ramsey 2011). I will assume that unaccented *i̥ and *ə are

syncopated, subject to constraints on the acceptability of the resultant clusters. I view syncope of accented final *i and *ə as metathesis, with compensatory lengthening of the vowel in the preceding syllable. In accented onset position or following an initial glide, *i and *ə may have merged with *e, as in LMK *yetŭlp* ‘8’ < *jətərp.

Table 2.6 *Proto-Korean consonants*

	Bilabial	Dental/ Alveolar	Palatal	Velar/ Glottal
Stop:	*p	*t	*c	*k
Nasal:	*m	*n		*ŋ
Fricative:		*s		*h
Tap:		*r		
Approximant:			*j	

The proto-Korean consonants are presented in Table 2.6. The reinforced and aspirated consonants of modern Korean are secondary, resulting from clusters produced by syncope. Thus pK, like pJR, had no laryngeal contrast among consonants. The modern reinforced consonants reflect the clusters /pC/, /sC/, and /psC/ in LMK. Gaps in the inventory of clusters suggest that some /sC/ clusters may reflect earlier *ti/əC or *ci/əC, while expected but unattested */kC/ clusters may result in aspirates. The Early Middle Korean (EMK) sources for the LMK aspirates cited by Lee (1991) have the form EMK *hi/əCV-* > LMK *ChV*, e.g. EMK *hiki-n* > LMK *khú-n* ‘big-ADNOM’.

As we have seen, pJR and pK have rather simple and very similar phonemic inventories, with six or seven vowels, no laryngeal (manner) distinction among consonants, and lexical pitch accent. The functional load of pitch accent is less in pK than in pJR, but this is consistent with the fact that pK allows consonant codas in non-bound roots (that is, nouns), while pJR does not.

The prehistory of Korean is characterized by major changes in root structure. Syncope was a major such factor; a second was medial obstruent lenition (Lee 1972a, b, Martin 1996, Lee and Ramsey 2011). The results of lenition are observable, first, in instances of LMK /W/ [β], /l/ [r], /z/ and /G/ [ɦ] resulting from earlier /p/, /t/, /s/ and /k/ (Table 2.7, based on Lee and Ramsey 2011: 136-153).

Table 2.7 *Obstruent lenition attested in Late Middle Korean*

LMK	Source	Segmental environments	Morphological environments
/W/ [β]	/p/	V_V, y_V, l_V, z_V	morpheme boundary
/l/ [r]	/t/	V_V	morpheme boundary, nativized SK
/z/	/s/	V_V, y_V, *l_V, n_V, m_V, V_W, V_G	morpheme boundary and root internally
/G/ [ɦ]	/k/	l_V, z_V, i_V	morpheme boundary

Martin (1996) takes the view that all instances of the LMK voiced spirants /w/, /z/ and /g/ result from /p/, /s/, /k/, either allophonically at a morpheme boundary or diachronically within roots, before the weak vowels /u/ [i] and /o/ [ʌ].⁵ Martin (1996: 54) claims that “the group of nouns with medial lenition expanded to include, at least sporadically, nouns with nonminimal vowels in the second syllable.”

But as Vovin (2010: 14) points out, the restriction of lenition to medial position before the least sonorous vowels is odd. Furthermore, when pre-LMK sources give evidence for medial stop lenition, the LMK outcome is not a LMK voiced spirant. This is particularly clear in the case of /p/, where the Chinese *Jīlín lèishì* (鷄林類事 1103-1104, or *Kyeylim ywusa* in the Korean reading of its name) transcriptions for LMK *twūlh*, *twuūl* ‘two’ and *swul*, *swuul* ‘wine’ are best interpreted as *tupir* and *supir*. To this we must add the fact that intervocalic /p/, /t/, /k/ before non-weak vowels are rare root-internally in LMK. These considerations lead me to hypothesize that the LMK spirantizations were the tail end of a more general process, which began with the lenitions in Table 2.8.

Table 2.8 Hypothesized lenitions for pre-Late Middle Korean

	Pre-LMK		LMK
a.	*VpV	>	VV[labial]
b.	*VtV	>	VrV
c.	*VkV	>	V(V) (with reduction of hiatus)

Each of these processes is supported by well-known developments, such as: (a) the lenition of EMK /p/ in ‘two’ and ‘wine’, (b) the lenition of the indicative assertive suffix *-ta* > *-la* [ra] after the copula and certain auxiliaries, (c) the lenition of initial /k/ > ∅ after vowels in the postnominal particles *kwá* ‘with’, *kwós* ‘precisely’, and *kwóm* ‘each’.

4. Phonological correspondences

I posit the vowel correspondences in Table 2.9 between pK and pJR.

Table 2.9 Proto-Korean :: proto-Japanese-Ryukyuan vowel correspondences

pK		pJR	
*i	::	*i	
*i	::	*ə	
*u	::	*u	
*e	::	*e	(in non-final environments > *i through mid vowel raising)
*ə	::	*ə	
*o	::	*o	(in non-final environments > *u through mid vowel raising)
*a	::	*a	

Other than mid vowel raising in Japanese and Ryukyuan, I have omitted from Table 2.9 what I consider to be secondary developments in the two proto-languages, such as assimilation to another vowel in the same root, or, in the case of pK, vowel harmonic alternations. The new proposal among these correspondences is for pK *e, for which pJR *ə or its equivalent have been proposed in previous research. In onset position this is unproblematic: in comparisons like pK *ep- ‘bear on back’ :: pJR *əp- id. the pK initial vowel may reflect earlier *ə or *i. But comparisons such as pK *kes ‘thing, matter’ :: pJK *kətə 2.3 id. require reconsideration.⁶ As noted above, vowel outcomes are further complicated by the co-occurrence restrictions known as Arisaka’s laws in Japanese, and root-internal effects of vowel harmony in Korean.

In contrast to the vowel correspondences, the pJR :: pK consonantal correspondences are relatively straightforward, as we might expect from the minimal inventories in Tables 2.4 and 2.6. However, as we see in Table 2.6, pK has two consonants, *h and *c, that are not reconstructable for pJR. Any comparison of pJR and pK must account for these consonants. In the first part of this section I focus on this problem. In the second part I focus on the more complex matter of correspondences reflecting on earlier Korean syncope and lenition.

Following a suggestion of Vovin (1992: 340-341), I propose that the pJR correspondence for pK *h is *s before *i and *j, *k elsewhere (Table 2.10).

Table 2.10 Proto-Japanese-Ryukyuan correspondences for proto-Korean *h

pJR	pK	Reconstruction
1. *se- A ‘do’	:: *hjə-, LMK <i>hó(y)</i> - id.	*hjə-
2. *siro B ‘white’	:: *hjə-, LMK <i>hóy</i> id., <i>syey</i> - ‘whiten’	*hjə- (+ pJR *-ro ATTR) ⁷
3. *kasa 2.2b ‘bulk’	:: *ha-, LMK <i>há</i> - ‘many, great’	*ha- (+ pJR *-sa NMR
4. *kəsi 2.? ‘lower back’	:: *heli, LMK <i>helí</i> - id.	*həti ⁸

The first two lexical comparisons involve a secondary vowel correspondence, pJR *Ce > *Ci :: pK *Cje. This correspondence is supported by examples such as pJK *sima ‘island’ :: pK *sjəm id., and pJK *me, *mi- ‘woman’ :: pK *mjənir ‘daughter-in-law’. In the pJR forms, the vowel surfaces as *e in root-final position (1), *i elsewhere (2), and the first syllable of ‘island’. Reconstruction of *Cjə in pK is supported by the stem alternation shown by LMK ‘white and ‘whiten’. Recall that the diphthong /yo/ < *jə is disallowed in LMK. In stem-final position the diphthong is eliminated by metathesis of the glide and nuclear vowel. In other positions the diphthong is retained, but the vowel fronted to /e/, as in LMK *yetúlp* ‘8’ < *jətərp, discussed in section 3. Another possible outcome of pK *Cjə may be shown by LMK *siki*- ‘cause to do’, *sikpu*- ‘want’, which as shown by Lee (1991) seem to be related to a root *sik- ‘do’.

Further support for reconstructing an initial consonant distinct from *s- in pJR ‘do’ may be supported by a paradigmatic alternation in WOJ and EOJ adjectives. As many linguists have observed, the conclusive and adnominal (attributive) forms in this paradigm appear to be a WOJ/EOJ innovation, as they are not found in Ryukyuan (or indeed most Kyūshū varieties). One idea about the source of this part of the paradigm is that it results from combining pJR *se- ‘do’ as a ‘light’ verb with the originally uninflecting adjectival stem. The WOJ/EOJ

conclusive suffix *-si* may directly reflect continuative **s-i* at a period prior to the development of the OJ conclusive *s-u*; alternatively, ‘light’ ‘do’ may have grouped with *ar-i* ‘to exist’ in having a conclusive in *-i*. How then to relate the adnominal suffix, which we know to have been **-ke* on the basis of its EOJ form *-ke*, raised to *-ki* in WOJ by mid vowel raising? On the hypothesis that the adnominal involves the same ‘light’ verb ‘do’, we must posit a consonant initial that surfaces as OJ /s/ before /i/ but /k/ elsewhere. This is exactly the alternation predicted by the conditioned correspondences in Table 2.10. The suffix vowel **-e* in the adjectival adnominal suffix may reflect the original stem vowel of ‘do’, or it may involve a distinct suffix no longer recoverable. Whichever is the case, the alternation provides pJR-internal evidence for an initial distinct from **s* for pJR; **h-* is a phonetically plausible candidate.

Regarding pK **c*, Table 2.11 presents evidence that it corresponded to pJR **s* before high vowels and **t* elsewhere.

Table 2.11 Proto-Japanese-Ryukyuan correspondences for proto-Korean **c*

pJR	pK	Reconstruction
5. <i>*kunsu</i> 2.5 ‘arrowroot’	:: <i>*hicirk</i> , LMK <i>chulk</i> id.	<i>*hincu</i> (+ pK <i>-irk?</i>)
6. <i>*kusi</i> 2.3 ‘skewer’	:: <i>*koc</i> , LMK <i>kwoc</i> id., <i>kwos-</i> ‘insert’	<i>*koc-</i> (+ pJK <i>-i</i> NMR)
7. <i>*puta-</i> ?2.1 ‘two’	:: <i>*pəcak</i> , LMK <i>pcak</i> ‘a pair’	<i>*pəca</i> (+ pK <i>-k?</i>) ⁹
8. <i>*mi(t)-</i> ?1.1 ‘three’	:: <i>*mjech</i> , LMK <i>myéch</i> ‘a few’	<i>*mjec</i> (+ pK <i>-h/k?</i>)

The outcome of the pJR vowel in (7) ‘two’ is supported by several other instances of pK **ə* :: pJR **u* adjacent to a labial consonant:

9. pJR **pej* in EMJ *fe+saki* ?3.1 ‘prow’ (‘boat+tip’) :: pK **pəj*, LMK *póy* ‘boat’ < pJK **pəj* but **pu-* in pJR **pu+naj* OJ *pune* ‘boat’ (‘boat+root’)¹⁰
10. pJR **pe(j)* in EMJ *feso* 2.1 ‘navel’ :: pK **pəj*, LMK *póy* ‘stomach’ < pJK **pəj* but also EMJ *foso* < **pəj* + ?sə/o
11. pJR **mej* in OJ *me* ‘seaweed’, but also OJ *mo* ‘seaweed’ :: pK **mər*, LMK *mól* id. < pJK **mər*

The otherwise unusual alternations of /e/ and /o/ in (9-11) can be explained by the relative timing of labial assimilation of **ə* and monophthongization of **əj*. Where **j* is lost first, **ə* rounds to **o* after a labial; when this occurs non-finally (in particular before a morpheme boundary that has become opaque, as in ‘boat’), mid vowel raising applies, **o* > *u*. Where diphthongization applies first, the result is /e/.

Next we proceed to comparisons involving root structure change in Korean. We saw two examples involving syncope in (5) ‘arrowroot’ and (7) ‘two, a pair’. Table 2.12 presents a few more.

Table 2.12 Syncopated Proto-Korean **i*, **ə*

pJR	pK	Reconstruction
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12. *sik- A ‘spread it’	::	*səkər-, LMK <i>skór-</i> id.	*sjək- (+ pK *-ər- CONT)
13. *sup- A ‘suck, inhale’	::	*səpər-, LMK <i>spór-</i> id.	*səp- (+ pK *-ər- CONT)
14. *pə(n)tə 2.2a ‘interval’	::	*pət-aj, LMK <i>pstáy-</i> ‘time’	*pə(n)tə- (+ pK *-aj LOC)
15. *əmə- A ‘heavy’	::	*mi-kep-, LMK <i>mukép-</i> id.	*imi- (+ pK *-ka/ep- ADJ)
16. *u/imə 2.3 ‘yam’	::	*mah, LMK <i>mah</i> id.	*(j)əmah ¹¹

Next consider comparisons based on medial consonant lenition in pK (Table 2.13).

Table 2.13 Proto-Korean medial consonant lenition

pJR	::	pK	Reconstruction
17. *takaj 2.1 ‘bamboo’	::	*taj, LMK <i>táy</i> id.	*takaj
18. *taka-j 2.3 ‘height’	::	*tarák, LMK <i>talak</i> ‘loft’	*takar (+ pK -Vk LOC)
19. *tuku/oj 2.3 ‘moon’	::	*tər, LMK <i>tól</i> id.	*tokər
20. *naka 2.4 ‘inside’	::	*an(-)h 1.1 LMK <i>ánh</i> id.	*nakəh
21. *ka(:)nkaj 2.5 ‘shadow’	::	*kənərh, LMK <i>kónolh</i> id.	*kankərh
22. *nanka- B ‘long’, *nanka-r- B ‘flows’	::	*nái, LMK <i>nǎy</i> ‘throughout, during’	
23. *sanki 2.1 ‘heron’, suffix in bird names	::	*sái, LMK <i>sǎy</i> ‘bird’	*saŋi
24. *pitə- ?2.3, ?2.4 ‘one’	::	*piris, LMK <i>pilús</i> ‘first’	*pitə (+ pK -s NMR)
25. *kata ?2.3 ‘one of pair’	::	*hət(V)-, EMK <i>hət-ən</i> ‘one’, cf. LMK <i>holo</i> ‘one day’	*hatə
26. *ita-r _{INTR} /s _{TR} - A ‘attain’	::	*íri/ə-, LMK <i>ĩ(l)-ilú/ó-</i> ‘arise’	*iti/ə- (+ pJK *-ar- INTRANS)
27. *pinti 2.2b ‘elbow’	::	*pérh ‘arm’, LMK <i>pólh</i>	*pintəh
28. *ap- B ‘meet, fit’	::	*e/apí/ər-, LMK <i>ewúl-</i> ‘meet’, <i>awól-</i> ‘join it’	*ap- (+pK *-ər- CONT) ¹²
29. *əpə- B ‘big’	::	*ípij-, LMK <i>ewúy-</i> ‘broad, big’	*ipi- (+pK *-i- INTRANS)

(17-19) exemplify a correspondence where pJK apophonic nouns correspond to pK nouns with a sonorant final. Further examples are:

30. pJR *pəj 1.2 ‘fire’, OJ *po-* ~ *pwi* :: pK *pir, LMK *púl* id. < pJK *pir¹³
 31. pJR *muj 1.1 ‘body’, OJ *mu-* ~ *mwi* :: pK *mom, LMK *móm* id. < pJK *mom

Vovin (forthcoming) argues that earlier Japanese ‘fire’ should be reconstructed as *poj rather than *pəj, based on an attestation of the compound form of this noun as 本 in the *Kojiki* songs. Vovin follows Mabuchi (1957, 1972) in interpreting this phonogram as <pwo> in the *Kojiki* songs (and, according to Mabuchi, sound glosses). However Mabuchi (1957: 86)

explicitly rejects this example as a mistranscription. The philological rationale for interpreting the OJ compound form for ‘fire’ as *po-* < **pə-* is explained by Wenck (1954: 268-269).

Vovin (2010: 194) considers (31) to be a loan from Korean to WOJ “because cognates of WOJ *mī* ‘body’ are not found in Ryukyuan”. But reflexes of **muj* in its derived meaning ‘self, person’ occur throughout Ryukyuan (e.g. Nakijin *a-ga-mi* ‘we’, Nakasone 1983; cf. WOJ *a ga mwi* ‘myself’). Since the direction of grammaticalization is clearly ‘body’ > ‘person’ > ‘self’, Vovin’s hypothesis would require that ‘body’ was borrowed into WOJ, then the grammaticalized form was borrowed into pR.

In this section we have seen comparisons involving basic vocabulary, including body parts (4, 10, 27, 31), numerals (7, 8, 24, 25), and basic verbs and adjectives (1-3, 15, 18, 22, 28, 29). It may be appropriate to conclude the section with a comparison of the pJR and pK numeral inventories, taking into account the four comparisons made here.

Table 2.14 Proto-Japanese-Korean pronouns

Gloss	pJR		pK
‘1’	* <i>pitə</i>	::	* <i>piris</i> ‘first’
	* <i>kata</i> ‘one of pair’	::	* <i>hət(V)-</i> ‘one’
‘2’	* <i>puta</i>	::	* <i>pcak</i> < * <i>pəcak</i> ‘double’
			* <i>tupir</i> ‘two’
‘3’	* <i>mit</i>	?::	* <i>mjech</i> ‘how many, a few’
			* <i>se-</i> ‘three’
‘4’	* <i>jə</i>	?::	* <i>ne</i>
‘5’	* <i>itu</i>		* <i>tasə</i>
‘6’	* <i>mu(t)</i>		* <i>jəsəs)</i>
‘7’	* <i>nana</i>		* <i>nilko/up)</i>
‘8’	* <i>ja</i>	?::	* <i>jətərp)</i> ? < * <i>jə+tərp</i> ‘4x2’
‘9’	* <i>kəkənə</i>		* <i>ahop</i>
‘10’	* <i>təwə</i>		* <i>jer</i>

It has long been observed (e.g. Ellis 1873: 50) that the Japanese numerals ‘2’, ‘6’, and ‘8’ are the product of a doubling game, exploiting vowel alternations with the base numerals ‘1’, ‘3’, and ‘4’, where **i* alternates with **u* and **ə* with **a* in the doubles. The doubles are thus less likely to show cognates in any language that does not employ a similar strategy; but the base numerals ‘1’, ‘3’, and ‘4’ all show possible JK cognates, although ‘3’ is semantically and ‘4’ phonologically weaker. PK **pcak* < **pəcak* ‘double, one of a pair’ and ‘eight’ suggest that pK may have employed the strategy as well. PK **jətərp* ‘eight’ is analyzable as ‘4x2’; the alternative analysis ‘two (from) ten’ would not predict the first syllable vowel.

5. Pronouns

I present in Table 2.15 candidate cognates from the pJR and pK from the pronominal systems.

Table 2.15 Proto-Japanese-Korean pronouns

pJR		pK	Reconstruction
32. *a, are 2.4 1P (exclusive?)	::	*a- in kin terms ¹⁴	*a
33. *wa 1.3a, ware 2.4 1P (inclusive?)	::	*uri, LMK <i>wúli</i> 1P plural, ?*ij LMK <i>úy</i> 1P (矣 in EMK idu texts)	?*wa
34. *na, nare ?2.4/5 2P, pR reflexive	::	*ne, LMK <i>ne</i> 2P	*na ¹⁵
35. *kə 1.1, *kəre 2.1 ‘this’ (proximal)	::	*ki, LMK <i>ku</i> ‘that’	*ki ¹⁶
36. *sə 1.1, *səre 2.1 ‘that’ (mesial)	::	*sə, LMK <i>so</i> nominal complementizer ‘that’	*sə
37. *e-, OJ <i>i-</i> ‘which’ ¹⁷	::	*e-, LMK <i>e-</i> id.	*e-
38. *məsi 2.2b ‘perchance’, OJ adverb introducing polar interrogatives	::	*misi(k), LMK <i>musú(k)</i> ‘what’	*misi(k)

1P: first person; 2P: second person.

6. Grammatical formatives

Table 2.16 introduces verb affixes, Table 2.17 postnominal particles.

Table 2.16 Proto-Japanese-Korean verbal affixes and postverbal particles

pJR		pK	Reconstruction
39. *-i infinitive/adverbial	::	*-i, LMK <i>-i</i> adverbial	*-i ¹⁸
40. *-ro clausal nominalizer	::	*-i/ər, LMK <i>-ú/ól(?)</i> clausal nominalizer. LMK <i>-ú/ól</i> forms object nominalizations.	*-or
41. *-ku gerund	::	*-ko/-ku, LMK <i>-kwó/ú</i> gerund	*-ku/o ^{23 19}
42. *-a infinitive in irrealis conditional	::	*-é/á	*-a
43. *-Vs- (OJ) honorific	::	*-i/əsi-, LMK <i>u/osí</i> id.	*-as- (+ pK -í ADV)
44. *-nV- perfective	::	*-nə-, LMK <i>no-</i> processive	*-na-
45. *i- active prefix	::	*-i, LMK <i>-i</i> nominative < ergative postnominal particle	*-i
46. *tə ‘that’ complementizer	::	*tə, LMK <i>tó</i> ‘that’ complementizer (follows nominalized clause)	*tə
47. *ka interrogative complementizer (with nominalized clause)	::	*ka, LMK <i>ká</i> interrogative complementizer (follows nominalized clause)	*ka

The suffixes in (39-42) are noteworthy because they include all of the verbal inflectional root suffixes reconstructable for pJR. Of these *-ku* is primarily an adjectival suffix, but it attaches to the stative verb **ar-* ‘exist’ to derive adverbial **aku* in OJ *kaku* ‘thusly’ < **kə* ‘this’ + *aku* ‘being’. The one OJ inflectional root suffix not included in this group, conclusive *-u*, is not clearly reconstructable for pJR, as reflexes of the conclusive category in Ryukyuan show up primarily in the form of reflexes of the distinctive conclusive forms of existential **ar-i* and **wor-i* ‘exist-CONC’.

Table 2.17 Proto-Japanese-Korean postnominal particles

pJR	pK	Reconstruction
48. <i>*-nə</i> genitive	:: <i>*-i/ən</i> , LMK <i>-ú/ón</i> noun modifier	<i>*-ən</i>
49. <i>*-tə</i> comitative, adverbial	:: <i>*tə/is</i> , LMK <i>tó/ús</i> adverbial, attaches to verb/adjective stems, nominalizations	<i>*tə</i> (?+ pK -s ADV)
50. <i>*-pa</i> topic	:: <i>*pa</i> , LMK <i>pá</i> bound noun ‘way, thing that’ (attaches to nominalizations)	<i>*pa</i>

7. Conclusion

This chapter has presented a brief argument for a genetic affiliation between Korean and Japanese. Internal and language group-comparative reconstruction leads to the reconstruction of quite similar phonemic inventories. Earlier research has uncovered a number of potential cognates, which I have supplemented here. The main challenge for the comparativist is to account for changes in root structure, especially in Korean, where our historical and comparative information is relatively shallow.

Notes

- 1
- 2 In this paper I use Vovin’s terms WOJ and EOJ to refer to specific properties of these varieties; OJ is used to refer to properties shared by both.
- 3 Hattori himself proposed reconstructing an additional high vowel, but Whitman (1985) shows that the correspondences Hattori adduces are otherwise explicable. Similarly, but for a different set of cases, Frellesvig & Whitman (2004, 2006, 2008) argue for reconstruction of a high central **i* on the basis of alterations of *ʰoʰ* with *ʰeʰ* rather than the expected *ʰwiʰ* in WOJ. However the number of relevant alternations in WOJ is small, and Frellesvig & Whitman’s argument is based in part on external evidence involving both loans from Korean and possibly inherited cognates. To avoid circularity, in this paper I adopt the standard six-vowel hypothesis.
- 4 WOJ does attest nonfinal /e/ in examples such as *simyes-* ‘indicate’, *sakyeb-* ‘shout’, *kapyer-* ‘return’, *kyepu* ‘today’, *pyeta* ‘edge, shore’, *pyera* ‘moldboard’, as pointed out by

Pellard (forthcoming), who also observes correctly that such examples are problematic for an account that predicts word-nonfinal mid vowel raising in WOJ. The first three examples may involve original root-final *e. ‘Moldboard’ probably stands in a loan relationship with LMK *pyet*. ‘Today’ may involve contraction of the *ki- found in *kinopu* ‘yesterday’ and *kiso* ‘last night’, although there is no clear source for a second element in *ki+apu. Frellesvig & Whitman (2004, 2008) reconstruct the proximal demonstrative *ko-* as *ki- and claim that its function was originally mesial. If this is correct, ‘today’, ‘yesterday’, and ‘last night’ may involve *ki- in the first syllable, with fronting of *i before a coronal sonorant in the last two forms.

- 5 The role of accent in Martin’s hypothesis is unclear. According to Martin, lenition occurs before accented /ó/, /ú/ in verbs of shape /(C)VCó/ú, but it also occurs before unaccented /u/, /o/ in nouns.
- 6 Vovin (2010: 149) rejects this comparison because he claims that the Ryukyuan reflex of *kətə is not used in the bound noun or nominalizing function ‘the one, the fact that’ of WOJ *koto* and LMK *kes*. But surely this latter, grammaticalized function is derived from the basic meaning ‘thing’, which Ryukyuan retains. At the same time, Vovin is right to point out that the potential consonantal correspondence pK *s# :: pJR *tV needs further clarification (Vovin suggests that it is a loan correspondence). A better comparison involving what I believe to be the same root is LMK *kotho-* ‘be the same’ < pK *kot+ho(j)- ‘do’ :: pJR *nkətə + adjectival formants id., which is abundantly attested in Ryukyuan (cf. Nakijin *gutuu* < *nkətə-ku ‘be the same-GER’, Nakasone 1983).
- 7 Reconstruction of pJR *-ro is based on the hypothesis that the verbal adnominal suffix *-ro (or *-or) attached to some roots that have survived as adjectival stems. Examples of such *CV roots include *siro* < *si-ro ‘white’ and *kuro* < *ku-ro ‘black’; examples of *CVC roots include WOJ *awo* ‘blue/green’ < *aw-ro and *kuso* ‘shit’ < *kus-ro (cf. *kusa-* ‘smelly’).
- 8 As noted by Vovin (2003: 340), this is a widely cited comparison. The reconstruction posited here assumes lenition of *t to /r/ in Korean, and palatalization of *t before *i in Japanese (Whitman 1985).
- 9 Alexander Vovin (pc) points out that LMK *pcak* and Modern Korean *ccak* can have the meaning ‘one of a pair’, as indicated by the common LMK character gloss 隻 (Chinese *zhī*) ‘one of a pair’ and compounds like *pcak nwún*, Modern Korean *ccak nwun* ‘mismatched eye’. But the ‘pair, double’ meaning is clear in expressions like *pcak machwo-* ‘match as a pair’ < *pcak* + ‘match, fit together’, and Modern Korean *ccak swu* ‘even number’ < *ccak* + ‘number’. The basic meaning is ‘matched pair’; synecdoche gives ‘pair’ > ‘double’ > ‘a double’ > ‘one of a pair’.
- 10 The idea that pJR *punaj is a compound with *naj ‘root’ is due to Osada (1982). Similar compounds with *-ne* in OJ are *ki ~ kine* ‘pestle’ and *kaki ~ kakine* ‘fence’. We know the pJK form is *pəj because it is attested as OJ *pe* ‘prow’. Vovin (2010) suggests that OJ *pe* is a borrowing, but this would require that *pe* was borrowed prior to OJ, spread to non-central varieties in the compound form, and then semantically narrowed in OJ.
- 11 This comparison assumes progressive assimilation in pJR prior to labialization of the initial vowel.
- 12 Vovin (2010: 229) rejects this comparison because the LMK [+RTR] variant *awól-* is transitive ‘join it’. But the [-RTR] variant *ewúl-* ‘meet, join together’ preserves the intransitive meaning. Vovin also objects that the function of *-ər- (which I have glossed

as CONT(inuative) is unclear. But as pointed out in Whitman (1985), *-ər- must be a suffix, because this verb has an OK attestation cited in a Silla toponym in *Samguk sagi* 34, 阿火 <apər>. In this attestation -ər- is the adnominal suffix, so the form must be segmented *ap-ər*. The OK form shows clearly that the original stem-final consonant was /p/, and that -ul- in the LMK form must have accreted between OK and LMK. The suffix, whatever its function, created the environment for lenition of /p/.

- 13 I am grateful to Sven Osterkamp for bringing Wenck's discussion to my attention.
- 14 E.g. LMK *ákí* 'baby', *atól* 'son' (cf. *stól* 'daughter'), *apí* 'father' (cf. OJ *pi+kwo* 'male' < *pi* + 'child'), *azo* 'younger brother' (cf. OJ *se* 'brother'), *azóm* 'kin, relatives', *acapí* 'uncle', *acómi* 'aunt' (cf. *émi* 'mother'), *ahú/óy* 'child'.
- 15 2P *na* is in vowel harmonic opposition to 1P *na*.
- 16 Frellesvig & Whitman (2004, 2008) argue for a deictic shift in the pJR demonstrative paradigm, where an original proximal demonstrative *i (cf. *ima* 'now' 2.4/5 < *i-ma 'this interval) is replaced by *kə.
- 17 The pJR reconstruction follows Thorpe (1983).
- 18 (37) and (38) are probably the same morpheme, but they show accentual differences in Japanese. (37) occurs mainly after adjectives in LMK, but adverbializes verbs in OK and in EMK *kugyōl* texts. (38) occurs in e.g. LMK *khúy* 'height' < *khú-* 'big' + *i*. See Martin (1992: 553-555).
- 19 The OJ form is limited to adjectival gerunds, except the OJ form *aku* < *ar-ku 'be-GER' visible in e.g. *kaku* 2.2b 'thus' < *kə+ar-ku 'this be-GER'.

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