

## /æ/ and /ɑ/ in Stau: phonology, diachronic sound change in Tibetan loan words, and dialect variation

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1. Overview of Stau Phonology
2. Contrast, distribution patterns, and phonotactics of /æ/ and /ɑ/
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4. /ɑ/'s historically borrowed from Tibetic into Stau

### 1. Overview of Stau Phonology

This paper primarily focuses on the Mazi dialect of Stau. When the dialect name is not given, Mazi is the dialect being discussed.

At this point of analysis it can be argued that Stau has 44 simple onset consonants that can be considered as having full phonemic status, as seen in Table (1). The voiceless labio-dental fricative [f] has only marginal phonemic status and is placed in brackets in the inventory table since it is only found in Chinese loan words, most fairly recent.<sup>1</sup>

#### 1.1 Differences with Vanderveen (2015)

Vanderveen (2015) claims 42 simple onset consonant phonemes, but includes an additional 3 consonants (/ʃ/, /G/, and /N/) in her inventory that she does not consider full phonemes. Two of these (/ʃ/ and /G/) I have bumped up to full phoneme status raising the number of consonant phonemes to 44, and the third (/N/) I will argue as not necessary to include in the phoneme inventory since it can be analyzed as an allophone of /ŋ/.

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<sup>1</sup> [f] is also an allophone of /v/ in native Stau words, as in the inverse marker.

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Table 1.

labial	alveolar	retroflex	palatal	velar	uvular
p	t		c	k	q
p <sup>h</sup>	t <sup>h</sup>		c <sup>h</sup>	k <sup>h</sup>	q <sup>h</sup>
b	d		ɟ	g	ŋ
	ts	tʂ	tɕ		
	ts <sup>h</sup>	tʂ <sup>h</sup>	tɕ <sup>h</sup>		
	dz	dʐ	dʒ		
(f)	s	ʂ	ɕ	x	χ
v	z	r	ʒ	ɣ	ʁ
m	n		ɲ	ŋ	
	ɱ				
	ɱ̥				
w	ɹ		j		

### 1.1.2 N not considered a phoneme, /G/ as a full phoneme

Vanderveen does not call N a full phoneme, but considers it as a possibility and includes it in her consonant inventory as a marginal phoneme placed in brackets. The following is an argument to leave it out of the consonant inventory altogether. The argument is connected to the phonemic status of /G/, since the only cases of [N] occur with [G].

My argument is that [N] is an allophone of /ŋ/ that assimilates to the uvular place of articulation, as all the examples show:

- (1) bænGE 'spider, fly' (Dge bshes: rbENGE)
- (2) NGwi 'hoe' (Dge bshes: NGvi)
- (3) NGvE 'five'
- (4) ʁANGvE 'fifteen'
- (5) jænqjo 'palate' (when /ŋqjo/ is isolated, N is voiceless [ŋ̥qjo])
- (6) rbe nqe 'nit' (when /ŋqe/ is isolated, N is voiceless [ŋ̥qe])

Vanderveen (2015) mentions the questionable status of /g/ as a phoneme. I will also remain skeptical, however the examples given above are a good starting point as evidence for the phonemic status of /g/, especially when taken into account with what happens with voiceless prenasalized consonants. Voiceless nasals in words like  $\eta q\text{æ}$  ‘pick up’ [ $\eta q\text{æ}$ ] ,  $\eta q^h\text{ur}\text{æ}$  [ $\eta q^h\text{ur}\text{æ}$ ] ‘scoop’ are argued not to be phonemes. Because there is strong evidence to claim that a nasal’s voicing status is dependent on the voicing of the following consonant (in the cases of mb, nd, and  $\eta g$ ), it is not good reasoning to also argue that voicing is spreading from the nasal to the following consonant in the one case of uvulars. This leaves the possibility open for a three way contrast in uvulars, namely, voiceless unaspirated /q/, voiceless aspirated /q<sup>h</sup>/, and voiced /g/. It then becomes unnecessary to consider  $\eta$  as a phoneme, since all of the examples point to place assimilation.

### 1.1.3 /s/ as a full phoneme

(7)  $\eta a$  ‘lively’

(8)  $\eta r\eta r$  ‘forceful’

(9)  $\eta r\ t\text{s}\text{a}\ q^h\text{a}$  ‘hand gun’ (Chinese + clf.)

### 1.2 Vowels

Stau has eight simple vowels that are full phonemes (i, e,  $\epsilon$ ,  $\text{æ}$ ,  $\text{ə}$ , u, o,  $\text{a}$ ). The four front vowels (i, e,  $\epsilon$ , a) can be argued from minimal pairs as in examples (10-15).

(10) a.  $p^hji$  ‘flee’

b.  $p^he$  ‘vomit’

c.  $p^h\epsilon$  ‘dig out’

d.  $p^h\text{æ}$  ‘with’

(11) a.  $t\text{çi}$  ‘hat’

b.  $t\text{çe}$  ‘become’

c.  $t\text{ç}\epsilon$  ‘road’

d.  $d\text{z}\text{æ}$  ‘tea’

- (12) a. ʎi ‘come 3 perf’  
b. ʎe ‘bring 2’  
c. ʎe ‘give birth 2’  
d. ʎɛ ‘come 3 ipfv’  
e. ʎæ ‘hand’
- (13) a. li /clf/ ki li ki li 有时候  
b. le /intj/  
c. le ‘lie/joke’  
d. læ ‘discourse marker’ 呢
- (14) a. t<sup>h</sup>i ‘dem’  
b. t<sup>h</sup>e ‘get 该你取’  
c. t<sup>h</sup>ɛ ‘3’  
d. t<sup>h</sup>æk<sup>h</sup>æ ‘besides’
- (15) a. vi ‘go’  
b. veve ‘grandma’  
c. vɛ /subj/  
d. væ ‘pig’

Stau also has two nasalized vowels  $\tilde{o}$  and  $\tilde{a}$ , or this can be argued (as in Vanderveen 2015) as vowel + velar nasal consonant final /ŋ/. Vanderveen’s analysis becomes problematic if proposing underlying vowel fusion rules to explain ablaut in verb agreement (e.g. proposed in Jacques, et al 2014). Velarized vowels are possible in some dialects (e.g., Khangsar see Jacques et al 2014), usually as the vowels /a<sup>y</sup>/ and /o<sup>y</sup>/. It is possible that /a/ and /a<sup>y</sup>/ essentially mean the same thing. As my paper does not concern /ə, u, o/ I will not give undue attention to these vowels. Rather the reader is commended to look at Vanderveen 2015 for future explanation.

Native Stau codas are v, r, and n (and ŋ if not analyzed as a nasalized vowels). /-r/ may be analyzed as rhoticization on the vowels. In words borrowed from Tibetan m, t, l, and k.<sup>2</sup>

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<sup>2</sup> Vanderveen also includes x, ɣ, and ɣ. I’m considering that [ɣ] belongs to velarized vowels and [x] and [ɣ] are allophones of /-k/. /t/ and /k/ are realized as unreleased stops.

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## 2. Contrast, assimilation processes, distribution patterns, and phonotactics of /æ/ and /ɑ/

### 2.1 Examples of contrast

There are a handful of minimal pairs with /æ/ and /ɑ/. Examples (16-18) below are only native words, examples (19-20) involve Tibetan words (indicated with a 'T'). At what point does one rule out loan words? It seems that this is a language specific question that is determined by how much the loan word has been integrated into the mental lexicon of the speakers.

- (16) a. zʁæ 'open mouth (v)'  
b. zʁɑ 'ten'
- (17) a. q<sup>h</sup>æ 'laugh'  
b. q<sup>h</sup>ɑ '/clf/ for long things'
- (18) a. c<sup>h</sup>æ 'can'  
b. c<sup>h</sup>ɑ 'comfortable'
- (19) a. p<sup>h</sup>ɑ 'pig' (T)  
b. p<sup>h</sup>æ 'with'
- (20) a. ʁæ 'spiritual being' (T)  
b. ʁɑ 'lose'

### 2.2 Place assimilation with uvulars

Place assimilation from the voiced uvular fricative /ʁ/.

- (21) /ʁ/ as initial
- a. ʁɑ 'problem'
- b. ʁasi 'opposite'
- c. ʁalo 'chest'
- d. xçuʁɑ 'collect'

There is one time that /æ/ occurs after /ʁ/: when a voiced alveolar fricative /z/ is a preinitial in zʁæ 'open mouth'. Thus, there is a minimal pair between zʁæ 'open mouth' and zʁɑ 'ten', as seen above in Section 2.1, example (16).

The following examples (22) and (23) demonstrate how as an initial /ɤ/ can condition the final vowel in lexicalized compounds:

(22) *ndzæɤdzə* ‘hide’ (lexicalized reduplication)

(23) *мæкə* ‘no problem’ (*мæ* ‘neg.have’ + *кə* ‘problem’)

Thus, *\*ndzæɤdzə* or *\*мæкə* are not possible. Some dialects (e.g., Khangsar) will use a different form of negation *me-* (neg.future), e.g., *мекə* ‘no problem’. This spreading can occur over “normal” syllable boundaries in words where the lexicalization process is obscure, such as in the following:

(24) *qəɤə* ‘mountainside’

(25) *ɕəɤrə* ‘sickle’

It should not seem unusual to propose that there is conditioning from [æ] to [a] when in the environment of uvulars. Thus examples such as *q<sup>h</sup>a* ‘/clf/ for long things’ and Dge bshes *nqa* ‘sky’ would be expected. However, the exception is found when the vowel is not backed or velarized, such as *q<sup>h</sup>æ* ‘laugh’ or Mazi *nqæ* ‘pick up’.

The following is to explain /a/ in *sqa* ‘ten’, the base ten morpheme for numbers 20 through 90, as in the following examples:

(26) *nə-sqa* ‘twenty’

(27) *nə-sqa-ro* ‘twenty-one’

(28) *su-sqa* ‘thirty’

It is clear that *sqa* is a allomorph of *zka* ‘ten’ undergoing some phonological changes:

1. devoicing: /z/ and /ɤ/ becoming /s/ and /q/, respectively
2. “plosivization”: fricative becoming a stop (ɤ → q)

### 2.3 Agreement marking vowel alternations

æ→a (resulting in *ã* or *aŋ*) with *-ã* first person suffix vowel fusion process.

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Table 2. Stau transitive and intransitive paradigms

P		1	2	3
A	1SG		Σ-w	
	1PL		Σ-ã	
	2SG			Σ-j
	2PL			Σ-n
	3	v-Σ		
	INTR	Σ-ã	Σ-n	Σ

Table 3. Vowel fusion rules

Suffix Stem	-w	-ã	-j
i	u	ã	i
e	o	ã	e
æ	o	ã	e
ə	u	õ	i
o	o	õ	e
ε	o	ã	e
u	u	õ	i
ər	ur	õ	ər
εr	εr	ã	εr
εv	ov	ãv	εv

Table 4. Mazi *fse* 'kill'

P		1SG	1PL	2	3
A	1SG			tə-so	
	1PL			tə-sã	
	2SG			tə-se	
	2PL			tə-sε-n	
	3	tə-fse			

## 2.4 Distribution patterns and phonotactics

### 2.4.1 Simple initials

/ɑ/ and /æ/'s distribution are quite similar. /æ/ occurs after 40 of 44 simple initial consonants (not occurring after simple ʂ, x, ʁ, and ɠ). /ɑ/ occurs after 39 of 44 simple initial consonants (not occurring after simple ʂ, x, ʁ, and ɠ).

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Similarities: both /æ/ and /ɑ/ do not occur after x, ɣ.

Differences: /ɑ/ occurs after simple ʋ and ʂ, /æ/ does not. /æ/ occurs after simple ʝ, ʧ, and ʒ, /ɑ/ does not.

The words *ca~c<sup>h</sup>a* ‘good’ and *rk<sup>h</sup>u sna sna* ‘cool’ are the only words in which [ɑ] occurs with palatals in native Stau words. However, [æ] occurs frequently with palatals.

#### 2.4.2 With consonant clusters

/ɑ/ occurs after the following consonant clusters, /æ/ does not: p<sup>h</sup>j, rp, rb, ɣp, rt<sup>h</sup>w, fts, ɣts, mts<sup>h</sup>, tɕw, rc, nj, ɣɕ, ʋɕ, rtɕ, ʋj, kw, kr, gr, qw, q<sup>h</sup>w, rqw, nq<sup>h</sup>w, zʋ, rʋ, hw, rn.

/æ/ occurs with the following consonant clusters, /ɑ/ does not: sp, spj, mp<sup>h</sup>, sp<sup>h</sup>j, bj, mbj, zbj, zbr, rv, tj, t<sup>h</sup>j, st<sup>h</sup>j, mt<sup>h</sup>, nt<sup>h</sup>, rt<sup>h</sup>, s-t<sup>h</sup>v, nt<sup>h</sup>v, ndv, md, rd, zd, ʧd, ʋd, rs, xs, ɣs, ʧz, ʋz, zj, rj, rts<sup>h</sup>, nts<sup>h</sup>, rdz, mdz, rw, ntɕ<sup>h</sup>, ndz, fɕ<sup>h</sup>, xɕ, ɕw, ʝw, ʧz, ʋj, ʋj, xtɕ, ftɕ, xtɕ, rtɕ<sup>h</sup>, tɕ<sup>h</sup>j, ʧl, ʋl, fl, vɕ, zɕ, ʧɕ, sm, rm, ʧm, mj, zn, ʧn, ʧn, ʋn, sn, sk, sk<sup>h</sup>, nk, rk, k<sup>h</sup>r, mk<sup>h</sup>, nk<sup>h</sup>, nk<sup>h</sup>r, ngr, zgr, ʧr, sqr, q<sup>h</sup>r, rq<sup>h</sup>, nq, zʋ, sxj, ɣj, ʋɣw, ʧw, ɣw.

In addition to the above, /ɑ/ and /æ/ both occur with these consonant clusters: pj, bj, br, rb, mb, vr, rt, st, vd, nd, fs, vl, rts, ndz, sc, nc<sup>h</sup>, rj, fɕ, ʋz, ndz, fk, zg, rg, ng, sq, ʋj, ʋm, sn, ʋn, ʝn, rɣ.

#### 2.4.3 Rhymes

Both ɑ and æ do not cooccur with -t. -t is a rare final and only occurs in Tibetan loan words.

[ɑ] occurs with the final /v/, [æ] does not

(29) -v

- a. ɕant<sup>h</sup>av ཤམ་ཐབས་ ‘lhama’s clothing’
- b. ɣav ‘fall into’
- c. ʋav- ‘teen suffix’ (e.g. ʋav-ro ‘eleven’)
- d. t<sup>h</sup>aptɕa ~ t<sup>h</sup>aftɕa ཐེངས་ཆག་ ‘bad quality’ ([p], [f] allophones of /-v/ final)

There is the nasalized form  $\tilde{a}v$  for first person plural agreement as in *bev* → *bāv* ‘get off’

In Native words, [æ] occurs in the rhyme ær, [ɑ] does not.

(30) -ær

- a. zdær ‘completive’, ‘drip’
- b. tær ‘age’
- c. vʒær ‘summer’

But you can find /-ɑr/ in Tibetan loan words:

The final -m only occurs in Tibetan loan words.

(31) -m

- a. χæmbæ ཉམ་པ་ ‘brave/scold’
- b. sqæmbæ སྐམ་པ་ ‘fire-tongs’ or ‘wrench’

The only example I have of /ɑ/ occurring with /-m/ final is *ram ne* རབ་གནས་ ‘incantation’

/æ/ and /ɑ/ can occur with before the final /-n/ (mostly Tibetan loan words, /ɑ/ entirely so). See examples (32) and (33), below.

(32) -n with /æ/

- a. smænpæ ‘doctor’ སྐུན་པ་
- b. ʋdæn mbæ ‘leader’ གདན་པ་
- c. pænmæ ‘between’

(33) -n with /ɑ/

- a. ʋnɑngɑ ‘matter/problem’ གནད་འགག་
- b. ɕant<sup>h</sup>av ‘lhama’s clothing’ གམ་ཐབས་

Also the final -n suffix is used in perfective constructions for second person agreement marker for intransitive verbs and transitive 2p > 3 (and I have not fully analyzed the imperfective), so theoretically -n could occur after /ɑ/, but I have no examples of this.

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ã

In the process of nasalization that comes with first person agreement marking on verbs in perfective constructions for first person intransitive and transitive 1 > 2/3, æ moves back and becomes ã and not æ̃.

χ

The voiceless uvular fricative final /χ/ also only occurs in Tibetan loan words. Most examples cooccur with a, as in the following examples:

(34)

a. vdaχpə བདག་པོ་ ‘boss’

b. laχtɕ<sup>h</sup>a ལག་ཚ་ ‘tool’

There is however one example of the voiceless uvular fricative final occurring with æ, as follows:

(35) stonbæ ɕæχcæ t<sup>h</sup>upæ ལྷོན་པ་ལུ་ལྷ་ལུ་པ་

Confirming Vanderveen (2015), /æ/ and /ɑ/ do not cooccur with the following finals, which are found only in Tibetan loan words: voiceless velar stop [k], voiced velar fricative [ɣ], voiced alveolar lateral /l/.

x

Only one occurrence of a with /-x/ but not sure about the syllable break:

(36) q<sup>h</sup>wax.pə.tɕɛn ‘name of a fictional man’ (T)

/æ/ does not cooccur with [-x] in my data.

As there are no examples of contrast, I propose that final [x], [k], [ɣ], and [χ] are all allophonic. These only occur in Tibetan loan words that are generally used by those who are more fluent in Tibetan. They are easily identified by these speakers as “Tibetan” words.

## 2.5 Free variation of /æ/ and /ɑ/

### æ/ɑ- 'one prefix'

One example of a minimal pair that requires more digging is *æmə* 'mother' and *æmə* 'maybe'. Sarah says that there is a bit of a difference but it is possible to say *æmə* or *ɑmə* for 'maybe' (free variation) and that people in Jiasikong say *ɑmə* instead of *æmə* for 'mother' (dialectal variation). In rapid speech *æ* often becomes *ɑ* so that *æ* in *æmə* 'maybe' sounds often like *ɑ*.

### ma- NEG prefix

(37)

ɑmə ~ æmə	stepmother	
ɑvɑq <sup>h</sup> i ~ ævæq <sup>h</sup> i	bad	
ɑpə ts <sup>h</sup> o ts <sup>h</sup> o ~ æpə ts <sup>h</sup> o ts <sup>h</sup> o	someone's guess	
rjɑmɑ ~ rjæmæ	steelyard, scales	𑖓𑖔
χɑ vdu ~ χæ vdu	now	N

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3. Acoustic analysis

Table 5.

æ & a formant values and averages

æ	Dge bshes			Rdzong						Mazi							
	F1	F2	a	F1	F2	æ	F1	F2	a	F1	F2	æ	F1	F2	a	F1	F2
tc'jæ 'on'	764	1886	rtə 'mark, sign'	799.1	1334	tc'æ/ɬjæ 'on'	695.5	1714	rtə 'mark, sign'	780.9	1475	æ-ndzə 'once'	833.6	1766	rtə 'mark, sign'	799.1	1386
gæ 'like'	764.5	1679	avaqi 'bad'	781.8	1317	gæ 'like'	799.1	1645	avaqi 'bad'	832.3	1398	æ-ŋe-rə 'is it ok?'	937.1	1697	ara 'alcohol'	954	1472
rtærgæ	730.3	1703	avaqi 'bad'	850.8	1403	æmə 'mother'	816.3	1420	avaqi 'bad'	789.2	1379	bəbæle 'butterfly'	902.6	1731	ara 'alcohol'	861.1	1489
rjæ 'river bank'	695.5	1886	sta 'tiger'	816.3	1351	rjæ 'river bank'	626.5	2163	sta 'tiger'	747.3	1403	yæ 'river bank'	833	1800	sta 'tiger'	885.4	1420
t'æfkæ 'stove'	781.8	1679	bjabjæ 'flat'	764.5	1628	rjæ 'Chinese'	661	2025	bjabjæ 'flat'	883.8	1408	æpe 'grandfather'	868.1	1697	bjabjæ 'flat'	885.4	1455
fçæ 'search'	730	1904	sæpa 'brick'	764.5	1558	çæ 'search'	781.8	1783	sæpa 'brick'	799.1	1265	fçæ 'search'	833.6	1852	wa 'door'	937.1	1213
katae 'dog'	781.8	1697	t'a 'weave'	799.1	1351	rgenæ 'egg'	695.5	1766	t'a 'weave'	818.7	1347	k'ətæ 'dog'	868.1	1731	nt'a 'weave'	885.4	1403
ftçækæ 'stuff'	661	1990	tata 'exactly'	712.8	1300	ftçæk'æ 'stuff'	764.5	1748	tata 'exactly'	806.6	1372	ftçæk'æ 'stuff'	712.8	1955	tata 'exactly'	833.6	1351
æpæ 'father'	747.3	1697	dzurpa 'wheat bran'	764.5	1300	pjæ	799.1	2232	tsupa 'wheat bran'	712.8	816.3	æpæ 'father'	937.1	1748	dzərma 'oder, dirt'	885.4	1438
væ 'pig'	799.1	1766	gadə 'sq. measurement'	799.1	1420	dzjæ 'tea'	695.5	2042	gadə 'sq. measurement'	806.6	1398	væ 'pig'	868.1	1783	gadə 'sq. measurement'	781.8	1282
Average	745.53	1788.70	Average	785.25	1396.20	Average	733.48	1853.8	Average	855.92	1356.215	Average	859.41	1776	Average	870.83	1390.9
çæ	703.7	1910	ape 'grandfather'	780.9	1526				bəbæle	780.9	1374						
rtærgæ	729.4	1733	bəbæle 'insect'	729.4	1424				va	703.7	1320						
tæfkæ	755.2	1681	bjabjæ 'flat'	612.4	1998				kəta	755.2	1553						
zæ	652.3	1321	ɑ-ndzə 'once'	881	1438				op'a 'father'	848.2	1467						
	755.2	1408		853.2	1398					907.2	1497						
			ɑ-ŋe-rə 'is it ok?'	832.3	1467					806.6	1424						
				806.6	1527					832.3	1438						
										909.5	1501						
										832.3	1408						
										818.7	1703						
										818.7	1674						
										935.2	1398						
										818.7	1349						

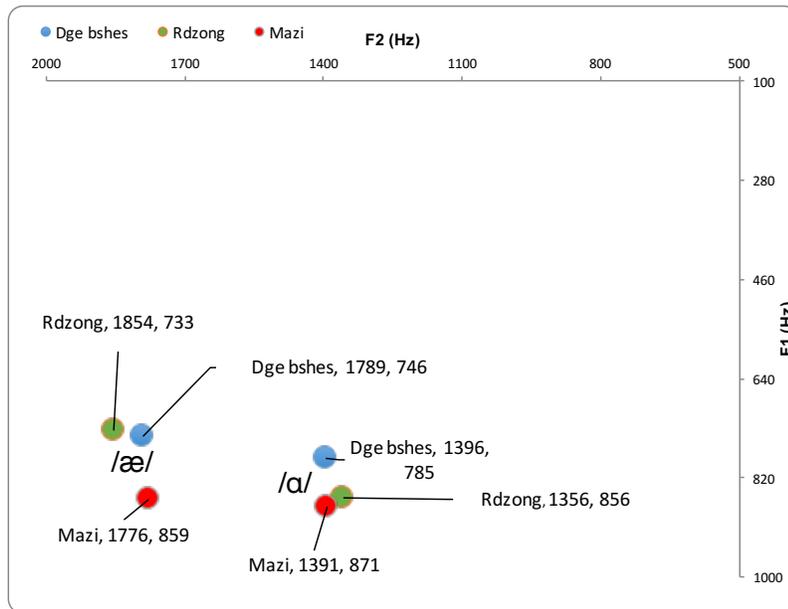
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Table 6.

Dge bshes		
Vowel	F1 (Hz)	F2 (Hz)
æ	746	1789
ɑ	785	1396

Rdzong		
Vowel	F1 (Hz)	F2 (Hz)
æ	733	1854
ɑ	856	1356

Mazi		
Vowel	F1 (Hz)	F2 (Hz)
æ	859	1776
ɑ	871	1391



4. /ɑ/'s historically borrowed from Tibetic into Stau (similar to the English /ʒ/ being borrowed from French)

In my database of about 3,000 words, about 200 words have the vowel [ɑ] (excluding words that have free variation with [æ]). See the Appendix for 188 of these words containing all words that have unique morphemes with [ɑ]. As many words have repeated uses of [ɑ], the total token count is over 300 unique tokens of [ɑ]. This is contrasted with about 900 unique tokens of [æ]. Of the words in my database with [ɑ], only 35 words (< 19%) are native Stau words; that is, I cannot trace these words to Tibetan or Chinese in origin (see the Appendix for all 35 of these words). 10 (5%) of the words in my database with [ɑ] can traced to Chinese origin, and the remaining words (76%) find their origin in Tibetan, 143 of which can be seen in the appendix. Tibetan words can be traced to two main sources. Written Tibetan, most of which can be found in a dictionary, and the Tibetan variety found in the Gyu khog གཡུ་ཁོག་ grasslands in northwestern Daofu County, which are words that are difficult, if not impossible, to find in a dictionary.

Perceptually, speakers are aware in many cases of the pronunciation difference between [ɑ] and [æ]. Speakers although aware of the pronunciation differences between [ɑ] and [æ], unless educated in Tibetan or bilingual in Tibetan, do not necessarily know if a word has been borrowed from Tibetan or if it is a native Stau word. As Stau seems to be moving closer to Tibetan in its lexicon, the distinction between /æ/ and /ɑ/ may become greater.

#### 4.1 Written Tibetan correspondences

(38) Ending in ག་

nga ‘obstruct’ འགག་

ndz̄amama ‘quiet’ འཇག་

za ‘oil’ ཞག་

d̄anda ‘matters/affairs’ དོན་དག་

(39) Ending in གས་

rtap<sup>h</sup>je ‘inspect’ རྟགས་དཔྱད་

t<sup>h</sup>a ‘weave’ ཐགས་

na ‘forest’ རྟགས་

(40) Open rhymes

χagu ‘know’ ཉ་གོ

ȳzala ‘spread’ could be from ཞལ་ལ་ ‘clay/mud floor/plastering’

(41) Other codas

ལ་

χ̄ca ‘die (hon.)’ གཤམ་

ལ་

ȳzala ‘spread’ could be from ཞལ་ལ་ ‘clay/mud floor/plastering’

kramts<sup>h</sup>a རྩོལ་ཚགས་ ‘sieve, sifter’

ས་

n̄japa/ndapa འདས་བག་ ‘mud’

ན་

dzurpa རྩོ་སྐུན་ ‘wheat bran’

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ད

ɣnɑŋɡɑ གནད་འགག་ ‘matter’

བ

ramne རབ་གནས་ ‘incantation’

χtsɑχtsə གཙབ་གདན་ ‘split’

ར

tɕ<sup>h</sup>adza ཆར་དྲག་ ‘torrential-rain’

(42) ག with other vowel markings on the root

མི

χɕɑ ཤག་མིག་ ‘room’

nɟɑpɑ འཇིམ་པ་ ‘clay’

ཐུ

ts<sup>h</sup>a འཇུགས་ ‘start’

4.2 Words from the Tibetan variety found in the Gyu khog གཡུ་ཁོག་ (see Appendix).

4.3 Borrowings from Chinese

(43)

ts<sup>h</sup>a ‘plug into’ 插

tatʂu ‘silk fabric’ 大綢 (maybe?)

## Appendix

### Wordlist for words with /a/

In this list, words are not included that have *a* as a free variant with *æ*. Multisyllabic words that have *a* in more than one syllable are not usually repeated, thus words such as *ɾɲama* ‘tail’ are only listed once. In addition, compounds that would repeat a morpheme that has already been listed with *a* are excluded, unless they add an additional example of *a* (e.g., *Ɂmami* ‘army’ is listed, but *Ɂmamimdo* ‘green’ and *Ɂmaχpən* ‘military officer’ are not listed). Occasionally, such morphemes will be repeated if there is something interesting phonologically or semantically to be noted. In compounds where one or some of the syllables are Stau and the other(s) are Tibetan the Tibetan origin syllables will be in bold in the Lexeme column. Homophones where the Tibetan origin differs are listed separately.

Key for ‘origin’ column: If the origin is traceable to WT, the WT word is written. If the origin is ‘native Stau’ ‘N’ is written. If the word is of Chinese origin the word of origin will be written in Chinese. If a word is in brackets ([ ]) it is from the གཡུ་ཁོག་ dialect of Tibetan spoken by a Mazi Stau speaker.

### Tibetan loans with [a]

Lexeme	Gloss	Origin
avra	pika	ཨ་བྱ་
at <sup>h</sup> a	a few days	ཨ་ཐག་
a ra	alcoholic beverage	ཨ་ར་
nɲapa/ndapa	mud	འདམ་བཟ་
nɲapa	clay	འཇིམ་པ་
pare	towel	པགས་རས་
pamaparu	wedding party	བཟ་མ་བཟ་རྫོགས་
dzurpa	wheat bran	གྲོ་སྐྱུན་
dzaχpa	robber	རྩག་པ་

Lexeme	Gloss	Origin
rcaxpa	fecal matter	སྐྱག་པ་
sapa	brick	ས་པག་
p <sup>h</sup> a	pig	ཕག་
ba	/tag/, /art/, /pl/	པ་ or ཟཱ
mbar ts <sup>h</sup> a	pockmarks	འབར་ཅུག་
ɕubatsə	cloth	帕子
malale	ploughshare	马拉犁
mar na	vegetable oil	མར་ནག་
dzər ma	odor, dirt	དྲིམ་
ɤmami~mame	army	དམག་མི་
słoma	student	སློབ་མ་
χtsōma	clean	གཙོང་མ་
rsōma	protector deity	སྐུང་མ་
gōma	king	གོང་མ་
ndzāmama	quietly	འཇག་མ་མ་ [ndzāmək <sup>1</sup> mək <sup>1</sup> ]
snamasnatso	different kinds	སྣ་མ་སྣ་ཚོགས་
rtɕama	steel (for flint)	ཕུགས་མག་
rɲama	tail, graduate	ར་མ་
fafe	soda, alkali	发粉
vilivəla	messy	[vilivələk <sup>1</sup> ]
scava	leather pouch	སྐུལ་བཀའ་ [scava] ཁང་ means ‘full’ but is added here to show that this is found in the RY dictionary
tata	good	ཉག་ཉག་
scivætartæ	certainly	སྐྱེ་བ་ད་ལྟ་
tatɕu	silk fabric	大绸
rta	mark, sign	རྟགས་
rtatɕ <sup>h</sup> a	horse feed	རྟ་ཚག་
fser rta	Seda	གསེར་རྟ་

Lexeme	Gloss	Origin
dzəvrta	miracle	འབྲུལ་རྟགས་
		an innovative compound from རྟགས་ and དབྱེད་
rtap <sup>h</sup> jɛ	inspect	[stək <sup>h</sup> fɛt]
vdenrta	certification	བདེན་རྟགས་
jɛ rta	criminal notice	ཉེས་རྟགས་
rtɕa rta	bicycle	ཕུགས་རྟ་
sta	tiger	སྟུག་
stazgu	front door	[stək <sup>h</sup> zgo] /zgu/ from སྐོ་
		In the Herder Dialect of Tsomo [pətək], the final [k] provides some conditioning. This may have come from Tibetan and the consonants have flipflopped ཐུག་པ་
pəta	pieces	
rata	mill	རང་འཐུག་
t <sup>h</sup> a	weave	ཐགས་
t <sup>h</sup> atɕ <sup>h</sup> ɛ	decide	ཐག་བཅད་
t <sup>h</sup> aptɕa	bad quality	ཐོབས་ཆགས་
ɕan t <sup>h</sup> av	lhama's clothing	འཕམ་ཐབས་
ɣōt <sup>h</sup> a	until	ཐག་ཉེ་
səmda	determined	ཐེམས་ཐགས་
vdaɣpə	host, boss	བདག་པོ་
dənda	matter	དོན་དགས་
rəda	wild animal	རི་དྭགས་
gada	square measurement	[gadəɣ]
mts <sup>h</sup> a	collect, net	མཚགས་
kramts <sup>h</sup> a	sieve, sifter	ཁྲོལ་ཚགས་
na	tree, forest	ནགས་
nafjō	riffle	ནག་ཚེན་
nats <sup>h</sup> ō	tent	ནག་ཚང་

Lexeme	Gloss	Origin
nanga	important	གནད་ལག་ག
nəkrna	tree ear	ནགས་རྩ་
sna	ink	ལྷག་
ɣnanga	matter	གནད་ལག་ག
sɲuna	dark blue	ཕྱོ་ནག་
ra	copper	རག་
ramne	incantation	རབ་གནས་
rala	branch of a pine	[rælək̚]
bra	cut	བྲེག་
brangu	Luhuo County 炉霍县	བྲག་ལགོ་
tɕʰadzɑ	torrential-rain	ཆར་དྲག་
gra	tell	གྲག་
bə ra	mixed tsampa	[bə rək̚]
safsa	sideways	གསེག་ or སག་ (see note)
ftsadzɹu	white flour	not sure where /ftsa/ is from but /dzɹu/ is Tibetan ལྷོ་ for 'wheat'
la rtsa	wrist pulse	ལག་རྩ་
χtsaχtsə	split	གཙོ་བ་གདན་
tsʰɑ	plug in	插; Sichuanese: [tsʰɑ <sup>35</sup> ]
tsʰɑ	start	འདྲོགས་
tsʰɑ	drip	འཇོག་ or འཇོགས་ or འཚོགས་
ɬa	forget	བརྒྱག་
ɬamu	extra	ལྷག་མ་
rjæza gondzo	the wife of Srong vtsan sgam po	ལྷ་བཟའ་གོང་ཚོ་
laçəv	gloves	ལག་ལུབས་
cə la mæ rə	couldn't do anything	[cə lək̚]
la rten	cain	ལག་རྩེན་

Lexeme	Gloss	Origin
la rtev	hoofing	possibly from ལག་རྩབ་ ‘hand clap’
laχtɕ <sup>h</sup> a	tool	ལག་ཚ་
laɣa	sheep	seems probable to be borrowed from ལག་ or ལུག་ but could be cognate
qa vla	branch of a deciduous tree	[qa vlək̚]
vlak <sup>h</sup> a kə c <sup>h</sup> ɛ	reincarnated lhamas descending through a family	སྐྱུ་མཚན་ [vlak <sup>h</sup> ək̚ tɕ <sup>h</sup> e wo]
ɣela	helpers	[ɣelək̚]
kapəla	forehead	གཡེལ་
k <sup>h</sup> rola	waste	ཁྲོག་ལྗང་
ndzala	stick, climb	སྐྱུ་རབ་ [mdzɛr]
ɣzala	spread	[ɣzælək̚]
lōtɕ <sup>h</sup> a	bamboo food steamer	ལྷང་ས་ཚལ་
ɣa	lively	[ɣək̚]
mæscetɕa	Ma skyes dgra	མ་སྐྱེས་དགྲ་
dza	good person	དྲག་
rtɕa zga	ginger	བཅའ་སྒྲ་
tɕ <sup>h</sup> a	town	[tɕ <sup>h</sup> ək̚]
tɕ <sup>h</sup> alō	cymbals	ཆ་ལང་
dzaχpa	robber	རྩལ་པ་
ɕaɕa	it is (seen with eyes)	[ɕək̚ ɕək̚]
nɣufɕa	repentance	འཇོན་པ་འགས་
χɕa	room	འགས་
χɕa	pour out, die	གཏུག་
tɕ <sup>h</sup> a	repeatedly	ཆ་ཚང་
tɕ <sup>h</sup> ats <sup>h</sup> ō	all	ཆ་ཚང་
ndutɕ <sup>h</sup> a	desire	འདོད་ཆགས་
za	oil	ཞག་

Lexeme	Gloss	Origin
vʒa	stop	བཞག་རྒྱུ་
vʒatɕ <sup>h</sup> u	inheritance	བཞག་རྒྱུ་
k <sup>h</sup> avʒa	excuse	ཁག་བཞག་
ja ndʒa	soap	Diaspora Tibetan uses ཡི་ཚི maybe Chinese
ndʒater	visiting a superhuman	མཇལ་དར་
ndʒayjõ	Bodhisattva Manjushri	འཇམ་དབྱངས་
kandʒa	intimate	[ndʒəkmo]
duʒa	a while ago	[ʒəχɛr]
ʒka rca	whip	ལྷག་ཚུ་ or ཞགས་དབྱུག་ ‘noose’
scambo	picnic food	ཚེ་ཤིག་ [sc <sup>h</sup> ædzɔ]
rʒamts <sup>h</sup> en	Rgyal mtshan	རྒྱལ་མཚན་
ɲamu	sin	ནག་ཉེས་
ja tsə	duck	鴨子
k <sup>h</sup> a ja ŋo rgæ	fake happy	ཁལ་གྲོ་བཟློད་
jatɕ <sup>h</sup> in	Name of a monastery in Baiyu County	ཡ་ཚེན་
jaɲic <sup>h</sup> ɛ	dangerous	[jəkɲic <sup>h</sup> e]
p <sup>h</sup> ja	prostration	ཕྱག་
ɛja	rust	གཡ་
ɛja	yak (male)	གཡམ་
fka	wave down, block, prevent	བཀག་
χpən k <sup>h</sup> a	official (arc)	[χon k <sup>h</sup> ək̄]
k <sup>h</sup> a mbo	backpack	[k <sup>h</sup> a mbok̄]
rtsæ nga	constipated	རྩ་རྒྱ་ལག་པ་
rgarga	bald	རྩ་ (semantic shift from ‘aging’)
rɲamõ	camel	རྩ་མོང་
sɲiɲa	poem	སྒྲུབ་དག་

Lexeme	Gloss	Origin
wa	tile	瓦
tʂojitʂwatʂwa	fork	A child's innovation taking Stau noun /tʂoji/ 'spoon' and making a compound with a reduplication the Chinese verb /tʂwa/ 抓 'grab'
kwakwa	melon, gourd	瓜
q <sup>h</sup> waxpətʂɛn	a name for a fictional man	Tibetan in origin, spelling unknown
hwasẽ	peanut	花生
qaɕi	crow	𑍑𑍅
q <sup>h</sup> a χti	the lickable tsamba stuff	[q <sup>h</sup> a χti]
χagu	understand	𑍑𑍅
χav	fall into	[χop]
maɤar	white poplar	[maɤar]
k <sup>h</sup> aʒa	foam	𑍑𑍅

Native words with [a]

p <sup>h</sup> ap <sup>h</sup> o	Ah ya!	N [havo]
təta	container	N
rt <sup>h</sup> wa	birch bark	N Japhug: Ꞩc <sup>h</sup> ɣaɤ
c <sup>h</sup> eda	/interj/	N
bədiβəda	onomatopoeia: the sound of something hitting the ground	N
ɕaβrə	sickle	N
ɣzqra	broom	N
ndzaβdzə	hide	N
bila	old stuff	N
q <sup>h</sup> ə nɕ <sup>h</sup> a	half cup	N
ca/c <sup>h</sup> a	comfortable	N
sca βlə	thunder	N

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rk <sup>h</sup> u sɾasɾa	cool	N
bja	flat	N
kaca	goodbye	N
ngalə	that place	N
rqwa	throat	N
berqwa	account	N
nq <sup>h</sup> wa	leather bag for wheat & barley	N
qavə	mountainside	N
sqa	ten (for 20-90)	N
q <sup>h</sup> a	/clf/ for long things	N
χa vdu	now	N
va	/clf/ for a group of people	N
va	problem	N
va	door	N
va	/loc/	N
vav	intravenous infusion	N
vasi	opposite	N
valo	chest, stomach	N
vaki	each one	N
ɾvamə	lunatic	N
zva	ten (10)	N
ɾiva	duration	N
χɾiva	collect	N
maɾa	no problem	N
mɾə rɛ ŋə tabə	forebears	N
ɾbala	leaf	N
sta ngu	corner	N