

The Evolution of Vowel Length and Final Consonants in Dai

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Scholars generally agree that two of the characteristic features of the languages of the Dong-Dai (= Kam-Tai) stock are (a) length distinctions in vowels and (b) the existence of final consonants such as -m, -n, -ŋ, -p, -t, -k. The Dai language belongs to the Zhuang-Dai (= Tai) family of the Dong-Dai stock. Modern Dai dialects in most of the areas where Dai is spoken (e.g. Xishuangbanna (= Sipsongphanna) [西双版纳] and Dehong [德宏]) still retain these characteristics. In some areas, however, important changes have taken place: the distinction between long and short vowels has disappeared and the final consonants have dropped. This paper will study this process and try to discover its rules through a comparison of various modern Dai dialects, and by comparing the Sipsongphanna Dai Writing created in the 13th century (hereafter Dai Writing or Written Dai¹) with modern Dai dialects.

I. The Weakening of the Length Distinction in Dai Vowels

In the past there was a clear opposition between long and short vowels in Dong-Dai languages. However, in some modern languages and dialects (e.g. Dai and Lao) the number of long and short vowel-pairs has been greatly reduced, or even reduced to zero (e.g. the Dai dialects spoken in Wuding [武定], Yongren [永仁], and Luchun [绿春]). The current status of the length distinction in modern Dai can be described as follows:

1. The reflexes of the vowel length distinction vary in the different dialects.

Generally speaking, the distinction now has a much more limited scope than it apparently did in former times. For simple vowels in open syllables there is no length distinction at all, either in modern Dai dialects or in Dai Writing. Only vowels followed by other final vowels or consonants have long and short pairs. Furthermore, even in closed syllables, among the nine simple vowels *a, *i, *u, *e, *ɛ, *o, *ɔ, *ə, *ɐ in Dai Writing, only the four vowels *a, *i, *u, *o have long and short pairs. When these nine single vowels are followed by -ŋ, they can only be short, with no long counterparts. When the five vowels *e, *ɛ, *ɔ, *ə, *ɐ are followed by -p, -t, -k, they have no length distinction. In most modern Dai dialects, only a has a long-short pair, which, however does not exist in Wuding, Yongren and Luchun dialects. Please compare:

	Written Dai	Banna ²	Dehong ³	Wuding	Yongren	Luchun
	傣文	版纳 ^②	德宏 ^③	武定	永仁	绿春
cough	*ʔai ¹	ai ¹	ai ^{ʔ'1}	ei ^{1'}	ɔi ^{1'}	ai ^{2'1'}
shame	*ʔa:i ¹	a:i ¹	a:i ^{ʔ'1}	ai ^{1'}	ai ^{1'}	ɔi ^{2'1'}
pillar	*sau ¹	sau ¹	sau ¹	səu ¹	sau ¹	sau ¹
girl	*sa:u ¹	sa:u ¹	sa:u ¹	sau ¹	sau ¹	sau ¹
rise	*luk ⁸	luk ⁸	luk ⁸	luŋ ⁸	luk ⁸	—
children	*lu:k ^{8'10}	luk ⁸	luk ⁸	luk ¹⁰	luk ¹⁰	ləu ^{2'10}
tongue	*lin ⁴	lin ⁴	lin ⁴	lin ⁴	lin ⁴	liŋ ⁴
foot	*ti:n ¹	tin ¹	tin ¹	tin ^{1'}	tin ^{1'}	tiŋ ^{2'1'}
bird	*nok ⁸	nok ⁸	lok ⁸	noŋ ⁸	nok ^{7'8}	nəu ^{4'8}
beard	*hno:r ⁹	not ⁹	lot ⁹	nut ⁹	not ⁹	nuv ^{5'9}

2. Replacement of the vowel length distinction by differences in vowel quality.

In dialects of this type (e.g. Wuding, Yongren), the original **a/*a:* contrast has been replaced by a contrast in vowel quality. The vowels replacing short **a* may have either back tongue position (e.g. ɤ), or lip-rounding (e.g. ɔ). Please compare:

	Written Dai	Banna	Dehong	Wuding	Yongren
	傣文	版纳	德宏	武定	永仁
flow	*hlai ¹	lai ¹	lai ¹	lɔi ¹	loi ¹
many	*hla:i ¹	la:i ¹	la:i ¹	lai ¹	lai ¹
horn	*xau ¹	xau ¹	xau ¹	xəu ¹	xau ¹
white	*xa:u ¹	xa:u ¹	xa:u ¹	xau ¹	xau ¹
seed	*ffian ²	fan ²	fan ²	fɛn ²	fɔn ²
musk	*ffia:n ²	fa:n ²	fa:n ²	fan ²	fan ²
black	*ʔdam ¹	dam ¹	lam ¹	lɔn ^{1'}	lom ^{1'}
thorn	*hna:m ¹	na:m ¹	la:m ¹	nan ¹	nam ¹

3. The disappearance of the length distinction in vowels when they are followed by final -u, -p, -t, or -k.

The replacing of the length distinction by a vowel-quality distinction does not occur in every case. In the table above we can see that the *a*-quality of the vowel in Yongren words with final -u remains regardless of whether the original vowel was long or short.

In the Jinping Black Dai dialect, in live syllables there are both long and short forms for *a*. But in dead (=stopped) syllables the distinction no longer exists. Thus Tone 7 has merged with Tone 9, and Tone 8 with Tone 10. For instance:

	pillar	girl	sweep	cut	chop	whip	whittle	gnaw
Banna	sau ¹	sa:u ¹	pat ⁷	pa:t ⁹	fak ⁸	fat ¹⁰	lap ⁸	ka:p ¹⁰
Jinping	tau ¹	ta:u ¹	pat ⁷	pat ^{7,9}	fak ⁸	fat ^{8,10}	lap ⁸	kap ^{8,10}

In Wuding Dialect the length distinction for a has disappeared in stopped syllables. For instance:

	close	pick	louse	punch	steal	pull
Banna	hap ⁷	ha:p ⁹	mat ⁷	ma:t ⁹	lak ⁸	la:k ¹⁰
Wuding	hat ⁷	hat ^{7,9}	mat ⁷	mat ^{7,9}	lan ⁸	lak ^{8,10}

4. The complete disappearance of vowel length distinctions.

In the Luchun dialect, the length distinction has completely disappeared, but in different ways according to the particular final involved.

(a) When vowel a is followed by final -u or -ŋ, there is no length distinction in Luchun.

	pillar	girl	horn	white	scale	master
Wr. Dai	*sau ¹	*sa:u ¹	*xau ¹	*xa:u ¹	*dzaŋ ⁶	*dza:ŋ ⁶
Banna	sau ¹	sa:u ¹	xau ¹	xa:u ¹	tsaŋ ⁶	tsa:ŋ ⁶
Dehong	sau ¹	sa:u ¹	xau ¹	xa:u ¹	tsaŋ ⁶	tsa:ŋ ⁶
Luchun	sau ¹	sau ¹	xau ¹	xau ¹	tsaŋ ⁶	tsaŋ ⁶

(b) The long diphthong *a:i has merged in the Luchun dialect with the reflex of *ɔi, yielding a new diphthong [uai] (transcribed here as "ɔi") that is still distinct from ai (the reflex of short *ai):

	flow	many	(mountain)	cough	shame	(sugar)
Wr. Dai	*hlai ¹	*hla:i ¹	(*?dɔi ¹)	*?ai ¹	*?a:i ¹	(*?ɔi ³)
Banna	lai ¹	la:i ¹	(dɔi ¹)	ai ¹	a:i ¹	(ɔi ³)
Dehong	lai ¹	la:i ¹	(lɔi ⁶)	ai ⁶	a:i ⁶	(ɔi ³)
Luchun	lai ¹	lɔi ¹	(lɔi ^{1,1'})	ai ^{1,1'}	ɔi ^{1,1'}	(ɔi ³)

(c) In Luchun syllables with -m or -n, the final consonants have dropped and the short vowels *a and *u have turned into *ɛ, but the long vowels remain the same:

	seed	musk	water	thorn	night	table
Wr. Dai	*fhan ²	*fha:n ²	*nam ⁴	*hna:m ¹	*ghu:n ^{2,4}	*phu:n ¹
Banna	fan ²	fa:n ²	nam ⁴	na:m ¹	xu:n ²	phu:n ¹
Dehong	fan ²	fa:n ²	lam ⁴	la:m ¹	xu:n ²	phu:n ¹
Luchun	fɛ ²	fa ²	nɛ ⁴	na ¹	xɛ ²	phu ¹

From the above data we can summarize the process of the disappearance of the length distinction in Dai vowels as follows:

- (1) The number of vowels with a length distinction has been greatly reduced. Actually, the distinction is now only viable for the vowel a.
- (2) The former opposition of *long and *short a has been taken over by different vowels in some dialects.
- (3) Even in those dialects where there is no synchronic distinction between long and short a, the former opposition between *ai and *a:i is still reflected by their modern reflexes. (E.g. *a:i in some cases merged with *ɔi, while *ai remained distinct.) However, the opposition of *au and *a:u has disappeared in some dialects (e.g. Yongren and Luchun); in other areas, old people still distinguish between long and short a before -u, but younger people no longer do (e.g. the Dai dialect spoken by the Daba Brigade of the Muchang Commune in Maguan County). From this fact we can deduce that the length distinction with vowel a disappeared first in syllables with -u, and only later in syllables with -i.
- (4) The vowel length distinction disappeared first in stopped ("dead") syllables.

II. The Dropping of Final Consonants

1. Syllables with nasal final consonants.

In most modern Dai dialects, the three nasal final consonants still remain. However, they have been changing in the following ways in Wuding and Luchun dialects:

a. In Wuding dialect -m has merged with -n:⁵

	three	gold	needle	fragrance	ask	bitter
Wr. Dai	*sa:m ¹	*gɰam ²	*xim ¹	*hɰm ¹	*tha:m ¹	*xum ¹
Banna	sa:m ¹	xam ²	xim ¹	hɰm ¹	tha:m ¹	xum ¹
Dehong	sa:m ¹	xam ²	xem ¹	hɰm ¹	tha:m ¹	xom ¹
Wuding	san ¹	xen ²	sin ¹	huan ¹	than ¹	khun ¹

b. In Luchun dialect, there remains only -ŋ, while -m and -n have both dropped. The process has been influenced by the length of the preceding vowel:

(1) The -m and -n have dropped after the long vowels *a, *ɔ, *o, *ə, *u, and after the short vowels *o and *i (or *e). During the process the vowel *ɔ has changed into u; the vowel *o, long and short, has changed into u; while the other vowels have remained the same. Please compare:

	Written					Written			
	Dai	Thai ⁶	Banna	Luchun		Dai	Thai	Banna	Luchun
sweet	*hva:n ¹	va:n ¹	va:n ¹	va ¹	three	*sa:m ¹	sa:m ¹	sa:m ¹	sa ¹
sleep	*nɔn ²	nɔ:n ²	nɔn ²	nuə ¹	fragrance	*hɔm ¹	hɔ:m ¹	hɔm ¹	huə ¹
home	*rən ²	ru:ən ²	hən ²	hə ²	python	*hləm ¹	lu:əm ¹	ləm ¹	lə ¹
garden	*so:n ¹	suan ¹	son ¹	su ¹	immerse	*tho:m ⁵	thuam ⁵	thom ⁵	thu ⁵
man	*gon ²	khon ²	kun ²	ku ²	sour	*som ³	som ³	sum ³	su ³
eat	*kin ¹	kin ^{2,1'}	kin ¹	tsiq ^{2,1'}	overflow	*tim ¹	tem ^{2,1'}	tim ¹	ti ^{2,1'}
stink	*hmin ¹	men ¹	min ¹	mi ¹	ginger	*xiŋ ¹	khix ¹	xix ¹	seg ¹
table	*phu:n ¹	phw:n ¹	phu:n ¹	phu ¹					

(2) The -m and -n after short *i and *u have merged with -ŋ. During the process vowel *i has not changed while *u has changed into uɛ.

	Written					Written			
	Dai	Thai	Banna	Luchun		Dai	Thai	Banna	Luchun
tongue	*lin ⁴	lin ⁴	lin ⁴	liŋ ⁴	brim	*rim ²	rim ²	him ²	hiŋ ²
warm	*ʔun ⁵	un ⁵	un ⁵	ueŋ ⁵	hug	*ʔum ³	um ³	um ³	ueŋ ³

(3) The -m and -n after the short vowels *a and *u have dropped, with the vowels changed into ɛ.

Written					Written				
	Dai	Thai	Banna	Luchun		Dai	Thai	Banna	Luchun
sun	*van ²	van ²	van ²	ve ²	water	*nam ⁴	nam ⁴	nam ⁴	ne ⁴
see	*han ¹	han ¹	han ¹	he ¹	husk	*tam ¹	tam ^{2,1'}	tam ¹	te ^{2,1'}
uphill	*xwn ³	khwn ³	xwn ³	xe ³	firewood	*ffuwn ²	fwn ²	fwn ²	fe ²

From the above we can see that (1) $*-m$ dropped first of all the consonants, followed by $*-n$, while $*-ŋ$ is generally retained; (2) the final consonants $-m$ and $-n$ are more likely to drop after long vowels, with the vowel quality remaining unchanged; (3) $-m$ and $-n$ after the short high vowels $-i$ and $-u$ mainly merged with $-ŋ$.

2. Final Stops.

In Proto-Dai there were four final stops, $*-p$, $*-t$, $*-k$, and $*-ʔ$. The nine simple (long) vowels mentioned above and the short vowels $*a$, $*i$, $*u$, and $*o$ could be followed by $*-p$, $*-t$, and $*-k$, whereas only the nine short vowels could be followed by $*-ʔ$.

In some dialects the final stops have dropped:

(1) The dropping of the final stop $*-k$.

In the Jinping White Dai dialect, $*-k$ after short vowels has been retained. As for $*-k$ after long vowels, old people pronounce it as $-ʔ$ while younger people drop it altogether. In Jinping Black Dai dialect, $*-k$ after short vowels is retained but dropped after long vowels:

	Written Dai	Thai	Banna	Jinping (White Dai)	Jinping (Black Dai)
bird	*nok ⁸	nok ⁸	nok ⁸	nok ⁸	nok ⁸
vegetable	*phak ⁷	phak ⁷	phak ⁷	phak ⁷	phak ⁷
iron	*hle ⁷	lek ⁷	lek ⁷	lek ⁷	lek ⁷
fruit	*hma:k ⁹	ma:k ⁹	ma:k ⁹	ma:ʔ ⁹	ma ^{5'9}
root	*ra:k ^{8,10}	ra:k ¹⁰	ha:k ^{8,10}	ha:ʔ ^{8,10}	ha ^{8,10}
wing	*pi:k ⁹	pi:k ⁹	pik ⁹	pi ⁹	pi ^{5'9}
children	*lu:k ^{8,10}	lu:k ¹⁰	luk ^{8,10}	lu ^{8,10}	lu ^{8,10}

(2) In Wuding dialect, the final stop $*-p$ has merged with $*-t$:

	mouth	ten	pick	frog
Wr. Dai	*sop ⁷	*sip ⁷	*kep ⁷	*kop ⁷
Banna	sop ⁷	sip ⁷	kep ⁷	kop ⁷
Wuding	sut ⁷	sit ⁷	kit ⁷	kut ⁷

(3) Some final stops have changed into final nasals:

a. In Wuding dialect, those words which originally had Tone 8 (that is, short vowels with Yang Ru tone), the final stops have changed into $-ŋ$. Please compare:

	Written Dai	Banna	Wuding		Written Dai	Banna	Wuding
love	*rak ⁸	hak ⁸	haŋ ^{4'8}	whet	*lap ⁸	lap ⁸	laŋ ^{4'8}
crave	*rik ⁸	hik ⁸	hiŋ ^{4'8}	nail	*lep ⁸	lep ⁸	liŋ ^{4'8}
rise	*luk ⁸	luk ⁸	luŋ ^{4'8}	boil	*ffiot ⁸	fot ⁸	feŋ ^{4'8}
bird	*nok ⁸	nok ⁸	noŋ ^{4'8}	ant	*mot ⁸	mot ⁸	meŋ ^{4'8}
wash	*zak ⁸	sak ⁸	saŋ ^{4'8}	grain	*met ⁸	met ⁸	miŋ ^{4'8}

b. In Luchun dialect, the final stops after long or short vowels are now pronounced by some people as $-ŋ$, while others pronounce it as the high vowel $-y$:

	mouth	vegetable	seven	connect
Wr. Dai	*sop ⁷	*phak ⁷	*tset ⁷	*sup ⁹
Banna	sop ⁷	phak ⁷	tset ⁷	sup ⁹
Wuding	suɛŋ ^{3,7}	phaŋ ^{3,7}	tsiŋ ^{3,7}	suɛŋ ^{5,9}

However, those who pronounce the stops as the high vowel -ɿ sometimes pronounce them as -ɿ too:

	duck	lacquer (tree)	(fish) scale
Banna	pet ⁷	(mai ⁴) hak ⁸ (fa ⁴)	ket ⁷
Luchun	piŋ ^{3,7}	(mai ⁴) haŋ ^{4,8} (fo ⁴)	kiŋ ^{3,7}

From this we can conclude that the pronunciation of final stops as -ɿ by these people is relatively conservative, while the pronunciation of -ɿ is a more recent development.

(4) Final stops changing into final high vowels (-i, -ɿ, -u):
In the Luchun dialect the final stops, while dropping, have changed into the high vowels -i, -ɿ, and -u. The rules are:

*ax, *a:x → aɿ;
 *ik, *i:k, *ek → ei;
 *ok, *o:k, *uk, *u:k, *ɔk → əu
 *ək → əɿ
 *ot, *o:t, *op, *ut, *u:t, *up, *u:p → uɿ
 *it, *ip, *et, *ep → iɿ

Please compare:

	Written Dai	Banna	Luchun		Written Dai	Banna	Luchun
heavy	*hna:k ⁷	nak ⁷	naɿ ^{3,7}	root	*ra:k ^{8,10}	ha:k ^{8,10}	haɿ ^{2,10}
wing	*pi:k ⁹	pik ⁹	pei ^{3,9}	iron	*hle:k ⁷	lek ⁷	lei ^{3,7}
six	*hok ⁷	hok ⁷	həu ^{3,7}	foam	*pok ⁹	pok ⁹	pəu ^{5,9}
ripe	*suk ⁷	suk ⁷	səu ^{3,7}	bone	*du:k ⁹	duk ⁹	ləu ^{5,9}
outside	*nək ^{8,10}	nək ^{8,10}	nəu ^{2,10}	go out	*ɔk ⁹	ɔk ⁹	əu ^{5,9}
cord	*dzək ^{8,10}	tsək ^{8,10}	tsəɿ ^{2,10}	deep	*lək ⁸	lək ⁸	ləɿ ^{4,8}
pour over	*hot ⁷	hot ⁷	huɿ ^{3,7}	beard	*hno:t ²	not ⁹	nuɿ ^{5,9}
frog	*kop ⁷	kop ⁷	kuɿ ^{3,7}	suck	*du:t ⁹	duɿ ^{5,9}	luɿ ^{5,9}
dig	*xut ⁷	xut ⁷	khui ^{3,7}	sip	*tsu:p ⁹	tsu:p ⁹	tsuɿ ^{5,9}
bamboo hat	*kup ⁷	kup ⁷	kuɿ ^{3,7}	pick	*kep ⁷	kep ⁷	kiɿ ^{3,7}
raw	*dip ⁷	dip ⁷	liɿ ^{3,7}	fungus	*het ⁷	het ⁷	hiɿ ^{3,7}
crave	*rit ⁸	hit ⁸	hiɿ ^{4,8}				

(5) The dropping of final stops:

In Luchun, *-p and *-t after long or short *a or *ə have dropped while the vowels remain unchanged; *-p and *-t after *ɔ have dropped while the vowel has changed into uə; *-p, *-t, and *-k after *ɿ have dropped while the vowel has changed into iɿ. Please compare:

	Written				Written		
	Dai	Banna	Luchun		Dai	Banna	Luchun
louse	*hmat ⁷	mat ⁷	ma ^{3'7}	sour	*fa:t ⁹	fa:t ⁹	fa ^{3'9}
close (eyes)	*hlap ⁷	lap ⁷	la ^{3'7}	gnaw	*ga:p ^{8'10}	ka:p ^{8'10}	ka ^{2'10}
lungs	*pot ⁹	pot ⁹	pua ^{3'9}	lift (with	*kop ⁹	kop ⁹	kua ^{3'9}
eight	*pet ⁹	pet ⁹	pie ^{3'9}	hands)	*?det ⁹	det ⁹	lie ^{3'9}
dazzle (eyes)	*sep ⁹	sep ⁹	sie ^{3'9}	sunshine			
				crack	*tek ⁹	tek ⁹	tie ^{3'9}

To sum up, the dropping of the final consonants may have led to one of the following four developments:

- (1) Replacement with other final stops. For instance in Jinping White Dai, -ʔ is being used as a transitional stage. In Wuding dialect -t has replaced -p, reducing the number of final stops from three to two.
- (2) Replacement with the final nasal -ŋ. For instance in Wuding dialect words originally pronounced with Tone 8 now have -ŋ as their final consonant. In Luchun dialect some people pronounce the final stops as -ʃ but in a small number of words they keep -ŋ. Thus we know that the yang final is a transitional stage between the ru final and the yin final.
- (3) Replacement with high back vowels. For instance in Luchun -k after the front vowels has changed into -i, and -k after back vowels has changed into -u, while -k in the other cases has changed into -ʃ.
- (4) After the dropping of the final consonants, most of the vowels have changed into diphthongs.

NOTES

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1. The Sipsongphanna Writing basically represents the pronunciation of that time faithfully. Words transcribed from Dai Writing are marked with an asterisk.
2. The representative testing places for the phonetic materials used in this paper are: for Banna dialect, Jinghong County of Xishuangbanna Dai Minority Autonomous Region; for Dehong dialect, Mangshi of Jingpo Minority Autonomous Region; for Jinping White Dai dialect, Xinmeng Brigade of Mengla Commune of Jinping County; for Jinping Black Dai dialect, Laomanhao Village of Changpotou Brigade of Dazhai Commune; for Wuding dialect, Suosuka Brigade of Wande Commune of Wuding County; for Luchun dialect, Qimaba Commune of Luchun County; for Yongren dialect, Huiba Brigade of Yongxin Commune of Yongren County.
3. The number before the apostrophe in the Dehong and Luchun forms indicates the modern tone, while that after the apostrophe shows the ancient tone.
4. The Zhuang form is hwn².
5. Old people still keep -m and -n, and in old villages nearby people keep the final consonants too.
6. Some Dai languages no longer have a length distinction for some vowels, but since standard Thai does, we frequently give Thai examples for comparison.