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THE ORIGIN OF THE JAPANESE AND KOREAN ACCENT SYSTEMS

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S.R. Ramsey writes (1979: 162):

"The patterning of tone marks in Old Kyoto texts divides the vocabulary into virtually the same classes as those arrived at by comparing the accent distinctions found in the modern dialects. This means that the Old Kyoto dialect had a pitch system similar to that of proto-Japanese. The standard language of the Heian period may not actually be the ancestor of all the dialects of Japan, but at least as far as the accent system is concerned, it is close enough to the proto system to be used as a working model. The significance of this fact is important: It means that each of the dialects included in the comparison has as much to tell, at least potentially, as any other dialect about Old Kyoto accent."

The system of tone marks in Old Kyoto texts was adapted from the Chinese convention for marking tones: a dot placed next to a character at the lower left corner represented the *píng* (Even) tone, while a dot placed at the upper left corner represented the *shǎng* (Rising) tone. Ramsey argues that though it "has been commonly assumed that the pitches of the Old Kyoto dialect were similar to those found in the dialect now spoken in the same geographical area" (161) this assumption is in fact erroneous. He lists the following correspondences (163):

"Pitch data from representative dialects[13] are given in Table 1. Phonetic shapes vary much more widely among the dialects, especially the Tokyo-type and the Kagoshima-type, than these samples indicate, but the data in Table 1 do represent all the accent distinctions, and these can be compared fruitfully to the Old Kyoto pitches.

TABLE 1 Pitch Shapes in Some Japanese Dialects

Class	*Gloss*	*Kyoto-type*		*Tokyo-type*		*Kagoshima-type*
		Kyoto	*Kōchi*	*Tokyo*	*Aomori*	*Kagoshima*
1.1	body	mi:, mi:-ga	mi, mi-ga	mi-ga	mi-ga	mi, mi-ga
1.2	sun	hi:, hi:-ga	hi, hi-ga	hi-ga	hi-ga	hi, hi-ga
1.3	tree	ki:, ki:-ga	ki, ki-ga	ki-ga	ki-ga	ki, ki-ga
2.1	metal	kane, kane-ga	kane, kane-ga	kane, kane-ga	kane, kane-ga	kane, kane-ga
2.2	stone	isi, isi-ga	isi, isi-ga	isi, isi-ga	isi, isi-ga	isi, isi-ga
2.3	dog	inu, inu-ga	inu, inu-ga	inu, inu-ga	inu, inu-ga	inu, inu-ga
2.4	sea	umi, umi-ga	umi, umi-ga	umi, umi-ga	umi, umi-ga	umi, umi-ga
2.5	autumn	aki, aki-ga	aki, aki-ga	aki, aki-ga	aki, aki-ga	aki, aki-ga

TABLE 2 Old Kyoto Tone Marks and Accent Distinctions in the Dialects

Class	*Gloss*	*Old Kyoto*	*Kyoto*	*Tokyo*	*Aomori*	*Kagoshima*
1.1	body	R, R-R	mi[14]	mi	mi	A mi
1.2	sun	R, R-R	hí	hi	hi	A hi
1.3	tree	E, E-R	´ki	kí	kí	B ki
2.1	metal	RR, RR-R	kane	kane	kane	A kane
2.2	stone	RE, RE-R	ísi	isí	isi	A isi
2.3	dog	EE, EE-R	ínu	inú	inú	B inu
2.4	sea	ER, ER-R	´umi	úmi	úmi	B umi
2.5	autumn	ER, ER-R	´akí	áki	áki	B aki

13. Kyoto, Kōchi, Tokyo, and Kagoshima data are taken from Hirayama (1960). The Aomori data are from that source, but the shapes are adjusted according to information given in Kindaichi Haruhiko, *Meikai Nihongo akusento jiten* (Sansei-dō, 1958).
14. Kyoto monosyllables are automatically lengthened; cf. Table 1."

In Table 1, a line over, under, or through a syllable represents a High, Low, or Falling pitch, respectively. As far as I can see, Kagoshima *aki* High-Low is a printing error for Low-High. In Table 2, an accent represents a High pitch which is followed by a Low pitch, while A and B represent a final Low or High pitch, respectively. The pre-accented Kyoto forms have initial Low pitch.

Ramsey now identifies the Even and Rising tones of the Old Kyoto dialect as High and Low pitch, respectively (165). It follows that the location of the fall in

pitch is preserved in the modern Tokyo dialect, whereas the pitch fall occurs one syllable earlier in the modern Kyoto dialect. This development may be called the Muromachi retraction, or simply *Ramsey's law*. The original pitch of the initial syllable is preserved in the Kagoshima dialect, where it has moved to the end of the word. Similarly, the rightward spread of the initial Low pitch yielded the merger of class 2.2 with class 2.1 in Aomori. This development was evidently earlier than the loss of initial High pitch in class 2.3 in the Tokyo type dialects. The Ryukyu dialects belong to the Kagoshima type.

Classes 1.2 and 2.5 have defied explanation so far. The accentuation of the Kyoto type dialects points to an earlier floating High tone which is now realized as a Falling tone on the final syllable of the stem as a result of the Muromachi retraction. If the Chinese representation of the *shăng* (Rising) tone was employed to indicate Low pitch in Japanese, it could not unambiguously express a Rising contour consisting of Low plus High pitch. The so-called *tōten* "east-dot", which was placed slightly above the position normally used for the Even tone, may actually represent a Low-High (Rising) contour (cf. Ramsey 1979: 164, fn. 15). The floating High tone was evidently lost outside the Kyoto type dialect area because the Muromachi retraction did not take place and original final long vowels were not preserved.

This takes us to the origin of the floating High tone. It has long been recognized that certain Japanese vowels arose from early contractions, e.g. *ki* < *kii* < **koi* 'yellow', cf. *ko-gane* 'gold' < 'yellow-metal'. The long vowel of this word is preserved in the Myōgishō and in the Hiroshima dialect, where the floating tone was lost (cf. Martin 1987: 449). We may now reconstruct an original Low-High tone pattern for this word. Similarly *ame* < **amai* 'rain', *kage* < **kagai* 'shade', *koe* < **kowai* 'voice', for which an original High-Low-High tone pattern may be reconstructed. There is a remarkable collection of animal names in class 2.5, e.g. *abu* 'gadfly', *ayu* 'sweetfish', *hamo* 'eel', *hebi* 'snake', *hiru* 'leech', *huna* 'crucian carp', *koi* 'carp', *kumo* 'spider', *saru* 'monkey', *sigi* 'snipe', *turu* 'crane', *zuku* 'owl' (cf. Martin 1987: 615f.). This suggests the earlier presence of a suffix, perhaps **-u*, which was lost but left a trace in the floating High tone.

In some disyllabic words the reconstructed High-Low-High tone pattern may have originated not from a suffix but from a lost medial vowel, e.g. *hebi* < *fembi* < **paimpi* 'snake', Korean *paymi* (cf. Martin 1987: 404). The initial syllable of this word is marked in the Myōgishō with a dot placed at the upper right corner, which represented the *qù* (Going) tone in the Chinese system. Though Martin follows Kindaichi's interpretation of this tone mark as a Low-High (Rising) contour (182, 350), there can be little doubt that it represents a Falling tone (cf. Pulleyblank 1984: 36, 59). This is in accordance with Ramsey's theory. It is also in agreement with the tone pattern of early Korean *pâyyam* 'snake', which is High-Low.

Other words where a medial vowel may have been lost are e.g. *kumo* 'spider', if this is from **koompu* (Hattori *apud* Martin 1987: 463), and *saru* 'monkey' if from *saaru* (518), cf. also *minna* < **muinna* 'all', where the Osaka and Kochi tone pattern Low-High-Low points to Proto-Japanese High-Low-High, similarly *makka* < **mat-aka* 'crimson' < 'perfect-red'. Thus, it appears that the floating High tone originated from a redistribution of three pitches over two syllables.

A parallel floating Low tone cannot be reconstructed because it does not yield an overt reflex in the material. Yet the accentuation of particles points to a symmetry in the tonal system (cf. Martin 1987: 170). The *qù* (Going) tone mark with the particles *ni* and *wo* points to a High-Low (Falling) tone contour while *mo* and *yo* were apparently Low-High (Rising) and *koso* was High-Low-High. The initial High pitch of the latter particle was evidently suppressed after a preceding Low pitch, as it was in the case particles. In the same way the initial Low pitch of *mo* was also suppressed after a preceding Low pitch, and so it was in *yori*, which had a Low-High-High tone pattern. When the particles became enclitics, they gradually lost their independent accentuation. This process was earlier with *no* than with the other case particles.

Why was the *shăng* (Rising) tone mark employed to indicate Low pitch in Japanese? The obvious answer is that this was the closest correspondence at the time when the notation was introduced, which may have been earlier or slightly later than the tonal split between *yīn* (upper) and *yáng* (lower) register in (late Tang?) Chinese. When the split became phonemic, the new Rising *yángpíng* tone (Mandarin 2) pushed the older Rising *shăng* tone (Mandarin 3) down, which gave rise to a series of adjustments in the separate dialects. The following table may serve as an illustration (cf. Norman 1988: 196, 202, 218; the numbers 1...5 refer to Low...High pitch):

	Běijīng (Mandarin)	Yŏngkāng (Wú)	Guăngzhōu (Yuè)
yīnpíng (H-HH)	55	44	53
yángpíng (L-HH)	35	22	21
yīnshăng (H-LH)	214	35	35
yángshăng (L-LH)	214 or 51	13	24
yīnqù (H-HL)	51	52	44
yángqù (L-HL)	51	241	33

It is interesting to compare the Japanese notation with the Middle Korean system of tone marks, where *píng*, *shăng*, and *qù* denote Low, Low-High, and High, respectively (cf. Rosén 1974: 32). This system is reminiscent of a wide range of Mandarin dialects where the *yīnpíng* tone is Low (Yángzhōu 21, Xīān 31, Tàiyuán 11) while the *qù* tone is High (all of these dialects 55). In the early 16th century the four Mandarin tones *yīnpíng*, *yángpíng*, *shăng* and *qù* were described as

Korean *qù* (High), *shăng* (Low-High), *píng* (Low) and *qù* (High), respectively (cf. Rosén 1974: 117). Thus, it appears that the Japanese use of the *píng* and *shăng* tone marks for High and Low pitch, respectively, reflects the perception of early Mandarin tones by a speaker of a level tone system. It follows that the raised low *tōten* "east-dot" reflects the lowered High *yángpíng* (Rising) tone in a natural way.

We may now reconsider the possibility of a genetic relationship between Japanese and Korean. The simplification of the phonological system and the absence of an elaborate morphology in Japanese have so far prevented scholars from reaching a uniform view on the genetic affiliation of this language. If both Korean and Japanese had a level tone system and an agglutinative structure, it is to be expected that the tone pattern of a word is determined by a sequence of inherent pitch features in the root and the following suffixes. Since cognate words in the two languages can easily have had different suffixes while original prefixes seem to have been absent, the initial tone of a word should be an inherent feature of the root and we should expect a correlation between the initial tones of presumed cognates in the two languages if they are genetically related.

S.A. Starostin has recently listed evidence for three classes of tonal correspondence between Middle Korean and (Proto-)Japanese (1991: 84f.). This material will now be reviewed against the background of the theory presented above and the information provided by Martin (1987). I write *å*, *ë*, *ï* for the Middle Korean central vowels and *c*, *ch* for the unaspirated and aspirated palatals.

A. Middle Korean Low tone:
MK *path* L ≈ J *hata* HL (sic), A 'field'.
MK *pïr* L ≈ J *huguri* LLH, A 'scrotum'.
MK *tårk* L 'chicken' ≈ J *tori* LL, A 'bird'.
MK *thå-* L ≈ J *taku* A, *yaku* A 'burn'.
MK *nany-* L ≈ J *inu* A 'depart'.
MK *cur* L ≈ J *tura* LL 'line'.
MK *coch-* L ≈ J *sitagau* A 'follow'.
MK *u(h)* L ≈ J *ue* LH, A 'above'.
MK *përi* LL ≈ J *hati* LL, A 'bee'.
MK *moro* LH ≈ J *mori* LL, A 'woods'.
MK *patang* LH ≈ J *hata* LL 'rim'.
MK *niro-* LH, *nirå-* LL ≈ J *noru* A 'declare'.
MK *nyërïm* LH ≈ J *natu* LH, A 'summer'.
MK *cåra-* LL ≈ J *taru*, *tariru* A 'suffice'.
MK *kårå-* LL ≈ J *karu*, *kariru* A 'borrow'.
MK *hëri* LH ≈ J *kosi* LL, A 'loins'.
MK *tarå* LL 'other' ≈ J *yoso* LH, A 'outside'.
MK *curku* LH ≈ J *turu* LH 'vine'.

MK *ënyi* LH ≈ J *ane* LL, A ‘older sister’.
MK *månyåm* LL ‘heart’ ≈ J *mune* LH, A ‘breast’.
MK *akuy* LL ‘mouth’ ≈ J *agi*, *ago* LH, A ‘jaw’.
MK *në* L ≈ J *na*, *nare* HL ‘you’ (unclear).
MK *thop* L ≈ J *tume* LL, A ‘claw’.
MK *mï-kë-* LL ≈ J *omo-* A ‘heavy’.
MK *kyët(h)* L ‘side’ ≈ J *kata* LH, A ‘direction’.
MK *tåri-* LH ‘accompany’ ≈ J *tureru* A ‘bring as company’.

B. Middle Korean High tone:
MK *påy* H ≈ J *hune* HL, B ‘boat’.
MK *s-pyë* H ≈ J *hone* HH, B ‘bone’.
MK *par* H ≈ J *hagi* HH, HLH, B ‘shank, leg’.
MK *påy* H ≈ J *hara* HH ‘belly’.
MK *mar* H ≈ J *masu* HH ‘measure’.
MK *mirh* H ≈ J *mugi* HL, B ‘barley’.
MK *håy-* H ≈ J *siro-* B ‘white’.
MK *pïr* H ≈ J *hi* B ‘fire’.
MK *sarp* H ≈ J *sai* ‘spade’ (unclear).
MK *kår-* H ≈ J *kasuru* ‘scratch’ (unclear).
MK *cyëc* H ≈ J *titi* HL, B ‘breasts’, *ti* H, B ‘milk’.
MK *nu-n* H ≈ J *me* H, B ‘eye’.
MK *håy* H ‘sun’ ≈ J *sora* HL, B ‘sky’.
MK *pa* H ≈ J *ha*, *ba* H, B ‘place’.
MK *nu-* H ≈ J *na-* HL, *nani* HL, B ‘what’.
MK *phëri* HH ≈ J *hara* HH, B ‘field’.
MK *u-ri* HH ‘we’ ≈ J *wa* H, B, *ware* HL, B ‘I’.
MK *turumi* HHH ≈ J *turu* HLH ‘crane’.
MK *cïrkëp-* HL ≈ J *yorokobu* B ‘rejoice’.
MK *påyam* HL ≈ J *hebi* HLH, B ‘snake’.
MK *tår* H ≈ J *tuki* HH, B ‘moon’.
MK *sårh* H ≈ J *sisi* HH ‘flesh’.
MK *kurum* HL ≈ J *kumo* HH, B ‘cloud’.
MK *påra-* HH ‘hope, beg’ ≈ J *horu* ‘desire’ (unclear).
MK *thåk* H ‘hill’ ≈ J *take* HH, B ‘height’.
MK *anh* H ‘middle’ ≈ J *naka* HL ‘inside’.

C. Middle Korean long Rising tone:
MK *për* LH, *përi* LL ≈ J *hati* LL, A ‘bee’.
MK *moy* LH, *moro* LH ≈ J *mori* LL, A ‘woods’.
MK **cyër-* LH ‘salted’ ≈ J *tura-* A ‘tough’.
MK *tam-* LH ≈ J *tumu* A ‘accumulate’.
MK *torh* LH ≈ J *isi* LH, A ‘stone’.

MK *këṭ-* LH ≈ J *kayou* A ‘go back and forth’.
MK *nu-p-* LH ≈ J *neru* A ‘lie (down)’.
MK **për-* LH ‘earn’ ≈ J *hataraku* A ‘work’.
MK *kar-ki* LHH ‘mane’ ≈ J *ke* L, A ‘hair’.
MK *kï* LH ≈ J *ko*, *kono*, *kore* LL, A ‘this’.
MK *pyër* LH ≈ J *hosi* LL, A ‘star’.

The large proportion of verbs in classes **A** and **C** (30%) excludes the possibility of massive borrowing. The virtual absence of verbs in class **B** suggests that verbal roots had Low pitch in Proto-Koreo-Japanese. This is reminiscent of the situation in Vedic and Proto-Indo-European.

The exceptions to the tonal correspondences which have been adduced can be divided into borrowings, false etymologies, and unexplained material. In the case of borrowings, we are faced with the problem that Middle Korean continues the older Silla language whereas Japanese was influenced primarily by the Paekche language. Since the tone patterns of the latter are unknown, we can only speculate about the origin of the tonal differences between MK *puthyë* LL and J *hotoke* HHH ‘Buddha’, MK *tyër* H and J *tera* LH ‘temple’, MK *koïr* LL and J *koori* HHH ‘district’, MK *nat* H and J *nata* LL ‘hatchet’. Starostin lists the following unexplained instances (1991: 84):

a. Middle Korean Low tone:
MK *koc* L ‘flower’ ≠ J *kusa* HH, B ‘grass’.
MK *ëp-* L ≠ J *ou* ‘carry’ (unclear).
MK *pårk-* L ‘bright’ ≠ J *hare* HH ‘clear weather’.
MK *këphi* LH, *kaphïr* LH ≠ J *kawa* HH, B ‘skin’.
MK *pïrï-* LL ≠ J *huto-* B ‘fat’.
MK *cip* L ≠ J *ie* HH, B ‘house’.
MK *når* L ‘raw’ ≠ J *na* H, B ‘greens’.
MK *nyëki-* LH ‘consider’ ≠ J *negau* ‘request’ (unclear).

b. Middle Korean High tone:
MK *ip* H ‘mouth’ ≠ J *iu* A ‘say’.
MK *mïr* H ≠ J *mizu* LL, A ‘water’.
MK *mom* H ≠ J *mi* L, A ‘body’.
MK *kuy* H ‘ear’ ≠ J *kiku* A ‘hear’.

c. Middle Korean long Rising tone:
MK *kop-* LH ≠ J *kuwasi-* B ‘beautiful’.
MK *syëm* LH ≠ J *sima* HH, B ‘island’.
MK *kor* LH ‘valley’ ≠ J *kuro* HL ‘mound’ (unknown).
MK *tër-ëp-* LHL, *tër-m-* LH ‘dirty’ ≠ J *tuti* HH, B ‘earth’.

Half of these comparisons are not compelling for semantic reasons or inconclusive because the material is unclear. If J *iu* 'say' and *kiku* 'hear' are actually related to MK *ip* 'mouth' and *kuy* 'ear', they may have lost the initial High pitch in the process of verb formation. I conclude that the favorable instances greatly outnumber the contrary ones: **A** 24, **B** 23, **C** 11, **a** 4, **b** 2, **c** 2.

What is the origin of the Koreo-Japanese High and Low pitch accents? It has been suggested that they may be compared with the Turkic and Mongolian primary long vowels. The comparative value of the latter can only be assessed when the nature of the glottalized and aspirated vowels in the languages of the Altaic heartland will have been properly investigated. It seems probable to me that there may have been a relation between the pitch accent and the original consonant structure of the morphemes, as is usually the case with pitch accent systems. This offers us another parallel with Proto-Indo-European (cf. Kortlandt 1986 and Lubotsky 1988). The question of whether or not this parallel is a result of genetic relationship remains to be answered. A detailed comparison of the reconstructed systems is needed before we can pass judgment on the hypothesis of a single Eurasian (Indo-Uralo-Altaic) language family which stretches all the way from Iceland to the Ryukyu islands.

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