Kadai dummy *-ɯ

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1. Introduction[1]

In comparative Kadai studies, the study of rimes has always lagged behind the study of initials and tones. This is partly due to the many abnormal correspondences of vowels among Kadai languages, compared to those of initials and tones. Li's Proto-Tai, for example, has long been a great reference for initial reconstruction, though some significant revisions can be made now. His Proto-Tai vowel reconstruction, however, suffering from its unbelievably rich array of diphthongs, has gained fewer followers.

For the still bigger picture, the rimes in some other Kadai languages posed no fewer difficulties. Gelao, for instance, shows -a reflex where most Kadai languages have back rounded glide ending -au/-uu. And worse, it shows -au for otherwise one of the most regular rimes in Kadai, -aa. The following reflexes of two basic Kadai roots in various languages will illustrate the situation:

	Gelao	Hlai	Wuming	Siamese	Sui
PIG	mpa^{33}	pau^4	mau A1	muu A1	muu A1
DOG	mpau^{33}	paa^4	maa A1	maa A1	ṃaa A1

In this paper I propose to posit the hidden ending *-ɯ where most Kadai languages have open syllable with -aa to handle such abnormal vocalic correspondence.

2. Hlai lone open syllable and long vowel *-aa

In Proto-Hlai, the only open rime is *-aa. On the other hand, there is an

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[1] Tones of Tai and Kam-Sui languages are cited by their proto-tonal categories i.e. A, B, and C, followed by the numbers 1 and 2, which further indicate voiceless and voiced properties of proto-initials, respectively. Following the sources, we cite tones of Hlai varieties and Laha by their phonemic tone-numbers and those of Gelao by their phonetic tone-numbers.

Generally, when examples are given under Tai, Hlai, and Gelao, the representative languages are Siamese, Tongshi, and Anshun, respectively. Otherwise, the dialect names will be indicated.

apparent distributional gap of vowel plus proto-glide endings,[2] i.e. while there are the co-occurrence of both *-a- and *-aa- plus *-w and *-j, only *-a occurs with *-ɯ   (For details of reconstructing Proto-Hlai vowels, see Weera 1993):

	*-w	*-j	*-ɯ
*-a-	-aw	-aj	-aɯ
*-aa-	-aaw	-aaj	

Examples:

	Baoding	Tongshi	Baocheng	
*-aw	rau[1]	rau[4]	lau[4]	MORTAR
*-aj	lai[1]	lai[1]	lai[1]	FAR
*-aɯ	plaɯ[3]	plaɯ[3]	plaɯ[3]	NEAR
*-aaw	raau[1]	raau[3]	laau[4]	STAR
*-aaj	laai[3]	laai[3]	laai[3]	SEE
*-aa	łaa[1]	łaa[1]	łaa[1]	FISH

If we assume that *-ɯ was lost early after *-aa, we can fill in the *-aaɯ gap and at the same time handle the otherwise lone open syllable in Proto-Hlai.

Another related point is that, I believe, vowel length was not contrastive in Proto-Kadai. Also, in Proto-Hlai, length could be interpreted as developing later. Proto *-a-/*-aa- has been the only pair of vowels which exhibits length contrast in all dialects. The reflexes of proto *-a-, however, are phonetically [ɐ] in most varieties (cf. descriptions in Ouyang and Zheng 1983). A similar situation is also true for the Tai branch; in many Bu-yi dialects the short -a- is phonetically [ɐ] or [ʌ]. The original distinction between -a- and -aa- in Hlai thus could be that of vocalic height, say, between *-ɐ- and *-a-. By this assumption, we can also get rid of the otherwise lone long vowel of the proto-language.

In terms of mora, we can suppose that the Proto-Hlai rime structure was composed of two morae, one linked to the vowel, and another to the ending. The modern vowel -aa is shown below as a multiple link of the second mora extended to the preceding vowel, giving a two-morae, i.e. the long vowel. Thus, when the ending *-ɯ was lost, we got an open syllable with long -a.
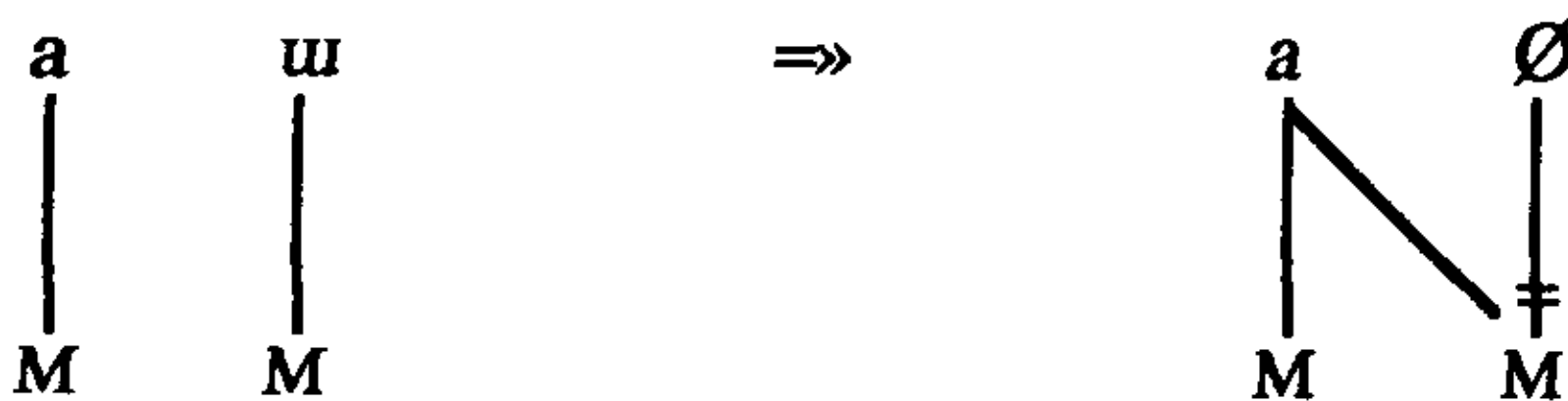
Our proposed dummy *-ɯ thus now fills in the distribution gap of rime with glide endings in Hlai. And as a result it makes Proto-Hlai a language with all closed syllables.

2. Gelao push chain

The rime -aa is one of the most direct and secure rimes, with -aa reflexes in most Kadai languages. Gelao, as we noted above, seems to disturb this picture, generally showing -au instead. Such a reflex, when combined with the fact that Gelao regularly shows -a where the other languages would have -au make the Proto-Kadai vowel system look as if it has undergone an unexplained vocalic flip-flop.

Under our proposal of dummy *-ɯ, however, we may assign the vowel development in Gelao as a push chain procedure. This *-ɯ in Gelao historical path, unlike in Hlai, was not simply lost but moved to seize the place of *-w, and as a result kicked the original *-w out of the picture. The proto-*-aw thus became -a in Gelao.
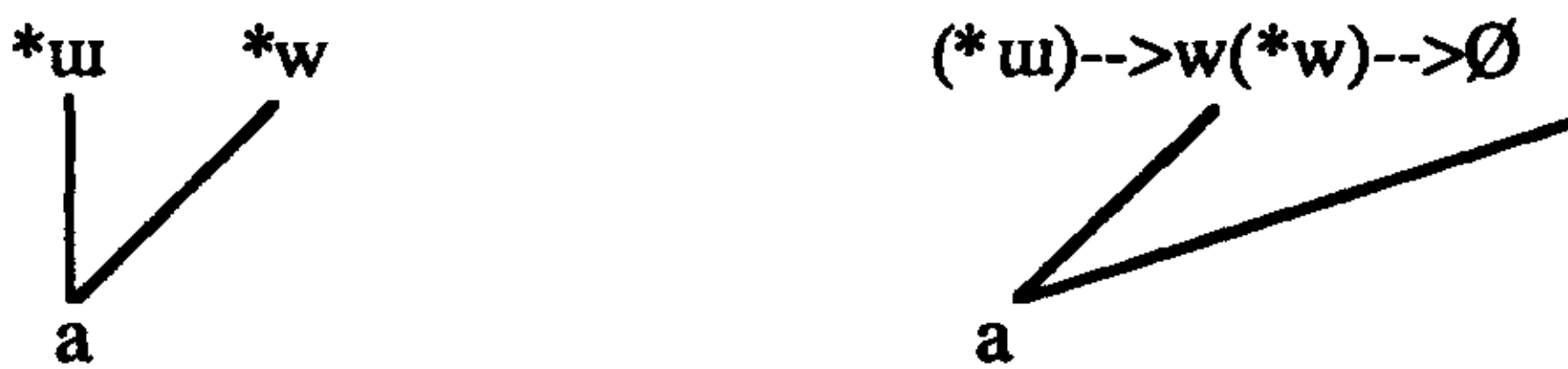
So, with the merger of *-ə- , *-ɐ-, and *-a- (except *-ə- before *-ɯ which is still -ə-), we have the following Gelao norm reflexes compared to those of Hlai and Tai:

	Gelao (Anshun)	Hlai (Tongshi)	Tai (Siamese)
**-aɯ	au	aa	aa
**-əɯ	au	aɯ	ai
**-əɯ	əɯ	əɯ	n^3
**-aw	a	aau	aau
**-əw	a	au	au
**-əw	a	ou	au
**-aj	ai	aai	aai
**-əj	ai	ai	ai
**-əj	ai	ei	ai

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[3] The examples show that Hlai *-əɯ corresponds to various Tai rimes such as -ua, -uɯ, and -aɯ: ABOVE Hlai tǝɯ⁴ Siamese nua A1, NAVEL Hlai fəɯ⁴ Siamese duɯ A1, LEAF Hlai bəɯ¹ Siamese bai (< -aɯ) .

Examples:

**-əɯ/-ɐɯ/-əɯ

	Gelao	Hlai	Tai
DOG	mpau[33]	paa[4]	maa A1
THICK	ntau[44]	naa[1]	naa A1
HORSE	n̩tɕau[13]	kaa[6]	-
SPLIT	plau[24]	-	phaa B1
FISH	lau[44]	ɬaa[1]	plaa A1
THUNDER	zau[44]	-	pjaa C1 (Pa)
CLOUD	pau[44]	faa[3]	faa A1
EYE	tau[13]	tshaa[1]	taa A1
CALF	qau[33]	haa[1]	khaa A1
NEAR	lau[13]	plaɯ[3]	klai C1
LIGHT	xau[55]	khaɯ[3]	-
DRY	xau[24]	khaɯ[2]	khaɯ (C1)
ABOVE	ntəɯ[33]	təɯ[4]	nɯa A1
THIN	t̪əɯ[31]	gəɯ[4]	-

**-aw/-ɐw/-əw

	Gelao	Hlai	Tai
DEW	ŋkla[13]	kaau[6]	-
UNCLE	ʔa[55]	-	ʔaau A1/B1
HOT	ta[55]	tshau[3] (Ht)	rau B1/C1
LOUSE	ta[44]	-	hau A
ASH	ta[24]	tau[3] (Bd)	thau B2
OLD	qa[24]	khau[2] (Ht)	kau B1
HORN	qa[33]	-	khau A1
LEG	qa[24]	-	khau B1
EIGHT	vla[44]	gou[4]	-
RUN	za[31]	gou[2]	-
SON-IN-LAW	tsa[13]	zou[4]	-

**-aj/-ɐj/-əj

	Gelao	Hlai	Tai
SELL	sai[44]	-	khaai A1
FROST	mplai[44]	-	miai A1 (Lao)
SNOW	ntai[44]	-	naiA2 (Shan)
LADDER	klai[33]	-	dai A1

Weera Ostapirat 1996, "Kadai Dummy *-Âμ", in *The Mon-Khmer Studies Journal*, vol. 26, pp. 79-88. (purl.org/sealang/weera1996kadai.pdf)

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FLOW	klai^{33}	-	lai A1
FAR	lai^{44}	lai^1	klai A1
BACK	lai^{33}	-	laai A1 (Sui)
SICK	zai^{13}	-	khai C1
CHICKEN	qai^{33}	khai^1	kai B1
FIRE	pai^{33}	fei^1	fai A2
WALK	pai^{33}	fei^1	pai A1

We do not have the Tai forms corresponding to *-əw in the above examples. But the other roots such as LOUSE and DOVE have *fou^1* and *khou^1* in Hlai and *hau A1* and *khau A1* in Tai, respectively. The reflexes of *-əɯ in Tai are still undetermined since examples are few.

Note also that in some items *-ɐ- and *-a- seems to be centralized to Gelao -ə- after *s-*, which itself can be traced back to the early initials with -r-. In such cases, the ending -ɯ was preserved, as it was from proto-*-əɯ.[4]

	Gelao	Hlai
NINE	səw^{24}	faɯ^3 (<PH *frɐɯ)
WHET	səw^{33}	raa^4 (<PH *raɯ)

The system of Gelao vowels plus glides may be drawn as follows:

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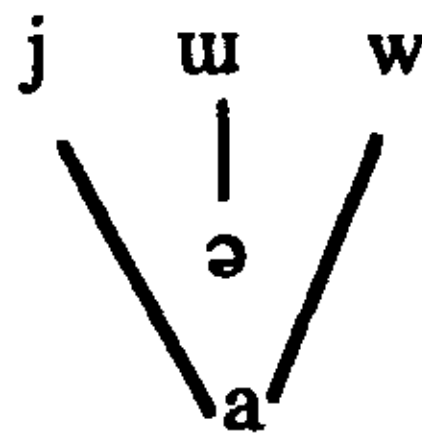
[4] Gelao -ɯ sometimes corresponds to final -ŋ in other languages. But this was clearly a recent development in the language.

	Gelao	Hlai (Heitu)	Tai (Siamese)	
DRUM	ləɯ^4	laŋ^1	klɔɔŋ A1	
BAMBOO SHOOT	ntəɯ^{13}	nɯəŋ^1	naaŋ A2 (Saek)	

Also note that in this language the ending *-k after certain vowels developed into nasal -ɲ instead.

	Gelao	Hlai (Heitu)	Tai (Siamese)	
INK	mpaɲ^{24}	-	mɯk D1S	(Pa. mak)
DEEP	laɲ^{31}	dak^7	lɯk D1S	(Pa. lak)

3. Dummy *-ɯ in outlier Kadai languages

I like to note here that -ɯ actually may be considered as a 'mid' glide. Like -w, it possesses the back position, and like -j, it is unrounded. So, it may develop into either -j , as in modern Siamese and many other Tai dialects, or -w as in Gelao here.

The movement from -ɯ to -w is certainly not peculiar only to Gelao. At least two other languages, Cun and Jiamao, which may be dialects of Hlai, also show such movement, though the details of the changes may be different.

For example, Jiamao generally has -ou for proto-*-aɯ , which seems to point to a similar change as that of Gelao *-aɯ > -au, with a further vowel assimilation to -o-. With *-ɐ- and *-ə- , however, the final -ɯ is usually lost.

Examples:

	Jiamao	Hlai	
EYE	tou[1]	tshaa[1]	*-aɯ
DOG	pou[4]	paa[4]	*-aɯ
NEAR	laa[1]	plaɯ[3]	*-ɐɯ
DRY	khaa[1]	khaɯ[5]	*-ɐɯ
HAND	maa[1]	məɯ[1]	*-əɯ
SOUL	haa[4]	gəɯ[1]	*-əɯ

For Cun, *-aɯ and *-ɐɯ merged into -ɔɔ, and *-əɯ changed to -ou. Examples:

	Cun	Hlai	
SKY	fɔɔ[3]	faa[3]	*-aɯ
SHORT	thɔɔ[3]	thaɯ[3]	*-ɐɯ
LEAF	bou[1]	bəɯ[1]	*-əɯ
SESAME	kou[4]	kəɯ[4]	*-əɯ

In Cun, however, it may be possible that the vowels moved back first, perhaps due to dissimilation from the endings. Note that *-a- and *-ə- before -w became -aau and -au respectively:

	Cun	Hlai	
STAR	laau[4]	raau[4]	*-aw
RUN	vau[5]	gwou[5]	*-əw

Thus, *-əɯ > -oɯ > ou, while *-əw > au; and *-aɯ > ɔɯ > ɔɔ (vowel lengthened after -ɯ had been lost), while *-aw > -aaw.

In other Gelao dialects, the reflexes of *- ɯ are also interesting. Consider, for example, the following:

	Hlai (Tongshi)	Gelao (Anshun)	Gelao (Judou)	Gelao (Hongfeng)	
FISH	ɬaa¹	lau⁴⁴	liəu³¹	liɯ³¹	*-aɯ
SNAKE	ɬaa²	ŋkau⁴⁴	ŋəu³¹	ŋɯ³¹	*-aɯ
HORSE	kaa⁶	ȵtɕau¹³	-	ȵɯ⁵⁵	*-aɯ
EYE	tshaa¹	tau³³	tɯ³¹	ɕəu⁵⁵	*-aɯ
DRY	khaɯ⁵	xau²⁴	kɯ³⁵	xəu¹³	*-ɐɯ

We can see that Judou -əu (with palatal onglide often following acute initials) for *-aɯ is just similar to Anshun -au. But Judou has preserved -ɯ after higher vowels and thus it shows -ɯ for *- ɐɯ, while Anshun, merging *- ɐɯ with *-aɯ, has -au instead (see *dry*).

The reflexes of Hongfeng, however, look as if they mirrored those of Judou; Hongfeng -ɯ, Judou -əu, and Hongfeng -əu, Judou -ɯ. Rather, it is simply that the dummy *- ɯ in Hongfeng has been preserved (*- aɯ > - ɯ), while the - ɯ after higher vowels has become -u. If this observation is true, Hongfeng forms would be 'visible on the surface' evidence for the dummy *- ɯ.

The word 'eye' has unexpected reflexes of higher vowels in both Judou and Hongfeng. The explanation for this is not completely clear, but we may suggest that the vowel was moved higher in these languages under the influence of early -r- (cf. Saek *praa A1* for this root). But if this suggestion and our previous proposal about possible centralization of vowels by preceding -r- in Anshun are both true, we will have to assume that the Anshun initial had lost its rhotacised quality in this root before it could affect the vowel.

We may summarize the reflexes of *-aɯ and *- ɐɯ in the above outlier Kadai languages discussed as follows:

	Hlai	Jiamao	Cun	Anshun	Judou	Hongfeng
*-aɯ	-aa	-ou	-ɔ	-au	-əu	-ɯ
*-ɐɯ	-aɯ	-aa	-ɔ	-au	-ɯ	-əu

4. Discussion

Some questions about this dummy *- ɯ seem to be worth discussing. Was it original to the proto-language, or just a later development limited to some language groups? If it was secondary, what could be its origin(s)?

First, let us address the latter point. For some items, the modern -ɯ ending in most languages corresponds to -l in a Baisha dialect of Hlai.[5]

	Hlai (Baisha)	Hlai (Baoding)	Hlai (Qiandui)
NEAR	plaːl³	plaɯ³	paɯ³
NINE	faːl³	faɯ³	faɯ³
LIGHT	kʻaːl³	khaɯ³	khaɯ³
SHORT	tʻaːl³	thaɯ³	thaɯ³
GRANDMA	tʃaːl³	tsaɯ³	tsaɯ³ (Ts)
RISE	vaːl²	ʔwaɯ²	vaɯ⁵
FROG	kaːl²	kaɯ²	kaɯ² (Ts)

It is not hard to imagine the development from -l, through velarized or dark -ł, to either -ɯ in most languages or -u in Gelao. The problems with this -l ending are that it only occurs after the vowel *-ɐ-, and that we never find -ɯ and -l in contrast after this vowel.[6] If -l ever occurred after other vowels, especially *-a- which is our current interest, it must have already become -ɯ or lost as in other languages. Baisha's reflexes of *-ɘɯ and *-aɯ are similar to those of other dialects:

	Baisha	Baoding	Qiandui	
NAVEL	fəɯ¹	vəɯ¹	fəɯ⁴	*-əɯ
FIELD	ta²	taa²	thaa²	*-aɯ

It is also likely that Baisha's -l itself has more than one origin. See for example, NIECE Baisha laːl¹, Siamese laan A1, RETURN Baisha paːlⁱ, Baoding pəɯ², but Gelao pən⁵⁵ with nasal -n ending.

Thus, Baisha -l could at best only be possible evidence for modern -ɯ in certain words after *-ɐ-. On the other hand, it should be emphasized that our knowledge of outlier Kadai languages is still at the inception stage. It is possible that some new evidence pointing to some early lost endings will turn up. There is an interesting example of -l after *-a- in Laha: WILDERNESS Laha paⁱ³, Siamese paa B1. And in a few items, the final -l after higher vowels corresponds to Tai -ɯ: NEW Laha maⁱ², Longming maɯ B1, Siamese mai B1, BUY Laha coⁱ³, Longming səɯ C2, Siamese sɯɯ C2.[7]

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[5] The dialect was reported in Wang and Qian (1951).

[6] The lengthening of the vowel before -l is interesting. Perhaps this indicates an intermediary stage before the loss of -l ending.

[7] In a number of words, however, Laha -l corresponds to Tai -n. Among these, part of them correspond to Saek forms with final -l, another part to those with final -n:

	Laha	Saek	Siamese
FLY (v.)	poʼl⁴	buːl A1	bin A1
SNORE	kal³	tlɛl A1	kron A1

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Yet, if Baisha *-l* after *-ɐ-* is original, it may suggest that *- ɯ* after this vowel did not go back to the proto stage. This will in effect weaken our argument about positing dummy *- ɯ* in Proto-Hlai on the basis of a distributional gap, since there was no *- ɐɯ* at the first place. The lack of other open vowels may also be assigned to the early diphthongization of, say, high vowels. A similar diphthongization may be assumed for certain Tai dialects such as Wuming, Tianpao and Lungming. See, for example, PIG Hlai *pau*[A], Siamese *muu* A1 but Wuming *mau* A1, Longming/Tianpao *mou* A1; HAND Hlai *məɯ*[1], Siamese *muɯu* A2, but Wuming *faɯ* A2, Lungming *məɯ* A2; GALL Hlai *dai*[1], Siamese *dii* A1, but Wuming *ʔboi* A1, Tianpao *ʔdei* A1. If diphthongization did apply, however, this must have had been before Proto-Hlai.

On the other hand, it is not absolutely certain that those high vowels were starting points. For instance, for HAND Kam-Sui languages often show -aa: Kam/Then *mjaa* A2, Sui *mjaa* A1. Examples such as SESAME, Hlai *kəɯ*, Siamese *ŋaa* A2, Sui > *ʔŋaa* A1, usually point to the original low vowel -a. This Hlai *-əɯ* others -aa might as well suggest that the dummy *- ɯ* had been there before vowel raising in some items, and was kept after then higher vowels. Or if the - ɯ later developed after vowel shift, it still seems to speak in favor of the Hlai system of vowel plus glide to that of a barely open vowel.

Now it is worth noting that in certain words where Austronesian origin seems indisputable, the forms in Austronesian themselves have open rimes. For examples, EYE Indonesian *mata*, CALF Indonesian *paha*.[8] Let us now discuss whether the dummy *- ɯ* might secondarily develop from an open rime.

The addition of extra sounds at the beginning or at the end of a syllable is evidenced in many languages, perhaps to mark a syllable boundary. In Kadai, syllables always have non-vocoid initials, i.e. the otherwise vowel initials are always preceded by a glottal stop. This is also true for many Southeast Asian

HUSKED RICE	ʃal[5]	saal A1	saan A1
SHAKE	ʃɐl[4]	sɛl B1	san B1
TOAD	jɐl[3]	ɣal A2	khan A2 (Lao)
NIECE	klal[3]	laan A1	laan A1
OIL	mˢal[1]	man A2	man A2
TONGUE	lo'l[3]	liïn C2	lin C2
SWALLOW	do'l[3]	tluɯun A1	kluɯun A1
SHALLOW	ɸo'l[3]		tuɯun C1

It is unclear whether we should assume two early separate endings based on these different reflexes of Saek. For SNORE Gedney also showed a variant form with final -n; for OIL Haudricourt reported *mal*, with final -l. It thus might be possible that certain forms which are now pronounced with final -n used to be pronounced with -l in Saek. To a certain degree, however, this distinction might be real. Space does not permit us to go into details here. We may temporarily write -r for the former set and -ɲ for the latter, keeping -l for items which Baisha or Laha -l correspond to Tai -ɯ (e.g. NEAR).

[8] But note also a glottal stop added at the end of the words in certain Formosan languages. For example, EYE Puyuma *maṭaʔ*, Yami *mátaʔ*; CALF Puyuma *paʔáʔ*, Yami ' *apáʔ*.

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languages. In Siamese, modern short vowels in open syllables are also characterized by final glottal stop -ʔ. One reason for the addition of this glottal ending may be to polarize the contrast between short and long vowels. Yet another reason is probably to keep the bi-moraic structure of the language, i.e. this -ʔ occupies the otherwise open slot (S=Stops, N=Nasals, G=Glides in figure below):

a   S   a   N   a   G   a   ʔ (<- Ø)
| | | | | | | |
| | . | | . | | . | |
M   M   M   M   M   M   M   M
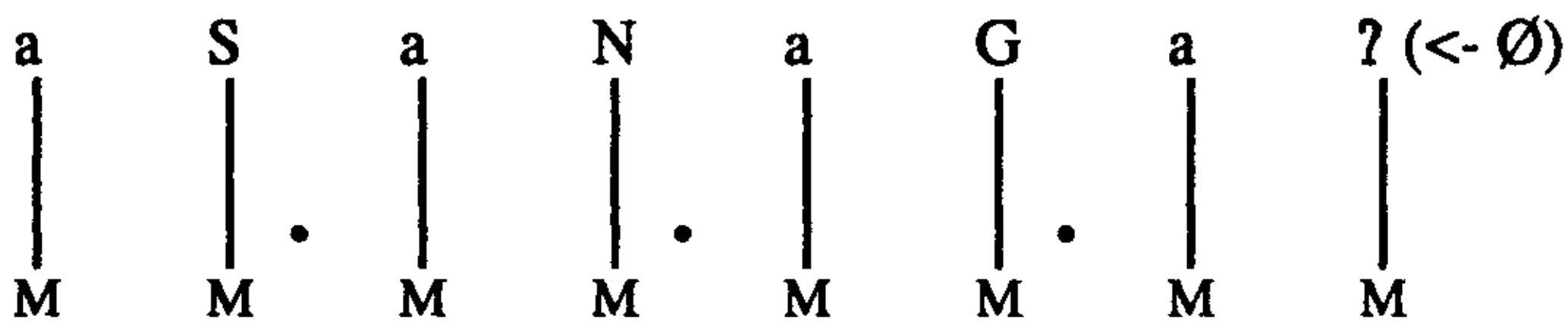
Though the addition of -ʔ after syllable-final short vowels in Siamese was a recent development, a similar process might be assumed in early times. So, if in an early open rime the unoccupied mora was instead assigned to a smooth off-glide (signified by -H below; see 2) which then became *-ɯ, we will have a parallel result with that of added -ʔ just discussed. Note also that at a fairly early time, most Kadai languages seemed to drift towards a 3 by 3 ending system as shown in note 2. This could also be another supporting environment for welcoming this dummy *-ɯ.

1.   a   2.   a   ɯ (<-H)   3.   a
      | | | | \
      | | | | \
      M   M   M   M   M   M
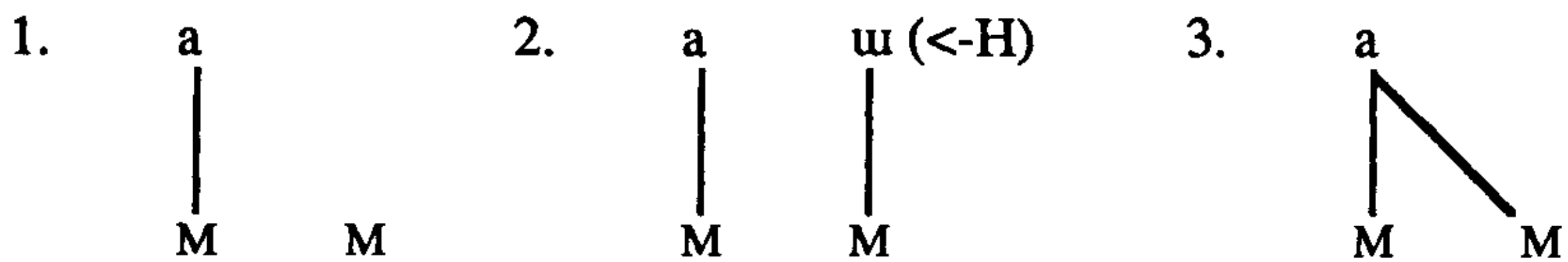
This dummy *-ɯ, however, could come and go (i.e. from 1 > 2 > 3 in above figure). It could be lost under the new force of the system in one language but kept in the other. For example, it might be lost early in Tai where a length contrast had developed in almost every vowel. In many outlier Kadai languages, it developed into -w, resulting in a rounded glide syllable ending rather than open syllable.

The question about the relative chronology of this *-ɯ, however, is more difficult. It might be hard to say, for example in Tai, if this dummy *-ɯ was ever there at all and whether the development of the long vowel -aa was not directly from 1 > 3. It is possible that this *-ɯ might be a development limited to just certain language groups.

Still, at least, it seems that this dummy *-ɯ does help explain idiosyncrasies of rime reflexes among Kadai languages and allow them to be conceivably straightforward enough to descend from the common proto-language.

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