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<th>Shiho Ebihara</th>
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Morphophonological alternation of suffixes, clitics and stems in Amdo Tibetan

Shiho Ebihara*

Some of the suffixes and clitics of Amdo Tibetan have a number of allomorphs which are conditioned phonologically (in most cases, their initial consonants alter). Stems which these suffixes or clitics follow also alternate from time to time. Alternations are to some extent regular, but appear complicated because there are various alternation patterns. This paper gives an overview of morphophonological alternation patterns, by separating the alternation rules of suffixes and clitics (section 3) and the alternation rules of stems (section 4). These morphophonological alternations are also seen in Written Tibetan (sum cu pa), but the rules are rather different between Amdo Tibetan and Written Tibetan. Furthermore, stem alternations are not seen in Written Tibetan. This paper aims at giving a systematic description of the alternation rules in Amdo Tibetan, but it could be a preface to working out the developmental process of Tibetan from a morphophonological perspective, by comparison with Written Tibetan and the other Tibetan languages.

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Key Words: Tibeto-Burman, Tibetan, Amdo Tibetan, Morphophonological alternation, suffixes, clitics

キーワード：チベット・ビルマ語派, アムド・チベット語, 形態音韻的交替, 接辞, 接語
Introduction

Amdo Tibetan is spoken in Qinghai Province, the southern part of Gansu Province, and the northern part of Sichuan Province. In this language, suffixes and clitics have a number of allomorphs which are conditioned phonologically. In most cases, allomorphs vary in their initial consonants. (1) and (2) are examples of the auxiliary verb ////=Gəjol//= (expressing ‘progressive’). ‘//’ and ‘//’ are used to indicate underlying phonemic representation and surface phonemic representation respectively. Several phonological rules are effectively described by referring to the underlying and surface levels of the phonological system.

////=Gajol//= has two allomorphs in sentence-final position; /=kojo/= (example (1)) and /=gajo/= (example (2)). I set up ////=Gajol//= as an underlying form because /=gajo/= appears in more circumstances than /=kojo/=.

(1) nga ndak=kojo. ‘I am staying’
  1SG stay:NPST=AUX
(2) ni hta=gajo. ‘I am watching’
  1SG:ERG watch:NPST=AUX

Introduction

1 Fieldwork and Previous studies
2 Syllable structure and phonemes
  2.1 Syllable structure
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3 Alternations of suffixes and clitics
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    3.1.2 Fricative and affricate
    3.1.3 Retroflex and /r/
    3.1.4 Stem-final consonant copy insertion
4 Alternations of stems
  4.1 The final consonant //p// of stems
  4.2 The final consonant //l// of stems
  4.3 The final consonant //r// of stems
5 Conclusion
Furthermore, stems also alternate in some cases. As in the following examples (3)–(5), when the final consonant of the underlying stem is one of //p//, //l// or //r//, these consonants may be (sometimes partly) assimilated into the initial consonant of the suffix or clitic which follows.

In example (3), the underlying form of the verb ‘fall’ is //nbep//, but alters into /nbek/ before the auxiliary verb /=kəjo/. In other words, the syllable-final consonant //p// of //nbep// is assimilated into the following /k/ of /=kəjo/.

(3) hnem nbek=kəjo. ‘[It] is raining’
    sky fall:NPST=AUX

In example (4), the underlying form of the verb ‘speak’ is //el//, but alters into //ek/ before the auxiliary verb /=kəjo/. In other words, syllable-final consonant //l// of //el// is assimilated into the following /k/ of /=kəjo/.

(4) cek=kəjo. ‘[Somebody] is speaking’
    speak=AUX

In example (5), the underlying form of the noun ‘butter’ is //mer//, but it changes to /me/ before the co-ordination particle /=tə/. In other words, the syllable-final consonant //r// of //mer// is assimilated into the following /t/ of /=tə/.

(5) met=tə kara ‘Butter and sugar’
    butter=CO-ORD sugar

These alternations are in most cases regular and predictable, but appear complicated because there are several alternation patterns. These alternations are not only characteristics of Amdo Tibetan but are also found in Written Tibetan (WT). Nevertheless, the alternation rules are different between Amdo Tibetan and WT. In particular, stems in WT do not alter. This paper shows the morphophonological rules affecting the alternations of suffixes, clitics and those stems, and gives an overview of the alternation patterns of Amdo Tibetan as spoken in Gonghe County on the basis of my field data.

1 Fieldwork and Previous studies

As mentioned in the introduction, Amdo Tibetan is spoken in Qinghai Province, the southern part of Gansu Province, and the northern part of Sichuan Province. Fieldwork was conducted during Aug.–Sep. 2006 and Sep.–Oct. 2007 in Chapcha Town, Gonghe County, Hainan Tibetan Autonomous Region, Qinghai Province. Chapcha is the main city of Gonghe County. The consultants were two men (Mr.
bLo gros rGya mtsho 1936-2008, Mr. A lag rGya ye 1946-) who were born and
grew up in Yongrong village near Chapcha. In most examples of this paper, they
speak in the same way, but a few differences were found. These differences will be
noted in the relevant examples.

This paper aims to describe morphophonological alternations in Amdo Tibetan.
These alternations have not received particular attention in the past. They are only
brieﬂy mentioned in grammars (Ming Shengzhi 1990, Wang Qingshan1996, Gesang
Jumian & Gesang Yangjing 2002, Zhou Maocuo 2003, Haller 20044). This paper is
the ﬁrst attempt to give an overview of the morphophonological alternation systems
in Amdo Tibetan by separating the alternation rules of suﬃxes, clitics (section 3)
and stems (section 4).

2 Syllable structure and phonemes

As a preliminary to the following discussion, I describe the syllable structure
and phonemes of the target language.

2.1 Syllable structure

The syllable structure of this language is shown in (6).

(6) (C1)(C2)(C3)V(C4)

In underlying forms, seven consonants (/p/, /k/, /m/, /n/, /ŋ/, /l/, /r/) can appear
as ﬁnal (C4).

2.2 Phonemes

There are 38 consonants.
Table 1  Consonants

<table>
<thead>
<tr>
<th></th>
<th>bilabial/ labiodental</th>
<th>alveolar</th>
<th>retroflex</th>
<th>alveolo-palatal</th>
<th>palatal</th>
<th>velar</th>
<th>uvular</th>
<th>glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pʰ[pʰ]</td>
<td>b[h]</td>
<td>d[dʰ]</td>
<td>d̆'[d̆ʰ]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>affricate</td>
<td>t[s]</td>
<td>t[sʰ]</td>
<td>t[sʰ]</td>
<td>t̆[t̆]</td>
<td>d̆'[d̆ʰ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dz[dz]</td>
<td>dz[dz]</td>
<td>dz[dz]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fricative</td>
<td>[f]</td>
<td>[s]</td>
<td>s[sʰ]</td>
<td>s̆[s̆ʰ]</td>
<td></td>
<td>h[h]</td>
<td>h[z]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[fʰ]</td>
<td>[sʰ]</td>
<td>s[sʰ]</td>
<td>s̆[s̆ʰ]</td>
<td></td>
<td>h[z]</td>
<td>h[zʰ]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>s̆[s̆ʰ]</td>
<td></td>
<td>s̆[s̆ʰ]</td>
<td>s̆[s̆ʰ]</td>
<td></td>
<td>h[z]</td>
<td>h[zʰ]</td>
<td></td>
</tr>
<tr>
<td>nasal</td>
<td>m[m]</td>
<td>n[n]</td>
<td>n[n]</td>
<td>n[n]</td>
<td>η[ŋ]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>liquid</td>
<td>l[l]</td>
<td>r[r]</td>
<td>r[r]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>semi-vowel</td>
<td>w[w]</td>
<td></td>
<td></td>
<td>j[j]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There are 7 vowels.

/i/ [i]  /y/ [y]  /u/ [uβ]–[wu]  
/e/ [ɛ]  /ø/ [ø]  /o/ [o]  
/a/ [ʌ]  

3  Alternations of suffixes and clitics

Patterns of allomorphs (3.1) and conditions on alternations (3.2) will be shown in the following sections.

3.1 Patterns of allomorphs

Allomorphs of a suffix or a clitic are different in their initial consonants in most cases. In my data, there are four patterns of allomorphs as follows;

1. Voiced and unvoiced
2. Fricative and affricate
3. Retroflex and /r/
4. Stem-final consonant copy insertion

3.1.1 Voiced and unvoiced

[1-1] /tɕ/ and /dʐ/, [1-2] /k/ and /g/ patterns were seen.
### Table 2 ‘voiced and unvoiced’ pattern (abbreviated forms are shown in parentheses)

<table>
<thead>
<tr>
<th></th>
<th>voiced</th>
<th>unvoiced</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1-1] nominalizer</td>
<td>-dzo/</td>
<td>=t'cvo/</td>
</tr>
<tr>
<td>[1-1] AUX //='Dzi:j//</td>
<td>=d'zi:j//</td>
<td>=t'cji:j//</td>
</tr>
<tr>
<td>[1-1] AUX //='Dzi:r//</td>
<td>=dzi:r/</td>
<td>=t'ci:r/</td>
</tr>
<tr>
<td>[1-2] AUX //='Gö//</td>
<td>=gö/</td>
<td>=k'o/</td>
</tr>
<tr>
<td>[1-2] AUX //='Gö:jk//</td>
<td>=gö:jk//</td>
<td>=k'o:jk//</td>
</tr>
</tbody>
</table>

### 3.1.2 Fricative and affricate

[2-1] /sʰ/ and /tsʰ/, [2-2] /z/ and /ts/ patterns were seen.

### Table 3 ‘fricative and affricate’ pattern

<table>
<thead>
<tr>
<th></th>
<th>fricative</th>
<th>affricate</th>
</tr>
</thead>
<tbody>
<tr>
<td>[2-1] nominalizer</td>
<td>-sʰo/</td>
<td>-tsʰo/</td>
</tr>
<tr>
<td>[2-1] AUX //='Söj//</td>
<td>=sʰoj//</td>
<td>=tsʰoj//</td>
</tr>
<tr>
<td>[2-2] AUX //='Zak//</td>
<td>=zak/</td>
<td>=tsak/</td>
</tr>
</tbody>
</table>

### 3.1.3 Retroflex and /r/

/ᵲ/, /nᵲ/ and /ᵲ/ pattern was seen.

### Table 4 ‘retroflex and /ᵲ/’ pattern (abbreviated forms are shown in parentheses)

<table>
<thead>
<tr>
<th></th>
<th>/ᵲ/</th>
<th>/nᵲ/</th>
<th>/ᵲ/</th>
</tr>
</thead>
<tbody>
<tr>
<td>co-ordination particle //='Ra//</td>
<td>=t'a/</td>
<td>=n'da/</td>
<td>=ra/</td>
</tr>
<tr>
<td>conjunction //='Ra//</td>
<td>=t'an//</td>
<td>=n'dan//</td>
<td>=ran//</td>
</tr>
<tr>
<td>sentence-final particle //='Ra//</td>
<td>=t'jat'sb'o/</td>
<td>=n'djat'sb'o/</td>
<td>=rijat'sb'o/</td>
</tr>
<tr>
<td>conjunction //='Ron//</td>
<td>=t'on//</td>
<td>=n'don//</td>
<td>=ron//</td>
</tr>
<tr>
<td>conjunction //='Rit'bats'o// (its abbreviated form is //='Ri//)</td>
<td>=t'it'bats'o// (//=t'i//)</td>
<td>=n'djat'bats'o/ (//=nd'i//)</td>
<td>=rijat'bats'o/ (//=ri'i//)</td>
</tr>
</tbody>
</table>

### 3.1.4 Stem-final consonant copy insertion

If the underlying form of a clitic is //='V//, a copy of a stem-final consonant is inserted in front of the clitic under certain circumstances. Sometimes /C/ of //='CV/ is not the same consonant as the final consonant of the stem, but partly assimilated into the consonant. Otherwise, //='V/ forms follow stems.

The dative case marker //='a// sometimes changes to //='o// after a stem final /o/. I set up //='a// as the underlying form of the dative case marker because vowel /a/
appears in most phonological circumstances.

<table>
<thead>
<tr>
<th>Table 5 ‘stem-final consonant copy insertion’ pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>conjunction //i/</td>
</tr>
<tr>
<td>//ni//, //ŋi//</td>
</tr>
<tr>
<td>conjunction //a//</td>
</tr>
<tr>
<td>//na//, //ŋa//</td>
</tr>
<tr>
<td>dative case marker //a//</td>
</tr>
<tr>
<td>//ka//, //na//, //ŋa//, //wa//</td>
</tr>
<tr>
<td>AUX //a//</td>
</tr>
<tr>
<td>//a//, //o//</td>
</tr>
<tr>
<td>//ka//, //ma//, //na//, //ŋa//, //wa//</td>
</tr>
</tbody>
</table>

3.2 Conditions on alternations

Alternations of suffixes and clitics are conditioned by the final phonemes of the stem. In what follows, the conditions under which each allomorph appears will be described. These conditions differ slightly even in the same pattern of allomorphs.

3.2.1 Voiced and unvoiced


Nominalizer //-Dzo//

//-Dzo// appears as /-təo/ after //l/ of an underlying stem. Furthermore, //l/ is realized as /t/ by assimilating the initial consonant of /-təo/. '/t/ (←//l//)' in table 6 shows this realization of the stem-final consonant.

<table>
<thead>
<tr>
<th>Table 6 Nominalizer //-Dzo//</th>
</tr>
</thead>
<tbody>
<tr>
<td>the final of the stem</td>
</tr>
<tr>
<td>allomorph</td>
</tr>
<tr>
<td>example</td>
</tr>
<tr>
<td>/t/ (←//l//)</td>
</tr>
<tr>
<td>/təo//</td>
</tr>
<tr>
<td>(7)</td>
</tr>
<tr>
<td>/p/</td>
</tr>
<tr>
<td>/-təo/ or /-dzo/</td>
</tr>
<tr>
<td>(8)</td>
</tr>
<tr>
<td>/k/, /m/, /n/, /ŋ/, /r/, vowel</td>
</tr>
<tr>
<td>/-dzo/</td>
</tr>
<tr>
<td>(9)-(14)</td>
</tr>
</tbody>
</table>

(7) cet-təo                                            ‘speaking’

speak-NMLZ
(The underlying form of the verb ‘speak’ is //cəl//=, but it changes to /cet/ before the nominalizer /-təo/)

(8) hep-təo                                           / hep-dzo

‘going/coming (HON)’
go/come:HON-NMLZ go/come:HON-NMLZ
(There is no difference between these two examples. The consultants allow both equally)

(9) ndək-dzo                                          ‘staying’

stay:NPST-NMLZ
(10) ndem-dzo
    choose-NMLZ
‘choosing’
(11) jən-dzo
    COP-NMLZ
‘what it should be’
(12) tʰon-dzo
    drink-NMLZ
‘drinking’
(13) hter-dzo
    give:NPST-NMLZ
‘giving’
(14) sa-dzo
    eat:NPST-NMLZ
‘eating’

AUX //=Dzijan\=./, AUX //=Dzirel\=./

The conditions under which the allomorphs of //=Dzijan\=./ (its abbreviated form is //=Dzi\=./) appear are the same as for //=Dzirel\=./. Only //=Dzijan\=./ (//=Dzi\=./) is shown in the following examples. //=Dzijan\=./ (//=Dzi\=./) expresses ‘future’ (conjunct pattern), //=Dzirel\=./ expresses ‘future, inference’ (disjunct pattern).

Table 7  Auxiliary verb //=Dzijan\=./ (//=Dzi\=./)

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/t/ (←/p/=t/)</td>
<td>/=tɕi=/tɕ/=t/)</td>
<td>(15)</td>
</tr>
<tr>
<td>/p/</td>
<td>/=tɕi=/tɕ/=t/)</td>
<td>(15)</td>
</tr>
<tr>
<td>/t/ (←/l/=t/)</td>
<td>/=tɕi=/tɕ/=t/)</td>
<td>(16)</td>
</tr>
<tr>
<td>/k/, /m/, /n/, /ŋ/, /r/, vowel</td>
<td>/=dzijan=/dzı=/</td>
<td>(17)–(22)</td>
</tr>
</tbody>
</table>

(15) nbet=tɕi     / nbep=tɕi
    ‘[I/we] will go down’
    fall:NPST=AUX    fall:NPST=AUX
(There is no difference between these two examples. The consultants allow both equally. The underlying form of the verb ‘fall’ is //nbep//, but it sometimes changes to /nbet/ before the auxiliary verb //=tɕi\=/)

(16) nbət=tɕi
    ‘[I/we] will go out’
    go out:NPST=AUX
(The underlying form of the verb ‘go out’ is //nbəl//, but it changes to /nbət/ before the auxiliary verb //=tɕi\=/)

(17) ndak=dzı
    stay:NPST=AUX
‘[I/we] will stay’

(18) ndem=dzı
    choose=AUX
‘[I/we] will choose’

(19) len=dzı
    take:NPST=AUX
‘[I/we] will take’

(20) jon=dzı
    come=AUX
‘[I/we] will come’
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(21) tʰer=dzi
carry=AUX
‘[I/we] will carry [something]’

(22) ndzo=dzi
go:NPST=AUX
‘[I/we] will go’

AUX //=Ga//, AUX //=Gajol//, AUX //=Gajokka// and conjunction //=Ga//

The conditions under which the allomorphs of the auxiliary verb //=Ga// appear are the same as for the auxiliary verbs //=Gajol//, //=Gajokka// and the conjunction //=Ga//. //=Gajol//, //=Gajokka// have the abbreviated forms //=Go// and //=Gokə//, respectively. Only the auxiliary verb //=Ga// is shown in the following examples. The auxiliary verb //=Ga// expresses ‘state, attribute’, //=Gajol// expresses ‘progressive’ (conjunct), //=Gajokka// expresses ‘progressive’ (disjunct) and conjunction //=Ga// expresses ‘purposive’.

Table 8  Auxiliary verb //=Ga// (/=kə/ and /=ki/ are free variants. As with /=gə/ and /=gi/)

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/k/ (←//p//)</td>
<td>/=kə/ or /=ki/</td>
<td>(23)</td>
</tr>
<tr>
<td>/k/</td>
<td></td>
<td>(24)</td>
</tr>
<tr>
<td>/k/ (←//l//)</td>
<td></td>
<td>(25)</td>
</tr>
<tr>
<td>/m/, /n/, /ŋ/, /r/, vowel</td>
<td>/=gə/ or /=gi/</td>
<td>(26)–(30)</td>
</tr>
</tbody>
</table>

(23) nbek=kə
fall:NPST=AUX
‘[It] often rains’
(The underlying form of the verb ‘fall’ is //nbep//, but it changes to /nbek/ before the auxiliary verb /=kə/)

(24) tʰok=kə
allowed=AUX
‘[It] is allowed’

(25) jok=kə
exist=AUX
‘[It] is existing’
(The underlying form of the existential verb is //jol//, but it changes to /jok/ before the auxiliary verb /=kə/)

(26) htsem=gə
write=AUX
‘[Somebody] often writes’

(27) nen=gə
lawfully allowed=AUX
‘[It] is lawfully allowed’

(28) maŋ=gə
many=AUX
‘[It] is many’

(29) hter=gi
give:NPST=AUX
‘[Somebody] often gives’

(30) şa=gə
good=AUX
‘[It] is good’
3.2.2 Fricative and affricate
Nominalizer //-S\textsuperscript{b}o//, AUX //=S\textsuperscript{b}on//

The conditions for the allomorphs of the nominalizer //-S\textsuperscript{b}o// are the same as for the auxiliary verb //=S\textsuperscript{b}on//. Only the nominalizer //-S\textsuperscript{b}o// is shown in the following examples. The nominalizer //-S\textsuperscript{b}o// expresses ‘a place to do something’ and the auxiliary verb //=S\textsuperscript{b}on// expresses ‘the occurrence of an event, an event which goes away’.

Table 9 Nominalizer //-S\textsuperscript{b}o//

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/t/ (←/l/)</td>
<td>/-ts\textsuperscript{b}o/</td>
<td>(31)</td>
</tr>
<tr>
<td>/s/ (←/l/)</td>
<td>/-s\textsuperscript{b}o/</td>
<td>(31)</td>
</tr>
<tr>
<td>/p/, /k/, /m/, /n/, /ŋ/, /r/, vowel</td>
<td>/-s\textsuperscript{b}o/</td>
<td>(32)- (38)</td>
</tr>
</tbody>
</table>

(31) jot-ts\textsuperscript{b}o / jos-s\textsuperscript{b}o ‘place to exist’
exist-NMLZ exist-NMLZ
(The underlying form of the existential verb is //jol//, but it changes to /jot/ before the nominalizer /-ts\textsuperscript{b}o/ and into /jos/ before the nominalizer /-s\textsuperscript{b}o/. One consultant allows both examples, but Mr. bLo gros rGya mtsho says ‘jot-ts\textsuperscript{b}o’ is more colloquial than ‘jos-s\textsuperscript{b}o’)

(32) hep-s\textsuperscript{b}o ‘place to go to/place to come to (HON)’
go/come:HON-NMLZ

(33) ndak-s\textsuperscript{b}o ‘place to stay’
stay:NPST-NMLZ

(34) ndzom-s\textsuperscript{b}o ‘place to gather to’
gather-NMLZ

(35) t\textsuperscript{b}on-s\textsuperscript{b}o ‘place to arrive at’
arrive-NMLZ

(36) doŋ-s\textsuperscript{b}o ‘place to beat’
beat-NMLZ

(37) hter-s\textsuperscript{b}o ‘place to give to’
give:NPST-NMLZ

(38) ndzo-s\textsuperscript{b}o ‘place to go to’
go:NPST-NMLZ

AUX //=Z\textsuperscript{ak}//
//=Z\textsuperscript{ak}// expresses ‘inference, hearsay’.
Table 10  Auxiliary verb //Zək//

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>//l/ (←//l//)</td>
<td>/=tsək/</td>
<td>(39)</td>
</tr>
<tr>
<td>/p/, /k/, /m/, /n/, /ŋ/, /r/, vowel</td>
<td>/=zək/</td>
<td>(40)-(46)</td>
</tr>
</tbody>
</table>

(39) cet=tsək

speak=AUX

(The underlying form of the verb ‘speak’ is //çəl//, but it changes to //çet// before the auxiliary verb //tsək//)

(40) hep=zək

come/go:HON=AUX

‘[Somebody] came/went (HON)’

(41) zak=zək

make [someone] do:PAST=AUX

‘[Somebody] made [someone] do’

(42) htem=ək

write=AUX

‘[Somebody] wrote’

(43) tʰon=ək

arrive=AUX

‘[Somebody] arrived’

(44) tʰon=ək

drink=AUX

‘[Somebody] drank’

(45) ngor=ək

go by=AUX

‘[Time] went by’

(46) li=ək

do=AUX

‘[Somebody] did’

3.2.3 Retroflex and /r/

Co-ordination particle //=Ra//, conjunctions //=Roŋ//, //=Ra//

The conditions for the allomorphs of the co-ordination particle //=Ra// are the same as for the conjunction //=Roŋ// (‘adversative’) and the conjunction //=Ra// (‘concessive, adversative’). Only the co-ordination particle //=Ra// is shown in the following examples.

Table 11  Co-ordination particle //=Ra//

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>//l// (←//l//, //r//)</td>
<td>/=ta/</td>
<td>(47), (48)</td>
</tr>
<tr>
<td>//l/, //r//</td>
<td>/=ra/</td>
<td></td>
</tr>
<tr>
<td>//n//</td>
<td>/=nda/ or /=ra/</td>
<td>(49)</td>
</tr>
<tr>
<td>/p/, /k/, /m/, /ŋ/, vowel</td>
<td>/=ra/</td>
<td>(50)-(54)</td>
</tr>
</tbody>
</table>

(47) nap=ta

loyal friend=CO-ORD

‘A loyal friend also’

nap=ra

loyal friend=CO-ORD

(48)
(The underlying form of the noun ‘loyal friend’ is //naptel//, but it changes to /naptet/ before the co-ordination particle /=a/. There is no difference between these two examples. The consultants allow both equally)

(48) me/t- /a /tcepta / mer-//ara tcehara ‘Butter and cheese’
butter=CO-ORD cheese better=CO-ORD cheese
(The underlying form of the ‘butter’ is //mer//, but it changes to /met/ before the co-ordination particle /=a/. There is no difference between these two examples. The consultants allow both equally)

(49) gigen=/nafa /tomba / gigen=ra /tomba ‘A teacher and a student’
teacher=CO-ORD student teacher=CO-ORD student
(There is no difference between these two examples. The consultants allow both equally)

(50) ton\=p=ra /=a
PSN=CO-ORD 1SG
‘Ton\=p and I’

(51) hjek=ra
yak=CO-ORD
‘A yak also’

(52) sonam=ra
PSN=CO-ORD
‘Sonam also’

(53) htak\=h-a-za\=n=ra
PSN-HON=CO-ORD
‘Mr. htak\=h also’

(54) cate\=ho\=n gonpa=ra /=a dihtsa gonpa ‘cate\=ho\=n temple and dihtsa temple’
PLN temple=CO-ORD PLN temple

Conjunction //=Rita\=tsa\=o// (/=//Ri///)
//=Rita\=tsa\=o// (its abbreviated form is //=//Ri///) expresses ‘while~, when~’.

<table>
<thead>
<tr>
<th>Table 12</th>
<th>Conjunction //=Rita=tsa=o// (/=//Ri///)</th>
</tr>
</thead>
<tbody>
<tr>
<td>the final of the stem</td>
<td>allomorph</td>
</tr>
<tr>
<td>/t/ (-/-/=t/)</td>
<td>/==tita=tsa=o=h/ (/==t/)</td>
</tr>
<tr>
<td>/t/ (-/-/=t/)</td>
<td>/==tita=tsa=o=h/ (/==t/)</td>
</tr>
<tr>
<td>/=n/, /=n/</td>
<td>/==nd=ni=tita=tsa=o=h/ (/==nd=n/) or /==ritita=tsa=o=h/ (/==ri/)</td>
</tr>
<tr>
<td>/=p/, /k/, /m/, vowel</td>
<td>/==ritita=tsa=o=h/ (/==ri/)</td>
</tr>
</tbody>
</table>

(55) jot=/\=tita\=tsa\=o\=h
exist=CONJ
‘When existing’

(The underlying form of the existential verb is //jol//, but it changes to /jol/ before the conjunction /=\=tita\=tsa\=o//)

(56) k\=h=\=tita\=tsa\=o\=h
shoulder=CONJ
‘When shouldering’

(The underlying form of the verb ‘shoulder’ is //k\=h\=t/\=r//, but it changes to /k\=h\=t/ before the conjunction /=\=tita\=tsa\=o//)
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(57) łoma jɔŋ=ndʒʰatsʰo / łoma jɔŋ=ritʰatsʰo  ‘When being a student’
student COP=CONJ student COP=CONJ
(There is no difference between these two examples. The consultants allow both equally)

(58) jɔŋ=ndʒʰatsʰo / jɔŋ=ritʰatsʰo  ‘When coming’
come=CONJ come=CONJ
(There is no difference between these two examples. The consultants allow both equally)

(59) hep=ritʰatsʰo  ‘When going/coming (HON)’
go=HON=CONJ
(60) ndək=ritʰatsʰo  ‘When staying’
stay=NPST=CONJ
(61) ndzom=ritʰatsʰo  ‘When gathering’
gather=CONJ
(62) ndzo=ritʰatsʰo  ‘When going’
go=NPST=CONJ

Conjunction //Roŋkoŋŋa//
//Roŋkoŋŋa// expresses ‘when just~’.

Table 13  Conjunction //Roŋkoŋŋa//

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/l/, /ɾ/</td>
<td>/=oŋkoŋŋa/</td>
<td>(63), (64)</td>
</tr>
<tr>
<td>/n/</td>
<td>/=ndʃoŋkoŋŋa/</td>
<td>(65)</td>
</tr>
<tr>
<td>/p/, /k/, /m/, /ŋ/, vowel</td>
<td>/=roŋkoŋŋa/</td>
<td>(66)–(70)</td>
</tr>
</tbody>
</table>

(63) jɔt=ŋoŋkoŋŋa  ‘When [something] just existed’
exist=CONJ
(The underlying form of the existential verb is //jol//, but it changes to /jɔt/ before the conjunction /=ŋoŋkoŋŋa/)

(64) tsʰat=ŋoŋkoŋŋa  ‘When [something] just ended’
end=CONJ
(The underlying form of the verb ‘end’ is //tsʰar//, but it changes to /tsʰat/ before the conjunction /=ŋoŋkoŋŋa/)

(65) tʰon=ndʃoŋkoŋŋa  ‘When [somebody] just arrived’
arrive=CONJ

(66) wap=ŋoŋkoŋŋa  ‘When [something] just fell’
fall=PAST=CONJ

(67) htsok=ŋoŋkoŋŋa  ‘When [somebody] just sat’
sit=CONJ
(68) ndzom=roŋkɔŋŋa  gather=CONJ  ‘When [something/somebody] just gathered’
(69) sʰoŋ=roŋkɔŋŋa  go:PAST=CONJ  ‘When [somebody] just went’
(70) wi=roŋkɔŋŋa  call:PAST=CONJ  ‘When [somebody] just called’

Sentence-final particle //Ra//

The sentence-final particle //Ra// follows after the imperative form.

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ŋ/ (→/l/)</td>
<td>/=ŋa/</td>
<td>(71)</td>
</tr>
<tr>
<td>/ŋ/ (→/rl/)</td>
<td>/=ŋa/</td>
<td>(72)</td>
</tr>
<tr>
<td>/m/, /n/, /ŋ/</td>
<td>/=ndʒa/ or /=ra/</td>
<td>(73)–(75)</td>
</tr>
<tr>
<td>/p/, /k/, vowel</td>
<td>/=ra/</td>
<td>(76)–(78)</td>
</tr>
</tbody>
</table>

(71) çot=ŋa  ‘Speak!’
speak:IMP=SFP
(The underlying form of the verb ‘speak’ is //çol//, but it changes to /çot/ before the sentence-final particle /=ŋa/)

(72) htcot=ŋa  ‘Beat!’
beat:IMP=SFP
(The underlying form of the imperative form of the verb ‘beat’ is //htcoor//, but it changes to /htçot/ before the sentence-final particle /=ŋa/)

(73) htsom=ndʒa  /  htsom=ra  ‘Write!’
write:IMP=SFP  write:IMP=SFP
(There is no difference between these two examples. One consultant allows both. However, Mr. A lag rGya ye said ‘htsom=ra’ is more acceptable than ‘htsom=ndʒa’)

(74) nɔn=ndʒa  /  nɔn=ra  ‘Listen!’
listen=SFP  listen=SFP
(There is no difference between these two examples. One consultant allows both. However, Mr. A lag rGya ye said ‘nɔn=ra’ is more acceptable than ‘nɔn=ndʒa’)

(75) sʰoŋ=ndʒa  /  sʰoŋ=ra  ‘Go!’
go:IMP=SFP  go:IMP=SFP
(There is no difference between these two examples. One consultant allows both. However, Mr. A lag rGya ye said ‘sʰoŋ=ra’ is more acceptable than ‘sʰoŋ=ndʒa’)

(76) dzop=ra  ‘Shoot!’
shoot:IMP=SFP
(77) çok=ra  
  come:IMP=SFP  ‘Come!’

(78) hti=ra  
  watch:IMP=SFP  ‘Watch’

3.2.4 Stem-final consonant copy insertion

In an underlying form /=V//, a copy of the final consonant of a stem is inserted in front of the clitic under certain circumstances to form a surface /=CV// (the examples are (79)–(82)). Sometimes /C/ of /=CV// is not the same as the final consonant of the stem, but is partly assimilated into it (as in (83)). Otherwise, the /=V// form follows a stem (the examples are (84) and (85)).

(79) //ən//  +  //=i//  >  /ən=ni/  ‘[Somebody] gave, then’
give:PAST  =CONJ

(80) //joŋ//  +  //=i//  >  /joŋ=ŋi/  ‘[Somebody] came, then’
come =CONJ

(81) //sonam//=  +  //=a//=  >  /sonam=ma/  ‘to Sonam’
PSN =DAT

(82) //naŋ//=  +  //=a//=  >  /naŋ=ŋa/  ‘to inside’
inside =DAT

(83) //tʰəp//=  +  //=a//=  >  /tʰəp=wa/  ‘[I/we] was/were able to do’
able =AUX

(84) //kʰor//=  +  //=i//=  >  /kʰor=i/  ‘[Somebody/something] turned, then’
turn =CONJ

(85) //go//=  +  //=a//=  >  /go=a/  ‘to the outside’
doор =DAT

The circumstances under which consonant copy insertion occurs vary from clitic to clitic. Four clitics (the conjugations //=i//=, //=a//=, the dative case marker //=a//= and the auxiliary verb //=a//=) will be exemplified in what follows.

Conjunctions //=i//=, //=a//=

The conditions for the allomorphs of the conjunction //=i//= are the same as for conjunction //=a//=. Only the conjunction //=i//= is shown in the following examples. Both //=i//= and //=a//= express ‘sequential actions, simultaneous actions’.

Table 15  Conjunction //=i//=

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/n/</td>
<td>//=ni//</td>
<td>(86)</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>//=ŋi//</td>
<td>(87)</td>
</tr>
<tr>
<td>/w/ (←//p//), /k/, /m/, /l/, /r/, vowel</td>
<td>//=i//</td>
<td>(88)–(93)</td>
</tr>
</tbody>
</table>
(86) tʰon=ni
arrive=CONJ
‘[Somebody] arrived, then’

(87) sʰon=ŋi
go:PAST=CONJ
‘[Somebody] went, then’

(88) ndʒw=i
finish up=CONJ
‘[Something] finished up, then’
(The underlying form of the verb ‘finish up’ is //ndʒp//, but it changes to /ndʒw/ before the conjunction /=i/=)

(89) dzak=i
run=CONJ
‘[Somebody] ran, then’

(90) dem=i
carry=CONJ
‘[Somebody] knotted, then’

(91) tɕʰər=i
carry=CONJ
‘[Somebody] carried [something], then’

(92) tɕʰəl=i
bring along [a person]=CONJ
‘[Somebody] brought along [a person], then’

(93) hti=i
watch:PAST=CONJ
‘[Somebody] watched, then’

Dative case marker //=a//
The dative case marker is used for expressing ‘recipient’ or ‘direction’. Only after the vowel /o/, //=a// sometimes changes to /=o/ (as in example (104)), but the conditions under which /=o/ appears are not fully understood. Otherwise, the vowel of //=a// is /a/.

Table 16 Dative case marker //=a//

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/p/</td>
<td>/=wa/</td>
<td>(94)</td>
</tr>
<tr>
<td>/w/ (= //p/)</td>
<td>/=a/</td>
<td></td>
</tr>
<tr>
<td>/k/</td>
<td>/=ka/ or /=a/</td>
<td>(95)</td>
</tr>
<tr>
<td>/m/</td>
<td>/=ma/ or /=a/</td>
<td>(96)</td>
</tr>
<tr>
<td>/n/</td>
<td>/=na/</td>
<td>(97)</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>/=ŋa/</td>
<td>(98)</td>
</tr>
<tr>
<td>/l/, /ɾ/, vowels except /o/</td>
<td>/=a/</td>
<td>(99)–(102)</td>
</tr>
<tr>
<td>/o/</td>
<td>/=a/, /=o/</td>
<td>(103), (104)</td>
</tr>
</tbody>
</table>

(94) tonдʒp=wa  /  tonдʒw=a  ‘to Tonдʒp’
PSN=DAT PSN=DAT
(Mr. bLo gros rGya mtsho allows both examples, but Mr. A las rGya ye uses only ‘tonдʒw=a’. In /tonдʒw=a/, //p// of the underlying form //tonдʒp// (a personal name) changes to /w/ before the dative case marker /=a//)
(95) **htɕak=ka** / **htɕak=a**  ‘to one (person, thing)’  
1=DAT 1=DAT

(Mr. *bLo gros rGya mtsho* allows both examples, but Mr. *A lag rGya ye* uses only ‘htɕak=a’. There is no difference between these two examples.)

(96) **sem=ma** / **sem=a**  ‘to a heart’
heart=DAT heart=DAT

(Mr. *bLo gros rGya mtsho* allows both examples, but Mr. *A lag rGya ye* uses only ‘sem=a’. There is no difference between these two examples.)

(97) **sʰemtɕen=na**  ‘to beings’
beings=DAT

(98) **tan⁰=ŋa**  ‘to the Communist Party’
Communist Party:Ch.=DAT

(99) **tʰemtɕe=a**  ‘to all’
all=DAT

(100) **mar=a**  ‘downstairs’
down=DAT

(101) **ŋa=a**  ‘to me’
1SG=DAT

(102) **rɨnpotʰe=a**  ‘to a rinpoche’
rinpoche=DAT

(103) **ɕimo=a**  ‘to a girl’
girl=DAT

(104) **tʰo=o**  ‘to you’
2SG=DAT

**AUX //=a//**
The auxiliary verb //=a// expresses ‘events concerning the speaker’.

<table>
<thead>
<tr>
<th>the final of the stem</th>
<th>allomorph</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/p/ /w/ (←//p/)</td>
<td>/=wa/</td>
<td>(105)</td>
</tr>
<tr>
<td>/n/</td>
<td>/=na/</td>
<td>(106)</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>/=ŋa/</td>
<td>(107)</td>
</tr>
<tr>
<td>/k/, /m/, /ŋ/, /ɾ/, vowel</td>
<td>/=a/</td>
<td>(108)–(111)</td>
</tr>
</tbody>
</table>

(105) **tʰap=wa** / **tʰɔw=a**  ‘[I/we] was/were able to do’
able=AUX able=AUX

(The underlying form of the verb ‘able’ is //tʰap//, but it changes to /tʰɔw/ before the auxiliary verb /=a/. There is no difference between these two
examples. The consultants allow both equally)

(106) \textit{\texttt{t'on=na}} \text{ arrive=AUX} \quad \text{‘[I/we] arrived’}

(107) \textit{\texttt{s'oen=na}} \text{ go:PAST=AUX} \quad \text{‘[I/we] went’}

(108) \textit{\texttt{ndak=a}} \text{ stay:NPST=AUX} \quad \text{‘[I/we] will stay’}

(109) \textit{\texttt{htsem=a}} \text{ write=AUX} \quad \text{‘[I/we] wrote’}

(110) \textit{\texttt{tc'or=a}} \text{ carry=AUX} \quad \text{‘[I/we] carried [something]’}

(111) \textit{\texttt{hti=a}} \text{ watch:PAST=AUX} \quad \text{‘[I/we] watched’}

4 Alternations of stems

When the final consonant of the underlying stem is one of //p//, //l// or //r//, these consonants may be (partly) assimilated into the initial consonant of the suffix or the clitic as in (112).

(112) //p// → /t/, /k/, /w/  
    //l// → /t/, /l/, /k/, /s/  
    //r// → /

The alternations of stems are less predictable than those of suffixes and clitics. Even in the same circumstances, a stem sometimes changes and sometimes does not. Examples of each alternation are listed as follows (4.1, 4.2, 4.3).

4.1 The final consonant //p// of stems

//p// changes to /t/ before /t/ (as in example (113)), /k/ before /k/ (as in example (114)) and /w/ before /a/, /i/ (as in examples (115), (116)).

(113) \textit{\texttt{nbet=tci}} \text{ fall:NPST=AUX} \quad \text{‘[I/we] will go down’}  

(The verb ‘fall’ is /nbep/, but can change to /nbet/ before the auxiliary verb /=tci/) (=15))

(114) \textit{\texttt{nbek=kə}} \text{ fall:NPST=AUX} \quad \text{‘[It] often rains’}  

(The verb ‘fall’ is /nbep/, but changes to /nbek/ before /=kə/) (=23))

(115) \textit{\texttt{tondwp=a}} \text{ PSN=DAT} \quad \text{‘to Tondwp’}
(The personal name ‘Tonəp’ is /tonəp/, but can change to /tonəw/ before the dative case marker /=a/) (=94))

(116) ndəw=i

‘[Something] finished up, then’

finish up=CONJ

(The verb ‘finish up’ is /ndəp/, but changes to /ndəw/ before the conjunction /=i/) (=88)

4.2 The final consonant //l// of stems

//l// changes to /t/ before /ts/ (117), /tʃ/ (118), /t/ before /t/ (119), /k/ before /k/ (120), and /s/ before /s/ (121).

(117) jot-tsʰo

‘place to exist’

exist-NMLZ

(The underlying form of the existential verb is //jol//, but it changes to /jot/ before the nominalizer /-sʰo/) (=31))

(118) nbat=tɕi

‘[I/we] will go out’

go out:NPST=AUX

(The underlying form of the verb ‘go out’ is //nbəl//, but it changes to /nbət/ before the auxiliary verb /=tɕi/) (=16))

(119) çot=tə

‘Speak!’

speak:IMP=SFP

(The underlying form of the imperative form of the verb ‘speak’ is //çol//, but it changes to /ço/ before the sentence-final particle /=tə/) (=71))

(120) jok=kə

‘[It] is existing’

exist=AUX

(The underlying form of the existential verb is //jol//, but it changes to /jok/ before the auxiliary verb /=kə/) (=25))

(121) jos-sʰo

‘place to exist’

exist-NMLZ

(The underlying form of the existential verb is //jol//, but it changes to /jos/ before the nominalizer /-sʰo/) (=31))

4.3 The final consonant //r// of stems

//r// changes to /t/ before /t/ (122).

(122) htcōt=tə

‘Beat!’

beat:IMP=SFP

(The underlying form of the verb ‘beat’ is //htcər//, but it changes to /htcət/ before the sentence-final particle /=tə/) (=72))
5 Conclusion

This paper is a first attempt to provide a systematic description of the morphophonological alternation rules of suffixes, clitics and stems in Amdo Tibetan. The following two rules were demonstrated:

- **Alternation rules of suffixes and clitics (section 3)**
  - Patterns of allomorphs (3.1); 1. voiced and unvoiced, 2. fricative and affricate, 3. retroflex and /r/, 4. stem-final consonant copy insertion.
  - Conditions for alternations (3.2); the conditions under which each allomorph appears vary even with the same pattern of suffixes or clitics.

- **Alternation rules of the stems (section 4)**
  - As mentioned at the outset of section 4, even under the same circumstances a stem sometimes changes and sometimes does not. It is difficult at the present time to fully explain the conditions under which these alternations occur. It is noteworthy that the alternations do not follow the sonority hierarchy.
    - //p// → /t/ (before /t/), /k/ (before /k/), /w/ (before /a/, /i/)
    - //l// → /t/ (before /ts/, /t/), /l/ (before /l/), /k/ (before /k/), /s/ (before /s/)
    - //r// → /r/ (before /r/)

By separating these two sets of rules (alternation rules of suffixes and clitics, alternation rules of stems), the morphophonological rules of Amdo Tibetan could be clarified more easily. Although this study presents data only from the Amdo Tibetan spoken in Gonghe County of Qinghai province, the rules identified here will be of help in describing other varieties of Amdo Tibetan. As remarked in the introduction, the alternation rules of suffixes and clitics vary between WT and Amdo Tibetan. Furthermore, stems in WT do not change: stem alternations are peculiar to Amdo Tibetan. This might relate to the low predictability of the stem alternations. In order to trace the developmental process of Tibetan from a morphophonological perspective, a comparison with WT or the other Tibetan languages remains a topic for further study.

**Abbreviation**
- Affix boundary
- Clitic boundary
- Underlying phonemic representation
- Surface phonemic representation
Ebihara  Morphophonological alternation of suffixes, clitics and stems in Amdo Tibetan

1    First person
2    Second person
3    Third person
AUX   Auxiliary verb
C    Consonant
Ch.   Chinese
CONJ  Conjunction
CO-ORD Co-ordination particle
COP   Copula
DAT   Dative case marker
ERG   Ergative
HON   Honorifics
IMP   Imperative
NMLZ  Nominalizer
NPST  Non-past
PAST  Past
PL    Plural
PLN   Place name
PSN   Person name
SFP   Sentence-final particle
SG    Singular
V     Vowel

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Notes
1) Both suffixes and clitics need hosts to depend on. Zwicky & Pullum (1983) said ‘Clitics can exhibit a low degree of selection with respect to their hosts, while affixes exhibit a high degree of selection with respect to their stems’. Based on Zwicky & Pullum (1983) and Zwicky (1985), I set up two tests for distinguishing between suffixes and clitics: (a) a clitic can follow several parts of speech, (b) a suffix does not follow a clitic. By these tests, case markers, a co-ordination particle, auxiliary verbs, sentence final particles are clitics, while nominalizers are suffixes. The clitics found in Amdo Tibetan are all enclitics.
2) The final consonant /l/ of //=Gəjol// does not appear in sentence-final position.
3) It is called sum cu pa in WT. DeLancey (2003: 258) said ‘[S]everal grammatical morphemes, pre-
sumably clitics, show alternations in the initial consonant depending on the final of the preceding word. For instance, the genitive case marker gi follows velars g, ng; kyi following obstruents d, b, s; gyi follows sonorants n, m, r, l; ‘i follows vowels (‘i is written as part of the preceding syllable).

4) Haller (2004: 31-34) in particular considerably described the alternation rules of suffixes and clitics.


6) Allomorphs of //=Zək// are /=zək/ and /=tsək/, thus it also belongs to [1] ‘voiced and unvoiced’ pattern.

7) Shirai (2007: 140) divided ‘conjunct/disjunct’ patterns into two types: (1) the “person-restricted” type like that of Newar and (2) the “point-of-view” type like that of modern Tibetan. In modern Tibetan, as Shirai (2007: 140) noted ‘the conjunct form is chosen if the speaker is a conscious participant in the process of the event—regardless of the person of the subject’.

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