

ASPECTS OF AMDO TIBETAN SEGMENTAL PHONOLOGY

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This paper is an attempt to create a systematic picture of the segmental structure of Amdo Tibetan, as described on the basis of one specific local dialect spoken in the township of rDo-sbis (in Chinese *Daowei*). rDo-sbis belongs to the Xunhua Salar Autonomous County (*Xunhua Salazu Zizhixian*) of the Haidong Region (*Haidong Diqu*), Eastern Qinghai, and is located in the immediate vicinity of the Gansu border some twenty kilometres south of the Yellow River. The old and important monasteries of bLa-brang and Reb-gong are both located at a distance of no more than ca. 80 kilometres from the center of rDo-sbis.

The dialect of rDo-sbis is the native language of one of the authors, who is also the principal author of a practical textbook of Amdo Tibetan based largely on this same dialect (Norbu et al. 1999). In the textbook, however, other close-lying dialects, notably that of Reb-gong, have also been taken into consideration and partially incorporated into the data. As a result, the system of Romanization used for Amdo in the textbook may be characterized as a broad quasiphonemic generalization of a regional interdialectal norm. It is the task of the present paper to reinterpret this generalization from the point of view of the actual phonemic distinctions of a single dialect. It is hoped that the insights thus gained will provide a basis for a more comprehensive understanding of Amdo phonology.

Although the present paper is based on the native competence of a single individual, there are reasons to assume that the validity of the analysis goes beyond the idiolectal level and is representative of at least a large section of the Tibetan population in rDo-sbis. With the reservation of slight local and generational differences it may therefore be estimated that the number of people speaking idiolects and subdialects closely similar to the one described here comprises most of the Tibetan population in rDo-sbis, or ca. 8,000 individuals. Additionally, the same variety of speech is spoken as a second language by some individuals and communities representing other local ethnic groups, especially by many older males of the Turkic speaking Salar nationality.

In the general classification of Amdo Tibetan dialects, the dialect of rDo-sbis is normally regarded as an example of “farmers’ speech”, implying that it is a relatively innovative idiom within the Amdo context, a situation obviously conditioned by its areal adjacency to Chinese as well as to several other languages belonging to different language families. Nevertheless, the influence of Chinese remains indirect for many Tibetan speakers in rDo-sbis, for a fluent knowledge of Chinese is still far from universal in the locality. On the other hand, the school system seems to be gradually influencing the dialectal situation by introducing the regional norm of Amdo Tibetan as an alternative to the local vernacular.

Previous works relevant to the understanding of the phonological structure of the dialect under investigation include a number of descriptions of various other Amdo Tibetan dialects, some of them rather close to rDo-sbis (Roerich 1958), and others conspicuously far from it (Nagano 1980). Of most immediate interest is the recent progress made in the analysis of the bLa-brang dialect (Makley et al. 1997). The approach of the present paper is, however, somewhat more technical as well as more strictly phonological. It has to be emphasized that the analysis proposed below is tentative, and any constructive criticism or alternative line of argumentation will be welcomed by the authors.

Since the speakers of Amdo Tibetan apply the orthographical rules of Written Tibetan when writing their language, and since these rules generally reflect the diachronic background of the modern spoken structures, the synchronic interpretations below will be placed in a comparative and diachronic context by quoting the written shapes (in boldface) of the items analyzed. In most cases these written shapes are identical with those used also by speakers of other forms of Tibetan, but occasionally, as in the case of dialectally restricted lexical items, it is a question of specifically Amdo orthographical creations. Because of the secondary nature of such written shapes, they are not necessarily diachronically correct nor synchronically normative.

1. SYLLABLE STRUCTURE

Like many Amdo Tibetan dialects, the dialect of rDo-sbis may be classified as a non-tonal and prefixal (in the sense of Uray 1949: 17-24) variety of Tibetan. Although most words in the dialect are synchronically either bisyllabic or polysyllabic, the basic syntagmatic regularities are determined by syllable structure, which can most immediately be observed in monosyllabic words. The canonic syllable may be defined as a sequence of segments consisting of a vocalic nucleus or core (V) and three consonantal loci or slots, which may be termed the initial (C), the final (F), and the preinitial consonant (H).

All the consonantal slots of the syllable may be either filled or empty (∅), though the preinitial consonant (traditionally called the prefix) can be present only if

the syllable also has an initial consonant. The three alternative structures that can precede the vocalic core are therefore HC, ØC, and ØØ, yielding the general syllable formula ((H)C)V(F). The maximal syllable has the structure HCVF, with all the slots filled by material segments, while the minimal syllable has the structure ØØVØ, with only the core filled. The structure of most actual syllables falls between these extremes.

It must be noted that the structure of the synchronic syllable, as used by speakers of the dialect under investigation, is considerably simpler than that of the written syllable. The formula of the latter (Beyer 1992: 68-89) may perhaps be rendered as (((B)H)C)(M(M))V(F(S)), which includes three types of additional elements: the pre-preinitial consonant (B), the postfinal consonant (S), and one or two postinitial or medial consonants (M). None of these elements is of synchronic relevance in the dialect concerned. The status of the medials will, however, require special attention, for they could potentially provide an alternative for the analysis of certain segmental distinctions.

When syllables are combined into bisyllabic or polysyllabic words, some morphophonological processes operate regularly at the syllable boundary. In some cases, the results of these processes have already become incorporated into the lexical structure of the resulting words, while in other cases we are probably still dealing with synchronic mechanisms. However, these phenomena have little immediate relevance to the analysis of synchronic segmental phonology. At the segmental level each word can be divided into syllables which follow the basic rules of syllable structure, as generalized above.

In the following, the segmental distinctions of the maximal syllable will be surveyed separately for each of the five actual or potential segmental slots: pre-initials, initials, medials, vowels, and finals. For each slot we shall examine the number and type of distinctions present in the dialect under investigation. The phonemic identifications reflect a minimalistic interpretation of the distributional facts. The analysis is based on a strictly synchronic examination of the data, though in the explanatory sections reference will be also made to diachronic and orthographical facts.

2. INITIALS

The initials represent the maximal paradigm of consonants and provide therefore a basis for establishing all the distinctions relevant to the consonant system. Since, however, it is not immediately clear how many different initials there are and what kind of distinctions the oppositions between them are based on, we shall in the following examine the consonant system in a cumulative way, starting with the least ambiguous segments. These are the three basic nasals *m n ŋ* [m n ŋ], which represent three distinct places of articulation (labial vs. dental vs. velar):

(i)

<i>m</i>	<i>n</i>	<i>ng</i>
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The nasals are normally always (in cases involving no preinitial) pronounced as fully voiced, and they have no phonemically distinct voiceless counterparts in the dialect. The contrast between the three nasals is visible from, for instance, the triplet *ma* 'here you are' (**ma**) vs. *na* 'to be ill' (**na**) vs. *nga* 'I' (**nga**).

The same three places of articulation are relevant to the oral stops, which, however, are additionally divided into two series according to a parameter which may be termed strength (strong vs. weak). We denote the strong stops by the basic letters *p t k* and the weak stops by the basic letters *b d g*, respectively:

(ii)

<i>m</i>	<i>n</i>	<i>ng</i>
<i>p</i>	<i>t</i>	<i>k</i>
<i>b</i>	<i>d</i>	<i>g</i>

In the dental and velar columns, the segments of the strong series represent diachronic and orthographical aspirated stops (**th kh**), while the corresponding segments of the weak series represent both voiceless and voiced unaspirated stops (**t k & d g**). In the synchronic pronunciation, the aspiration is still phonetically present in the strong series [^hp ^ht ^hk^h], while the segments of the weak series are normally pronounced as voiceless and unaspirated [p t k]. The contrast between the two series can be demonstrated by minimal pairs such as *ta* 'ashes' (**tha**) vs. *da* 'now' (**da**), *ka* 'mouth' (**kha**) vs. *ga* 'column' (**ka**).

The labial stops are diachronically different from the corresponding dentals and velars, in that they are secondary phonemes. The original labial stops in initial position, still preserved at the orthographical level (**ph p b**), have undergone spirantization, which has removed them from the system of stops. The synchronic labial stops are therefore typically attested in recent lexical innovations, Chinese loanwords, interdialectal borrowings, and Tibetan reading pronunciations, such as *pami* 'it does not matter' (**pha-med**), *piu* 'ticket' (**phe-xo**, Chinese *piao*), *badra* 'rhombus' (**pa-tra**), *budala* 'Potala' (**po-ta-la**). The contrast of the two labial stop phonemes can nevertheless be easily demonstrated by referring to the names of the letters *pa* (**pha**) vs. *ba* (**ba & pa**), well known even to illiterate individuals.

To the above system of three basic columns, we may add a fourth one, formed by the dental affricates *ts dz*. The latter are distinguished from the corresponding plain stops by the presence of a sibilant release:

(iii)

<i>m</i>	<i>n</i>	<i>ng</i>	
<i>p</i>	<i>t</i>	<i>ts</i>	<i>k</i>
<i>b</i>	<i>d</i>	<i>dz</i>	<i>g</i>

At the diachronic and orthographical levels, the two dental affricates reflect the corresponding aspirated vs. voiceless and voiced unaspirated segments (**tsh** vs. **ts** & **dz**), though the orthographical voiced dental affricate does not occur in initial position (without a preinitial). The principal phonetic difference between the two synchronic dental affricates consists, as in the case of the stops, of the aspiration of the strong segment *ts* [*ts^h*], as opposed to the unaspirated but similarly voiceless quality of the weak segment *dz* [*ts*]. The opposition between the two dental affricates may be illustrated by the minimal pair *tsung* 'business' (**tshong**) vs. *dzung* 'onion' (**tsong**).

Unlike the three other columns corresponding to different places of articulation, the status of the dental affricates is connected with the manner of articulation. The distinctive feature involved may be termed sibilantness, and it is also characteristic of two fricative consonants, which may be seen as the continuant counterparts of the dental affricates. We denote the sibilant continuants by the letters *s z*:

(iv)	<i>m</i>	<i>n</i>	<i>ng</i>
	<i>p</i>	<i>t</i> <i>ts</i>	<i>k</i>
	<i>b</i>	<i>d</i> <i>dz</i>	<i>g</i>
		<i>s</i>	
		<i>z</i>	

Examples like *sa* 'soil, dirt' (**sa**) vs. *za* 'to eat' (**za**) show that the synchronic contrast between the two sibilant continuants corresponds to the diachronic and orthographical distinction between what are normally regarded as an original voiceless vs. voiced sibilant consonant. The synchronic phonetic difference in the pronunciation of the two segments is, however, not based on the parameter of voice. Rather, the strong segment *s* [*s^h*] is followed by a short phase of aspiration, not dissimilar from that following the strong dental affricate and the other strong stops. The weak segment *z* [*s*] is also voiceless but lacks the aspiration and is characterized by a certain tenseness which, at least auditively, would seem to continue into the following vowel.

The phonetic relationship between the two sibilant continuants raises the question as to which member of the pair might be phonologically marked. Both diachronic and synchronic facts would suggest that it is the weak segment *z* that is to be regarded as marked, diachronically for voicedness but synchronically for a feature that could be identified simply as tenseness. Paradoxically, the aspiration accompanying the strong segment *s* could then be seen as indicative of its unmarked, or lax, status. This interpretation is perhaps supported by the fact that *s* is also the normal substitution for Chinese *s* (which is indifferent from the point of view of the parameter of strength), as in *sung* 'Song' [dynasty] (**song**, Chinese *song*).

If the strong segment is unmarked in the sibilant continuants, we must probably assume that the same is true of the dental affricates and the other stops. In fact, reviewing the auditive properties of the stops in the light of the sibilants, it might be possible to maintain that the weak stops (and the vowels following them) are characterized by the same type of tenseness as the weak sibilant continuant. It is, however, less clear whether this interpretation can be extended to the other continuants, which show a more obvious correlation between voiced and voiceless segments. In the labial and dental columns we may denote these segments by the letters *f w l* and the digraph *lh*:

(v)	<i>m</i>	<i>n</i>		<i>ng</i>
	<i>p</i>	<i>t</i>	<i>ts</i>	<i>k</i>
	<i>b</i>	<i>d</i>	<i>dz</i>	<i>g</i>
	<i>f</i>	<i>lh</i>	<i>s</i>	
	<i>w</i>	<i>l</i>	<i>z</i>	

The four segments *f w lh l* are phonetically a rather heterogeneous group, but the basic parameter of glottal activity divides them clearly into the two strong segments *f lh*, which are always voiceless, and the corresponding weak segments *w l*, which are always voiced. The labials *f w* are realized as relatively strong fricatives, which vacillate between the bilabial [ɸ β] and dentilabial [f v] positions, though the dentilabial pronunciation prevails. The dentals *lh l* [ʈ ɭ], on the other hand, are laterals, though the oral friction often present in *lh* would also allow it to be classified as a fricolateral.

The synchronic characteristics of the segments *f w lh l* are connected with their diachronic background. The dentals *lh l* may be viewed as more or less direct reflexes of the original laterals, as is evident from, for instance, the minimal pair *la* 'slope, pass' (**la**) vs. *lha* 'god' (**lha**). In the labials, the weak segment *w* represents the spirantized reflex of the original voiced labial stop, as in *we* 'son' (**bu**). The strong labial continuant *f*, by contrast, is a secondary marginal phoneme, introduced with Chinese loanwords such as *fen* 'fen' [currency unit] (**hphin**, Chinese *fen*), *finlan* 'Finland' (**hphen-lan**, through Chinese *fenlan*). Synchronically there is nevertheless no doubt that *f* has already penetrated into the regular consonant paradigm of the dialect.

We now come to what is perhaps the most intricate issue in Amdo Tibetan segmental phonology. This is the question concerning the taxonomical status of the fricative sounds produced in the velar to laryngeal zone. At the simple segmental level, there seem to be three consonants belonging to this category. We denote them by the letters *x q h*. Among these, the segment *x* may phonetically be characterized as a strong voiceless velar or uvular fricative [x χ], while *q* is the corresponding voiced segment [ɣ ʁ], which may also be realized as a uvular vibrant

[R]. The third segment *h* is normally pronounced as a relatively weak voiceless laryngeal spirant [h]. Thus, phonetically we might speak of two velars or uvulars and one laryngeal.

Thinking of the paradigmatic status of these consonants, it is fairly obvious that the segments *x q*, at least, in spite of their vacillation between the velar and uvular positions, belong phonologically to the velar column and form an exact parallel to the pairs *f w* and *lh l*:

(vi)	<i>m</i>	<i>n</i>		<i>ng</i>
	<i>p</i>	<i>t</i>	<i>ts</i>	<i>k</i>
	<i>b</i>	<i>d</i>	<i>dz</i>	<i>g</i>
	<i>f</i>	<i>lh</i>	<i>s</i>	<i>x</i>
	<i>w</i>	<i>l</i>	<i>z</i>	<i>q</i>

The segment *h* is more difficult to place in the system, for it is not immediately clear whether its distinction with regard to the other consonants is based on its articulatory weakness or its laryngeal place of articulation. Considering the fact that it seems to be unaffected by the strength correlation, it can nevertheless rather safely be placed in a separate series of consonants, which may be identified as the glides. In the glide series, *h*, though phonetically a laryngeal, may be assumed to be located in the same velar column as the segments *x q*. Thus, the velar column covers the entire range between the velar and laryngeal zones:

(vii)	<i>m</i>	<i>n</i>		<i>ng</i>
	<i>p</i>	<i>t</i>	<i>ts</i>	<i>k</i>
	<i>b</i>	<i>d</i>	<i>dz</i>	<i>g</i>
	<i>f</i>	<i>lh</i>	<i>s</i>	<i>x</i>
	<i>w</i>	<i>l</i>	<i>z</i>	<i>q</i>
				<i>h</i>

The diachronic origins of the segments *x q h* are particularly diversified. Perhaps most interestingly, the weak continuant *q* is the regular reflex of what seems to have been originally a labial or labiovelar glide (*w*), as in *qa* 'fox' (*wa*). A labio-velar pronunciation [ɣw] is still possible, but it never contrasts with the normal velar or uvular realizations. The segment *x*, like its labial counterpart *f*, is clearly a secondary marginal phoneme, first introduced in Chinese (and Mongol) loanwords, as in *xi* 'shoes' (*he*, from the local Chinese counterpart of regular Mandarin *xie*), *xaba* 'dog' (*ha-pa* or *hva-pa*, from local Chinese). The segment is, however, today fully nativized and occurs also in indigenous words, especially in items of descriptive or affective vocabulary, such as *xangxang* 'proudly' (*hang-hang*), *xami* 'impossible' (*ha-med*).

It has to be noted that bilingual speakers identify the velar fricative of local Qinghai Mandarin with the Amdo phoneme *x*, while the corresponding consonant of regular Mandarin is felt to be identical with *h*. At the orthographical level, both consonants are represented by the same letter (**h**), which basically stands for the original laryngeal continuant, as in *hani* 'all' (**ha-ne**). The modern phoneme *h* represents, however, also the spirantized and laryngealized reflex of the original aspirated labial stop (**ph**), as in *hama* 'parents' (**pha-ma**),

3. MEDIALS

Apart from the consonants listed above, there are several other segments which can occupy the initial slot in a syllable. The two of these segments that may be regarded as more basic than the others are the retroflex vibrant *r* [r] and the palatal spirant *y* [j], as in *ra* 'also' (**ra**) vs. *ya* 'all right' (**ya**). Although syntagmatically reminiscent of the other consonants, these segments have certain peculiarities which make it necessary to treat them in a separate context. Most importantly, their places of articulation do not correspond to those already established for the other basic consonants. We therefore have to place them in two additional columns (retroflex vs. palatal).

The segments *r y* do, however, share an important property with *h* in that they also remain outside of the strength correlation. It is therefore reasonable to treat all of these consonants as a uniform series of glides:

(viii)	<i>m</i>	<i>n</i>	<i>ng</i>
	<i>p</i>	<i>t</i> <i>ts</i>	<i>k</i>
	<i>b</i>	<i>d</i> <i>dz</i>	<i>g</i>
	<i>f</i>	<i>lh</i> <i>s</i>	<i>x</i>
	<i>w</i>	<i>l</i> <i>z</i>	<i>q</i>
		<i>r</i> <i>y</i>	<i>h</i>

A possible counterargument against this interpretation could be that segments sharing the phonetic properties of *r* and *l* are in many languages known to belong to a natural class of liquids. This is, however, not the case in the system examined here, for there are no paradigmatic or syntagmatic properties that would specifically unite *r* and *l* into a single category. We might say that, from the functional point of view, this system has no liquids at all, for the lateral *l* (like its voiceless counterpart *lh*) functions as an obstruent, while the vibrant *r* may be classified together with *y* and *h*.

It happens that the identification of *r* and *y* as glides correlates well with diachronic facts, which show that the corresponding segments once had the syntagmatic peculiarity of being able to function as medials (Beyer 1992: 81-86).

There is, indeed, a clear functional connection between the syntagmatic category of medials and the paradigmatic class of glides. Diachronically this connection may also have been relevant to the laryngeal spirant *h* (in the aspirated consonants).

We must therefore ask whether the segments *r y* (as well as, possibly, *h*) might still have the role of medials in the synchronic syllable. For several reasons, the answer is negative. Most importantly, true medials should be able to follow basically any type of initial consonant, as is the case in Written Tibetan. In the modern synchronic system, however, the distinctions associated with the diachronic medials are present in only two columns, which correspond to the places of articulation of the segments *r y*. It must be concluded that at the synchronic level there are no medials. Instead, there are separate columns of palatal and retroflex phonemes.

In the palatal column, in addition to *y*, there are five consonants, which may be written by the basic letters *c j* and the digraphs *ny sh zh*:

(ix)	<i>m</i>	<i>n</i>		<i>ny</i>	<i>ng</i>
	<i>p</i>	<i>t</i>	<i>ts</i>	<i>c</i>	<i>k</i>
	<i>b</i>	<i>d</i>	<i>dz</i>	<i>j</i>	<i>g</i>
	<i>f</i>	<i>lh</i>	<i>s</i>	<i>sh</i>	<i>x</i>
	<i>w</i>	<i>l</i>	<i>z</i>	<i>zh</i>	<i>q</i>
				<i>r</i>	<i>y</i> <i>h</i>

The palatal nasal *ny* [ɲ] completes the nasal series by adding a fourth distinctive place of articulation. In the same way, the segments *c j sh zh* form a distinctively palatal set of obstruents, organized in accordance with the four series of strong and weak stops and continuants, as established for the other columns. Since palatalness is the basic feature involved, the palatal obstruents are, in principle, free to vacillate between sibilant and non-sibilant realizations. The presence of a clear sibilant friction is, however, the normal case, and we may therefore speak of palatal sibilants, affricates in the case of *c j* and continuants in the case of *sh zh*.

The phonetic oppositions between the palatal obstruents incorporate the feature of aspiration, which distinguishes the strong (aspirated) segments *c sh* [tɕ^h ɕ^h] from the corresponding weak (unaspirated) segments *j zh* [tɕ ɕ]. The aspiration following the palatal sibilants, especially the continuant *sh*, tends, however, to disappear in the sibilant friction, rendering the auditive difference between the two continuants *sh zh* confusingly small. To some extent, the difference is supported by the articulatory tenseness of the weak continuant *zh*, as was also noted for the corresponding dental segment *z*. On the other hand, at a more normative level of pronunciation there is a tendency to reduce the sibilant friction of the strong palatal continuant *sh*, yielding a sound that may be described as a non-sibilant palato-velar fricative [ʃ].

The diversity of the diachronic sources of the palatal consonants is reflected by the fact that their orthographical correlates include both simple palatals and sequences of a non-palatal consonant plus a palatal medial. For instance, the nasal *ny* can represent both the orthographical palatal nasal (**ny**) and the labial nasal followed by an original palatal medial (**my**), as in *nya* 'fish' (**nya**), *nye* 'man, person' (**mi** or **myi**). The affricates incorporate both palatal and velar sources, with the distinction between the strong affricate *c* (**ch** & **khy**) and the weak affricate *j* (**c** & **j** & **ky** & **gy**) following the lines established for the other stops, as can be seen from examples like *ca* 'pair' (**cha**) vs. *ja* 'tea' (**ja**), *cu* 'you' (**khyod**) vs. *ju* 'dispute' (**kyod**).

Due to their general spirantization, the labial stops in combination with a palatal medial yield synchronically the same result as the orthographical palatal sibilants, as in *zhanyi* 'lead' (**zha-nye**), *zhawa* 'work' (**bya-ba**). Importantly, however, the modern weak palatal sibilant *zh* represents not only the corresponding diachronic and orthographical unaspirated segments and sequences (**zh** & **by** & **py**), but also the sequence of an aspirated labial stop and a palatal medial (**phy**), as in *zhuq* 'direction' (**phyogs**). The synchronic strong segment *sh* can therefore only correspond to the orthographical palatal sibilant (**sh**), as in *sha* 'meat' (**sha**).

Compared with the palatal column, the retroflex column is less complete, comprising only three segments in addition to *r*. The three segments concerned may perhaps best be written by the digraphs *tr dr sr*:

(x)	<i>m</i>	<i>n</i>		<i>ny</i>	<i>ng</i>
	<i>p</i>	<i>t</i>	<i>ts</i>	<i>tr</i>	<i>c</i>
	<i>b</i>	<i>d</i>	<i>dz</i>	<i>dr</i>	<i>j</i>
	<i>f</i>	<i>lh</i>	<i>s</i>	<i>sr</i>	<i>sh</i>
	<i>w</i>	<i>l</i>	<i>z</i>	<i>zh</i>	<i>q</i>
			<i>r</i>	<i>y</i>	<i>h</i>

All of the segments *tr dr sr* are obstruents, corresponding to the series of strong and weak stops as well as strong continuants, as established for the other columns. Like their palatal counterparts, the retroflex obstruents tend to be realized with a sibilant friction, and we may therefore also speak of retroflex sibilants, affricates in the case of *tr dr* and a continuant in the case of *sr*.

The retroflex affricates *tr dr* are phonetically distinguished from each other by the aspiration of the strong segment *tr* [tʂ^h], as opposed to the unaspirated weak segment *dr* [tʂ]. The strong retroflex sibilant continuant *sr* is also aspirated [ʂ^h] in very much the same way as the segments *s sh*. Although the absence of a corresponding weak segment of the type *zr** renders the aspiration functionally superfluous, there is no doubt that the single retroflex continuant does belong to the strong series. Assuming that subsystemic diversification is greater in unmarked than

in marked sections of the paradigm, this may be seen as a further argument in favour of the claim that it is the strong obstruents that are phonologically unmarked in the synchronic system.

The basic diachronic feature of the retroflex consonants is that they presuppose a source containing an original retroflex medial, which is also present at the orthographical level, as in *triq* 'woolen cloth' (**phrug**), *driq* 'six' (**drug**), *sramu* 'hard' (**sra-mo**). In the case of lexical items of restricted dialectal distribution the orthographical medial (especially in the sequence **hr**) can also be regarded as a mere secondary device to write the retroflex consonants, as in *sra* 'good' (**hra** or **sra**). It should also be noted that in loanwords the retroflex consonants function as the natural substitutes for their Chinese counterparts, as in *drunggu* 'China' (**krung-go**, Chinese *zhongguo*).

Although Amdo dialects have occasionally been described as having no distinction between the palatal and retroflex columns, there seems to be no reason to doubt the reality of the distinction. It is true, there are some environments, notably sequences involving original velar initials, which historically favour the palatal consonants at the expense of their retroflex counterparts, as in *caq* 'blood' (**khrag** or **khyag**), *ju* 'wheat' (**gro** or **gyo**). It cannot be ruled out that the retroflex consonants are more frequent in literary words and reading pronunciations than in actual dialectal data. Nevertheless, the retroflex consonants remain synchronically distinctive, and their presence inevitably influences the phonetic realizations of several other consonants.

From the synchronic point of view, the most interesting peculiarity of the retroflex column is the gap in the place of the weak continuant *zr**. It could be expected that this gap would tend to be filled by the retroflex vibrant *r*, which occupies an adjacent position in the system. Phonetically this would mean the devoicing and devibrating of *r*, with an additional development of sibilant friction. While it is possible that this restructuring is going on in some close-lying dialects (Roerich 1958: 27), it is not a mainstream feature of the dialect under investigation. Therefore, it is motivated to continue to classify *r* as a glide, rather than as the weak counterpart of *sr*.

4. FINALS

The final position is characterized by a drastic reduction of consonantal distinctions, as compared with the initial position. We may therefore view the system of finals as an example of a minimal paradigm, in which only a small selection of the segments contained in the maximal paradigm are used. In the above analysis of the maximal paradigm we have established altogether 30 consonant phonemes. The question is now how many, and which, of these consonants can also occupy the final position.

In order to make a correct assessment of the system of finals, it is even more important than for the initials to distinguish between the regional, or normative, and the local, or dialectal, level of speech. Most speakers of the dialect have some knowledge of the regional norm, often supported by reading pronunciations, and it is not too difficult for them to incorporate selected regional phonotactic patterns into their dialectal speech. The finals are exactly one of those aspects of phonotaxis for which the regional patterns can easily coexist with the local ones.

The diachronic and orthographical finals include the three basic nasals (**m n ng**), the corresponding voiced (in this position unmarked) stops (**b d g**), and three continuants (**s l r**). With the exception of the sibilant continuant (*s*), these finals have a segmental value also in the modern regional norm. In the case of the nasals *m n ng*, the dental obstruent (lateral) *l*, and the retroflex glide *r*, the modern finals can be safely identified with the corresponding members of the maximal paradigm. It is true, in final position these segments tend to be pronounced rather weakly, without any perceptible phase of release, and, in the case of *r*, without vibration.

The segmental identification of the modern reflexes of the three final obstruents (**b d g**) is somewhat less automatic. However, the most common segmental pronunciations of these consonants may be described as a voiced dentilabial fricative [v], a voiceless and unexplosive dental stop [t], and a voiced uvular fricative [ɣ]. These realizations would strongly suggest a direct connection with the phonemes *w d q* of the maximal paradigm. Among these, the segments *w q* belong to the same series of weak continuant obstruents in which the segment *l* is also located.

We may then present the regional system of finals by eliminating from the maximal paradigm all those segments that are not attested in final position. This leaves us a minimal paradigm of eight final consonants:

(xi)	<i>m</i>	<i>n</i>	<i>ng</i>
		<i>d</i>	
	<i>w</i>	<i>l</i>	<i>q</i>
		<i>r</i>	

There are two paradigmatic problems in this system. On the one hand, it may be asked whether the retroflex *r*, at least in this particular minimal paradigm, would not better be placed together with *w l q* in the series of weak continuant obstruents. On the other hand, the status of *d* as the only stop obstruent in the system raises the question whether the segments interpreted as *w q* should not, after all, also be considered as positionally conditioned realizations of the corresponding weak stops *b g*, which, by paradigmatic considerations, could be regarded as less marked than the continuants. This would yield a diachronically more archaic-looking system of three nasals, three stops, and two sonorants (or even liquids).

There is, indeed, no doubt that the regional system of finals contains a potential for reinterpretation and restructuring, as is also confirmed by dialectal data. It is, for instance, well known that in many Amdo dialects the final segments *d l* merge into what is phonetically a slightly palatalized lateral consonant (Roerich 1958: 26). In the dialect under investigation, however, the changes have been more substantial, in that the segments *d l* have been completely lost. The same is true of the segments *w r*, while the segment *m* has merged with *n*. After these developments, the system of finals has come to contain only three segments, which may be identified as *n ng q*:

(xii)	<i>n</i>	<i>ng</i>
		<i>q</i>

This is the actual situation at the local level of speech. In other words, for those speakers of the dialect who also master the regional norm there exist two parallel systems of finals. In normal dialectal speech the more reduced system with only three distinct final consonants is used, but for specific purposes the regional system of eight final consonants can also be applied. To see how, exactly, the coexistence of the two systems is manifested in the language of different speakers would require a comprehensive sociolinguistic study of the whole dialectal community.

The relationship between the local and regional systems of finals may be illustrated as follows: local *lan* vs. regional *lam* 'road' (**lam**), local & regional *lan* 'answer' (**lan**), local & regional *kang* 'snow' (**khangs**), local *ne* vs. regional *new* 'west' (**nub**), local *wu* vs. regional *wud* 'Tibet' (**bod**), local *yu* vs. regional *yul* 'curtain' (**yol**), local *nu* vs. regional *nur* 'cattle' (**nor**), local & regional *yuq* 'under' (**yog**).

5. PREINITIALS

The preinitials form a close parallel to the finals in several respects. Most importantly, the system of preinitials also constitutes a minimal paradigm, in which only a limited number of distinctions can be made. Also, the preinitials follow two separate phonotactic patterns, one of which can be identified as regional and the other as local. Moreover, as in the case of finals, the local system of preinitials is even more reduced than the regional one.

At a more specific level, the actual selection of segments diachronically and orthographically functioning as preinitials is almost identical with the system of finals. Among the original preinitials we therefore find the labial nasal (**m**) and the corresponding voiced stop (**b**), as well as the same three continuants (**s r l**) as are also attested for the final position. The only significant difference with regard to the finals is that the preinitials show no distinction between dental and velar stops and

nasals. Instead, there is a neutralized archiphonemic nasal, orthographically written by a special letter (**v** or **va-chung**), and an analogous stop, written by two different letters in complementary distribution (**d g**).

We may thus start from the postulation of a system of seven preinitials, and it is no wonder that this seems to be the number of preinitial segments that can be distinguished in very carefully articulated reading pronunciations. Five of these segments can relatively unambiguously be identified with the phonemes *m w s r l* of the maximal paradigm. The preinitial realizations of these consonants are not substantially different from those established for the other positions. It may be noted, however, that the retroflex vibrant *r* as a preinitial tends to be pronounced as voiceless [ɾ], while *s* often has realizations which fall into the range of the retroflex and palatal zones.

The two remaining preinitials, which represent the neutralized oppositions between dentals and velars, are more difficult to identify phonemically. In view of the analogy provided by the system of finals it is, however, tempting to relate them to the phonemes *ng q* of the velar column. Assuming that this is the correct solution, we get the following system of seven preinitials:

(xiii)	<i>m</i>		<i>ng</i>
		<i>s</i>	
	<i>w</i>	<i>l</i>	<i>q</i>
		<i>r</i>	

This is again a system with obvious paradigmatic tensions. Even if the two segments *s r* may, from the point of view of the actual distinctions, be regarded as belonging to the same series of continuants as *w l q*, the segments *l s r*, located between the labial and velar columns, are nevertheless exceptional in that they have no nasal counterpart. Not surprisingly, Amdo dialects have widely eliminated these segments from the system, first by neutralizing them into a single voiceless segment (probably best phonemized as *r*), and then by letting this segment merge with *q*. The resulting system of four preinitials is what we might perhaps best identify with the modern regional level of speech:

(xiv)	<i>m</i>	<i>ng</i>
	<i>w</i>	<i>q</i>

However, the dialect under investigation, like many other Amdo dialects, has gone even further, in that it has also lost the distinction between the two labial preinitials *m w*, on the one hand, and the corresponding velars *ng q*, on the other. After these mergers there remain only two preinitials, which may be classified as a maximally neutralized nasal and a maximally neutralized non-nasal, or obstruent, respectively.

We could, in principle, continue to identify these segments as *ng q*, but for several reasons we will adopt a different notation and write *v h* instead:

(xv) *v*
h

In this notation, the segment *v*, apart from its correlation with the orthographical (and Romanized) representation of Tibetan, signals the fact that the nasal preinitial is not strictly speaking identical with any one of the nasal phonemes of the maximal paradigm. On the non-nasal side there is no similar need to adopt an entirely new symbol for the preinitial, for it is motivated to regard the laryngeal glide *h* as the least marked segment of the paradigm. As a glide, *h* is unspecified for the parameter of strength, and it is presumably also unmarked for the features which distinguish the other glides *r* (retroflex) and *y* (palatal). Probably for these reasons, the interpretation of the non-nasal preinitial as *h* has already some support (as in Hua & Long 1993).

Irrespective of whether we write *v h* or something else, the phonetic properties of these two preinitials are of no immediate value for their phonemic identification. The nasal preinitial *v* is typically pronounced as a nasal segment which adapts to the place of articulation of the following initial. The non-nasal preinitial *h*, on the other hand, tends to be realized as a velar to laryngeal spirant which can be either voiced or voiceless depending on the phonological class of the initial. At the same time, the phonetic realization of the initial can also be influenced by the preinitial. In fact, the duration of both preinitials is often so short that the principal auditive clue to their presence is the quality of the initial.

It has to be noted that the selection of initials that can be combined with preinitials is more limited than the regular initial paradigm. To start with the fully neutralized nasal preinitial *v*, it can only be followed by segments representing a single series of stops. In combination with a nasal preinitial, these stops are realized as fully voiced [b d dz dẓ dz̥ g], but there is no doubt that they still represent the weak stops *b d dz dr j g* of the maximal paradigm. We could perhaps say that the weak stops are latently voiced, and that this voicedness is manifested under the special conditions created by the presence of a nasal preinitial.

It may be concluded that the complete system of initial clusters containing a nasal preinitial at the local level of speech consists of six sequences, in accordance with the six columns of the maximal paradigm:

(xvi) *vb* *vd* *vdz* *vdr* *vj* *vg*

These six sequences may be illustrated by *vbe* 'bug' (**vbu**), *vde* 'this' (**vdi**), *vdza* [name of the letter] (**dz**), *vdre* 'to ask' (**vdri**), *vju* 'to go' (**vgro** or

vgyo), *vga* 'some' (**vgav**). At the regional level, an additional distinction exists between the labial and non-labial nasal preinitials in combination with initials of all but the labial column, as in local *vda* vs. regional *mda* 'arrow' (**mdav**), local *vdzu* vs. regional *mdzu* 'hybrid bull' (**mdzo**), local *vdrunbu* vs. regional *mdrunbu* 'guest' (**mgron-bo**), local *vjuq* vs. regional *mjuq* 'fast' (**mgyogs**), local *vgu* vs. regional *mgu* 'head' (**mgo**).

In all of the above examples, the diachronic and orthographical segments corresponding to the modern initials belong to the series of voiced stops, including affricates (**b d dz j g**). The nasal preinitials were originally also allowed to occur in combination with the voiceless aspirated initials (**ph th tsh ch kh**). However, in these cases the preinitials have been regularly lost, with a possible reservation for reading pronunciations, as in *tsu* vs. reading pronunciation *mtsu* 'lake' (**mtsho**). The most interesting consequence of the loss of the preinitial is the appearance of the strong labial stop *p* in initial position in examples of the type *pang* 'spindle' (**vphang**), where the preinitial has prevented the spirantization of the labial stop. This is an important native source for initial *p*.

In the diachronic system, as still reflected by the orthographical rules, the labial preinitial (**m**) was also able to occur in combination with non-labial nasal initials (**n ny ng**). In these cases the loss of the preinitial may again be regarded as the regular development, as in *na* 'oath' (**mnav**) & 'to be ill' (**na**).

Compared with the nasal preinitial *v*, the fully neutralized non-nasal preinitial *h* has a considerably wider synchronic distribution. It is immediately possible to register the following initial clusters, in which *h* precedes not only the series of weak stops, but also the strong stops and the nasals, as well as, less systematically, some of the weak continuants and even a glide:

(xvii)	<i>hm</i>	<i>hn</i>	<i>hny</i>	<i>hng</i>	
	<i>hp</i>	<i>ht</i>	<i>hts</i>	<i>htr</i>	<i>hc</i> <i>hk</i>
	<i>hb</i>	<i>hd</i>	<i>hdz</i>	<i>hdr</i>	<i>hj</i> <i>hg</i>
		<i>hl</i>	<i>hz</i>	<i>hzh</i>	
				<i>hy</i>	

In combination with the nasal initials the preinitial *h* is normally realized as a voiceless laryngeal spirant, and also the nasals themselves can become slightly devoiced, as in *hma* 'low' (**dmav**), *hna* 'ear' (**rna**) & 'nose' (**sna**) & 'formerly' (**gnav**), *hnyan* [variety of] 'wild sheep' (**gnyan**), *hnga* 'five' (**lnga**). On the other hand, the dental continuant *l*, which contrasts with its distinctively voiceless counterpart *lh*, is not devoiced when preceded by *h*, as in *hla* 'musk deer' (**gla**). The same is true of the palatal glide *y*, as in *hyaq* 'yak bull' (**gyag**), which, if devoiced, would apparently come too close to the realizations of the palatal continuants *sh zh*. In fact, the initial clusters *hl hy* are often realized with a non-

phonemic vowel element [həl həj], which marks the segmental boundary and prevents any contact assimilation.

Like their nasal counterparts, both the fully neutralized non-nasal preinitial *h* and the regionally occurring labial obstruent preinitial *w* provide an environment for the voiced realization of initial weak stops. Relevant examples include local & regional *hbangma* 'distillated grain' (**sbang-ma**), local *hden* vs. regional *wden* 'seven' (**bdun**), local & regional *hdu* 'stone' (**rdo**), local & regional *hdza* 'rock' (**rdza**), local & regional *hdra* 'enemy' (**dgra**) & 'sound' (**sgra**), local & regional *hja* 'Chinese' (**rgya**) & 'hundred' (**brgya**), local & regional *hge* 'nine' (**dgu**). An idiosyncratic correspondence is involved in local *hdza* vs. regional *hda* 'moon, month' (**zla**).

The combinatory behaviour of the weak stops is shared by the weak sibilant continuants *z zh*, which, after a non-nasal preinitial, are realized as fully voiced [z ʒ], as in local *hze* vs. regional *wze* 'drunk' (**bzi**), local *hzhe* vs. regional *wzhe* 'four' (**bzhi**). This is the only context in which the latent voicedness of these segments is manifested, for their status as continuants excludes them from the list of segments (weak stops) possible after a nasal preinitial.

A non-nasal preinitial can, however, also be followed by any one of the strong stops, as in *hpa* 'mugwort' (**spa**), *hta* 'horse' (**rta**), *htsu* 'important' (**gtso**), *htre* 'beestings' (**spri**), *hca* 'hair [on the head]' (**skra** or **skya**), *hka* 'difficult' (**dkav**). In this position the strong stops are pronounced without the aspiration otherwise typical of them in initial position. In other words, the normal opposition between voiceless aspirated (strong) vs. voiceless unaspirated (weak) stops is phonetically transformed into an opposition between voiceless unaspirated (strong) vs. voiced (weak) stops. Although the segmental realizations of the weak stops without a preinitial and the strong stops with a preinitial are more or less identical, each position shows a correlation between only two series of stops, implying that the phonetic variation is phonologically irrelevant.

There remain four segments of the maximal paradigm, whose occurrence in initial clusters has not yet been discussed. These are the glides *r h* and the weak continuants *w q*. As far as the two glides are concerned, they, unlike the third glide *y*, seem to be unable to occur after a preinitial. This phonotactic restriction has its historical reasons, which are still valid for the modern language. The occurrence of the continuants *w q* in initial clusters is, however, a more complicated issue, which needs to be examined in some detail.

When we analyze the synchronic data we do, in fact, find an element that may be recognized as the cluster *hq*. Most of the relevant examples come from cases which originally involve a neutralized obstruent preinitial (**d**) in combination with the strong labial stop (**p**), as in *hqa* 'brave' (**dpav**), *hqi* 'example' (**dpe**), *hqun* 'leader' (**dpon**). The basic realization of the cluster *hq* seems to be a long velar fricative [xx], but in the position before an unrounded vowel it can also be pro-

nounced as a velar fricative followed by an asyllabic rounded vowel [xw]. The two pronunciations are basically in free variation, though there may be idiolectal preferences for one or the other variety. The important thing is that the cluster *hq*, irrespective of how it is actually realized, contrasts with all other initial clusters as well as single phonemes, including the segments *x q h*.

For the sake of comparison, it is illustrative to study the modern reflexes of the corresponding initial cluster with an original weak labial stop (**db**). In this case, no synchronic preinitial is present, but the whole cluster has merged with the original labial glide (**w**) to yield the modern weak velar or labiovelar continuant *q*, as in *qang* 'power' (**dbang**), *qe* 'head' [honorific] (**dbu**). In fact, the presence of the segment *q* in the cluster *hq* explains the phonetic parallelism with *q*, in that both *q* and *hq* have an alternative labiovelar realization. When the labial element is not present, the two components of the cluster *hq* automatically merge into a more or less uniform velar sound, but even in this case the bisegmental composition of the cluster is suggested by its quantitative properties.

Unfortunately, the above analysis is slightly complicated by the fact that the variation between the velar and labiovelar realizations of *hq* may not always be completely facultative. There seem to exist lexical items, especially Chinese loanwords, which are invariably pronounced with an initial labiovelar sound. If this is so, we have to separate the two pronunciations at the phonological level. A good candidate for the phonological identity of the labiovelar pronunciation would then be *hw*, which is otherwise not registered as an initial cluster. For some idiolects, at least, we may therefore postulate a potential opposition between *hq* vs. *hw*, as in *hqa* 'brave' (**dpav**) vs. *hwa* 'picture' (**dpav**, Chinese *hua*). For individuals who pronounce such word pairs with no phonetic contrast, the correct phonemization would invariably be with *hq*.

With the above additions, the complete system of initial clusters with the neutralized non-nasal preinitial will be as follows:

(xviii)	<i>hm</i>	<i>hn</i>	<i>hny</i>	<i>hng</i>	
	<i>hp</i>	<i>ht</i>	<i>hts</i>	<i>htr</i>	<i>hc</i> <i>hk</i>
	<i>hb</i>	<i>hd</i>	<i>hdz</i>	<i>hdr</i>	<i>hj</i> <i>hg</i>
	<i>hw</i>	<i>hl</i>	<i>hz</i>	<i>hzh</i>	<i>hq</i>
				<i>hy</i>	

It cannot, however, be ruled out that the cluster written above as *hw* should be analyzed differently. The phonetic realization of what would seem to be the preinitial *h* in this cluster is actually close to the quality of the strong velar continuant *x*, which, on the other hand, is rather different from the quality normally characteristic of the preinitial *h*. Supposing that this phonetic difference is phonologically diagnostic, we might then have to reinterpret the cluster not as *hw* but as *xw*. The

latter is not an initial cluster but a monophonemic entity best described as a labiovelar fricative. Since there probably never can be a contrast between the cluster *hw* and the segment *xw*, the choice between the two interpretations can only be made on the basis of structural considerations.

Obviously, the labiovelar interpretation would be most appropriate for an idiom which would also have other phonemes in the labiovelar column. This may actually be the case in at least some idiolects belonging to the dialect under investigation, for the weak labiovelar stop *gw* is possible as an alternative pronunciation of the simple velar *g* in cases originally containing a labial obstruent preinitial followed by a voiceless velar stop (**bk**), as in *ga* or *gwa* 'order' (**bkav**). The same alternation is also attested in Chinese loanwords, as in *ga* or *gwa* 'melon' (**kwa**). There seem to be no examples of the corresponding strong labiovelar *kw**, but a labiovelar *qw* might be present idiolectally, assuming that the facultative variation between the velar and labiovelar pronunciations of the weak continuant *q* has led to a phonemic split between the velar *q* and a corresponding labiovelar. If this were the case, we would have to expand the maximal paradigm with as many as three labiovelar phonemes:

(xix)	<i>m</i>	<i>n</i>			<i>ny</i>	<i>ng</i>	
	<i>p</i>	<i>t</i>	<i>ts</i>	<i>tr</i>	<i>c</i>	<i>k</i>	
	<i>b</i>	<i>d</i>	<i>dz</i>	<i>dr</i>	<i>j</i>	<i>g</i>	<i>gw</i>
	<i>f</i>	<i>lh</i>	<i>s</i>	<i>sr</i>	<i>sh</i>	<i>x</i>	<i>xw</i>
	<i>w</i>	<i>l</i>	<i>z</i>		<i>zh</i>	<i>q</i>	<i>qw</i>
				<i>r</i>	<i>y</i>	<i>h</i>	

Under any circumstances, the labiovelars may apparently be classified as marginal phonemes, for their phonological load is close to zero even in such forms of speech that may possess them. It may also be taken for certain that there exist idiolects which completely lack both the labiovelars and the distinct initial cluster *hw*. In such idiolects, labiovelar pronunciation remains a mere facultative characteristic of the segment *q* and the cluster *hq*.

While the above remarks seem to have exhausted the synchronic description of both initials and preinitials, the diachrony of initial clusters offers several additional problems to be solved. Any adequate treatment of these problems would require a systematic interdialectal analysis of the relevant material. For the time being, it may be said that the dialect under investigation is rather exceptional as compared with its immediate neighbours, in that it retains the initial clusters *hp hb* in the synchronic system. In most other close-lying dialects, these clusters have merged with the counterparts of the segments *w q* *xw* and the clusters *hw hq*. In many cases, the interdialectal variation extends to the level of the individual lexical items, suggesting a complex pattern of dialectal mixing in the past.

On the more regular side, we may note a combinatory development connected with the sibilant continuants. Diachronically and orthographically, it is possible to combine not only the weak sibilant continuants (**z zh**) but also their strong counterparts (**s sh**) with an obstruent preinitial (**b g**). The resulting clusters (**bs gs bsh gsh**) do not retain the preinitials at the synchronic level. Instead, the preinitials are reflected by the transformation of the strong initials into the corresponding weak segments, as in *zang* 'incense offering' (**bsang**), *zen* 'three' (**gsum**), *zha* 'to slaughter' (**bshav**), *zhaq* 'to split' (**gshag**).

A special development is also observed in the modern representation of the original cluster containing a voiced labial stop initial (**b**) preceded by the neutralized obstruent preinitial (**d**) and followed by the palatal medial (**y**). This cluster (**dby**) yields the somewhat unexpected synchronic result *hy*, as in *hye* 'lynx' (**dbyi**). The similar cluster with the strong labial stop (**dpy**) has the modern value *zh*, as in *zhe* 'hip' (**dpyi**). It is obvious that the diachronic evolution of the simple labial stops (**b & p** vs. **ph**), and their combinations with a medial (**by & py & phy**), a preinitial (**db** vs. **dp**), or both (**dby** vs. **dpy**), cannot be summarized by any simple set of symmetric rules. The clusters containing a sibilant preinitial and the palatal medial (**sby** vs. **spy**) are, however, more regular and yield *hj* vs. *hc*, as in *hjang* 'to study' (**sbyang**), *hce* 'together' (**spyi**).

To complete the description of the preinitials we still have to touch upon the general status of the initial clusters composed of a preinitial plus a weak obstruent. To limit the discussion to the two fully neutralized preinitials, there are altogether twelve such clusters, six with the nasal preinitial *v* and six more with the non-nasal preinitial *h*. The principal auditive signal of the presence of the preinitial in these cases is not the preinitial itself, brief as it is, but the fully voiced realization of the initial. In some descriptions of Amdo dialects (as in Roerich 1958: 27) it is assumed that the initial in these cases has actually been lost altogether. This would mean that the voiced obstruents would have to be recognized as separate members of the maximal paradigm, in which they would contrast with both the strong (aspirated) and the weak (voiceless unaspirated) obstruents.

In the actual dialect described here, and probably also in many other Amdo dialects, there are, however, good reasons to continue to operate with synchronic preinitials. The presence of the non-nasal preinitial *h* is a generally acknowledged fact in the position before nasals and strong stops, as well as the segments *l y* (and *w*, with a reservation concerning the status of the cluster *hw*). It is only natural to assume that this preinitial can also occur before the weak obstruents, in which position it conditions their voiced realization. Even if the preinitial were completely lost as a phonetic segment, it might be wise to analyze the distinct voiced obstruents as sequences containing a preinitial.

The situation is slightly different with the nasal preinitial *v*, which synchronically occurs in combination with the weak stops only. In the absence of any other

combinations, we could, in principle, interpret the initial clusters with the nasal preinitial as a separate series of monophonemic prenasalized stops. This would complicate the maximal paradigm, but at the same time it would simplify the system of initial clusters. One of the possible motivations for a biphonemic analysis is that the synchronic paradigm of initial consonants in Amdo is already fairly extensive even without the incorporation of yet another series of stops. Also, the undisputed segmental status of the non-nasal preinitial *h* provides a phonotactic framework into which the nasal preinitial can easily be incorporated.

While we, consequently, have to recognize two separate preinitials in the dialect under investigation, it remains a serious possibility that some other dialects may have neutralized the distinction between the two kinds of preinitial. In such dialects, it would be the nasalized preinitial that would have lost its separate identity and merged into its non-nasal counterpart. However, we would still have initial clusters containing a preinitial whose main realization would involve consonantal preaspiration. Only in a more distant future could we then discern the possibility that even this single remaining preinitial might be lost. This would inevitably lead to the restructuring of the whole consonant system, but it is still much too early to predict what changes, exactly, would take place.

6. VOWELS

In view of the complexity of the consonant system, it is not surprising that the vowel paradigm is rather simple. It basically comprises only four segments, which may be denoted by the letters *a e i u*, as in *ca* 'pair' (**cha**) vs. *ce* 'what' (**ci** or **chi**) & 'water' (**chu**) vs. *ci* 'big' (**che**) vs. *cu* 'you' (**khyod**). The canonic realizations of these segments may be described by the cardinal values of the low unrounded back to central vowel [ɑ a], the mid-high unrounded central vowel [ə], the high unrounded front vowel [i], and the high rounded back vowel [u], respectively. The high vowels *i u* are, however, often realized with a somewhat lowered as well as, in the case of *i*, retracted tongue position, giving them a slightly centralized, or lax, quality [ɪ ʊ]. This has led to some confusion concerning their status in earlier descriptions of Amdo phonology.

There are several possible ways to arrange the four vowels into a phonological chart. The two main alternatives are a quadrangle (with each of the segments *a e i u* occupying a corner position) and a triangle (with the segments *a i u* at the corners). For several reasons, the triangle model seems to correspond better to the facts and may be taken as a basis for the description of the vowel system:

(xx)

<i>i</i>	<i>u</i>
	<i>e</i>
	<i>a</i>

One of the arguments favouring the triangle model is the phonetic fact that the vowels *a e* are clearly distinguished by tongue height, while the vowels *i u* differ in terms of their relationship to lip rounding. To give an external point of comparison, it may also be noted that the vowels *a e* are phonetically similar to the corresponding Chinese (pinyin) vowels.

The diachronic background of the four vowels can be easily seen from their orthographical representation. Thus, the vowel *a* (**a**) retains its original position in the system, while the vowels *i u* represent the original mid-high vowels (**e o**). In these cases, which mark the corners of the vowel triangle, the original distinctions are preserved intact. The vowel *e*, however, is the result of the neutralization of the two original high vowels (**i & u**), as can be seen from homophonic pairs like, for instance, *ce* 'dog' (**khyi**) & 'group' (**khyu**). It may be presumed that the merger of the high vowels was the result of a primary process of qualitative reduction. At the same time, the original mid-high vowels were drawn to higher positions to take up the upper corners of the vowel triangle.

The system of four vowels is, in principle, valid for syllables both with and without a final. This is, however, true only of the regional pronunciation, which retains the segmental identity of the original finals. At the local level, the full paradigm can be illustrated by syllables containing the final *n* (**n & m**), as in *lan* 'answer' (**lan**), *men* 'no' (**min**) & 'dark' (**mun**), *lin* 'to take' (**len**), *yun* 'payment' (**yon**). With one important exception, the vowels are in these cases pronounced with more or less the same values as in syllables without a final. The exception concerns the realization of the low vowel *a*, which before a final assumes a fronted and raised position [ɛ e].

The allophonic behaviour of *a* is of no phonological consequence as long as the finals are preserved. However, when the finals are dropped, the allophone conditioned by them becomes a distinct phoneme. This is exactly what has happened at the local level of speech. The new phoneme is clearly a front vowel, and, in view of its connection with *a*, we shall write it as *ä* (*a* Umlaut). The question is how the addition of this vowel affects the general structure of the vowel paradigm. There are again two alternatives, based on the quadrangle and triangle models. In the quadrangle model, *ä* would be classified as a low vowel, while in the triangle model it would be located at the mid-high level. In view of both phonetic and paradigmatic criteria, we opt for the triangle model:

(xxi)	<i>i</i>	<i>u</i>
	<i>ä</i>	<i>e</i>
	<i>a</i>	

There are, as a matter of fact, only three finals which, when dropped, can lead to the appearance of *ä*. These finals are those represented at the regional level by

w d r, as in local *kä* vs. regional *kaw* ‘needle’ (**khab**), local *hjä* vs. regional *hjad* ‘eight’ (**brgyad**), local *mä* vs. regional *mar* ‘butter’ (**mar**). A fourth final that could come into question is *l*, but it happens that *l* normally leaves the quality of the vowel *a* intact even when it is dropped, as in local *wa* vs. regional *wal* ‘wool’ (**bal**). This suggests either that *l*, for some reason, did not cause the allophonic fronting and raising of *a*, or that it was lost as a final already before the vocalic development took place.

The above system of five distinct vowel phonemes may be understood as a maximal paradigm. It has already been shown that this paradigm is only attested for syllables with no final (including syllables with a lost final). Syllables with a final, on the other hand, can only contain the four distinct vowel phonemes of the basic paradigm. There are, however, two finals which allow even fewer distinctions to be present in the vocalic core. These are the velars *q ng*, each of which conditions its own minimal paradigm of vocalic distinctions.

The final *q* can be preceded by three different vowels. It is fairly safe to place these vowels at the three corners of the triangle:

(xxii)

<i>i</i>	<i>u</i>
<i>a</i>	

What seems to have happened here is that the original mid-high front vowel (**e**) underwent velarization and merged with the low back vowel (**a**) into a sound which may be identified with *a*, as in *laq* ‘good’ (**legs**) & ‘hand’ (**lag**). As the merger removed the segment (**e**) which would have otherwise developed into the modern high front vowel *i*, the position of the latter was taken by the neutralized result of the original high vowels (**i** & **u**), as in *yiq* ‘letter, character’ (**yig**) & ‘piece’ (**yug**). The remaining vowel *u* represents its regular source, the original mid-high rounded back vowel (**o**), as in *kuq* ‘inside’ (**khog**).

It is obvious that each of the three vowels *a i u* of the minimal paradigm occurring in combination with the final *q* has more space for allophonic variation than any one of the five vowels *a ä e i u* of the maximal paradigm. This explains at least some of the qualitative peculiarities of the minimal paradigm. In particular, the low vowel *a* is in the position before *q* realized with a quality which lies roughly between the values of the three vowels *a ä e* of the maximal paradigm. Also, the high front vowel *i*, especially when not preceded by a palatal consonant, is frequently pronounced with the quality of the corresponding central vowel [i]. The quality of *u*, on the other hand, remains roughly the same as (or perhaps slightly lower than) in the maximal paradigm.

The smallest minimal paradigm, consisting of only two vowels, is present in syllables with *ng* as the final. In view of the phonetic properties of the two vowels concerned they may be interpreted as *a* and *u*:

(xxiii)

*u**a*

In this case, the original vowels are grouped in yet another way. The low back vowel has here absorbed not only the original mid-high front vowel but also the corresponding high vowel (*a* & *e* & *i*), as can be seen from triplets like *zhang* ‘uncle’ (**zhang**) & ‘width’ (**zheng**) & ‘field’ (**zhing**). The resulting segment may still be interpreted as *a*, though it is pronounced with a rather strongly velarized and slightly raised quality [ʌ]. The other vowel *u* is realized with its regular value, or slightly lower, and represents the two rounded vowels of the original paradigm, as in *dung* ‘conch’ (**dung**) & ‘well’ (**dong**).

According to the above description, we may distinguish between four different positional paradigms of vowels. The full maximal paradigm has the five vowels *a ä e i u*, which occur in syllables without a final. A slightly simpler system comprising the four etymologically basic vowels *a e i u* is attested before the final *n* as well as, at the regional level of speech, before the finals *w d r l*. A smaller minimal paradigm comprising only the three corner vowels *a i u* is present in syllables with the final *q*, while the final *ng* restricts the paradigm of distinct vowels down to the two segments *a u*.

This relatively simple and systematic general picture has one complication, in that some syllables exhibit two additional vocalic elements which seem to be distinct from all the vowels established so far. From the phonetic point of view, we may characterize these elements as fricative vowels, for, at least in careful pronunciation, they end in a clearly perceptible fricative phase. The two fricative vowels are related to the high vowels *i u* (front unrounded vs. back rounded), and their fricative phases may correspondingly be described as palatal or even sibilant [ij iʒ], on the one hand, and bilabial or dentilabial [uw uv], on the other. When following a continuant initial, including affricates and glides, a fricative vowel is often pronounced as a syllabic continuation of the consonant, very much like the fricative vowels in Chinese.

A clue to the phonological interpretation of the fricative vowels is offered by the rules governing the combination of vowels into sequences. Unlike the situation in Written Tibetan, sequences of two consecutive vowels seem to be rather rare in Amdo with the exception of Chinese loanwords. There is, however, one vowel sequence which can easily be established. This is *ae* [aə], as in *gae* ‘icon box’ [worn on the neck] (**gavü**). As can be seen, the modern phonetic and phonemic shape contains the regular reflexes of the two original vowels with no further complications. Some other Amdo materials (notably Roerich 1958 and Hua & Long 1993) suggest that there may have appeared a secondary hiatus-filling consonant (the labial continuant *w*) between the two vowels, but this is definitely not the case in the dialect under investigation.

With the sequence *ae* established, it is tempting to assume that the language also has the sequences *ie ue*. This is, indeed, the case if we recognize that these sequences are phonetically represented by the fricative vowels. There will then be three vowel sequences, in which all the segments located at the corners of the vowel triangle can be combined with the central vowel *e*:

(xxiv)
$$\begin{array}{ccc} & i & e \\ & / & / \\ & ae & \end{array}$$

Synchronically, this interpretation is suggested by the simple distributional fact that there are no other phonetic features that could be interpreted as representing the vowel sequences *ie ue*. Although a synchronic conclusion like this requires no diachronic support, it is not uninteresting to note that many occurrences of the fricative vowels are actually of a sequential origin. In particular, from orthographical information it may be seen that *ie* often represents morphologically or derivationally formed vowel sequences with either one of the high vowels (*i* & *u*) as the second component, as in *wie* 'son's' [adnominal] (**buvi**) from *we* 'son' (**bu**) & 'small yak' [diminutive] (**bevu**).

The actual diachronic picture is, however, more complicated. For one thing, not all diachronic or orthographical vowel sequences yield fricative vowels. In cases which involve an original non-high back vowel (*a o*) as the first component and the high unrounded front vowel (*i*) as the second component the modern result is simply the basic vowel *i*, as in *ngi* 'my' (**ngavi**) from *nga* 'I' (**nga**), *ci* 'your' (**khyovi**) from *cu* 'you' (**khyod**). This seems to be the regular representation also in cases with the non-high front vowel (*e*) as the first component, as in *tsi* 'of life' (**tshevi**) from *tsi* 'life' (**tshe**). An exceptional development is present in *die* 'its' (**devi**) from *di* 'it' (**de**), probably formed under the influence of *vdie* 'of this' (**vdivi**) from *vde* 'this' (**vdi**).

Also, the vowel sequences underlying the fricative vowels are not always primary. Secondary vowel sequences have been formed through the vocalization of an original lateral final (*l*) after a high vowel (*i u*), as in *nyie* 'to collapse' (**nyil**), *hngue* 'silver' (**dngul**), *yue* 'home' (**yul** or **yuvu**). In these cases, the modern fricative vowels follow the quality of the original vowel. A similar vocalization seems to have taken place in syllables containing a sibilant final (*s*), but here the result is invariably *ie*, as in *hnyie* 'two' (**gnyis**), *gie* 'to be polite' (**gus**). In cases with an original non-high vowel, no fricative vowel is present, but the sibilant final is reflected by the uniform presence of the high front vowel *i*, as in *zi* 'food' (**zas**), *shi* 'to know' (**shes**), *gi* 'clothes' (**gos**).

To summarize the diachronic picture, it may be established that the sibilant final (*s*) originally merged with the high front vowel (*i*) irrespective of what the identity of the preceding vowel was. The lateral final (*l*), on the other hand, merged with

either one of the high vowels (**i u**) depending on the preceding vowel. In all of these cases, a presupposition for the development of the fricative vowels was that the first component of the sequence was a high vowel (**i u**). Fricative vowels did, however, also develop from the combination of the mid-high vowels (**e o**) with the rounded high back vowel (**u**). Altogether, the modern sequence *ie* has, for various reasons, a larger number of different sources (**evu & ivu & ivi & uvi & il & is & us**) than *ue* (**ovv & uvv & ul**).

While both the synchronic and the diachronic facts presented above favour the analysis of the fricative vowels as sequences, there is a possible counterargument, connected with the occurrence of these vowels in loanwords, as in *lie* 'pear' (**li**, Chinese *li*), *wue* 'gun' (**bovu**, through Mongol from Chinese *pao*), *sueliu* 'plastic' (**suvu-li-xo**, Chinese *suliao*). Especially in modern loanwords from Chinese the fricative vowels function as the regular substitutes for what may be analyzed as single vocalic segments in the donor language. Although this does not necessarily mean that the fricative vowels themselves would also have to be monophonemic, it is possible that they are developing towards a monophonemic identity. Assuming that this is so in some varieties of speech, the fricative vowels would have to be incorporated into the maximal paradigm:

(xxv)	<i>ie</i>	<i>ue</i>
	<i>i</i>	<i>u</i>
	<i>ä</i>	<i>e</i>
	<i>a</i>	

This analysis would involve a tenseness correlation, opposing the fricative (tense) vowels *ie ue* to the regular (lax) high vowels *i u*. However, in view of the minimal paradigms established for syllables with a final, it would still be the fricative vowels that would have to be regarded as marked in the maximal paradigm. While this may be a synchronically valid situation in some forms of Amdo Tibetan, we nevertheless continue to prefer the sequential analysis. As long as the sequence *ae* is a synchronic reality in the dialect, there is no reason to interpret the fricative vowels as monophonemic entities.

7. BEYOND THE SYLLABLE

The discussion concerning the fricative vowels could be extended to cover their status with regard to syllable boundaries. If we accept the analysis according to which the elements *ie ue*, as well as *ae*, contain two separate segments, it still remains unclear whether these segments in each case belong to a single syllable. However, the general rules of synchronic syllable structure, in which there is no place for a vocalic final, favour a bisyllabic interpretation. The fricative vowels may

therefore be considered as a very special case of bisyllabic sequences, in which the phonetic quality of the second syllable is completely determined by the vowel of the first syllable.

Generally, syllable boundaries are of relatively little significance to the description of the segmental phonology of the dialect. The word-internal syllable-initial position shows the same consonantal distinctions as have been established for the word-initial position. Both the phonetic realizations and the diachronic and orthographical correlations of the individual segments may, however, show slight differences. For instance, the original voiced velar stop (**g**) yields intervocally the continuant *q*, which in this position is invariably pronounced as a velar fricative [ɣ], as in *dzeqe* 'mouse' (**tsi-gu**). Incidentally, this allows the segmental identity of the final occurrences of *q* to be verified, for there are occasional examples involving a derivational alternation between the two positions, as in *liq* 'sheep' (**lug**) : *leqe* 'lamb' [diminutive] (**lu-gu**).

The development of a word-internal voiced velar stop into the corresponding continuant is prevented by the presence of an original final. If the final is lost, the result is an intervocalic weak stop *g*, as in *yuge* 'there is' (**yod-gi**). This segment can also represent the weakened reflex of an original intervocalic aspirated velar stop, as in *age* 'uncle' (**xa-khu**), though the strong velar stop is also attested in the same position, especially in borrowings and literary words, such as *rake* 'liquor' (**ra-khu**), *gaka* 'the Tibetan alphabet' (**ka-kha**).

Without going into further details it has to be mentioned that the potentially most complicated syllable-boundary phenomena are connected with sequences containing accumulations of finals and preinitials. A final followed by an initial cluster within the confines of the same word yields a word-internal cluster of three consonants. However, only the last segment in such clusters can exhibit the full diversity of the maximal paradigm, while the first segment is one of the consonants *n ng q*, and the middle segment is either *h* or *v*. It remains to be investigated whether some phonologically relevant simplifications (deletions or assimilations) might take place in these cases. Most probably, such phenomena would be connected with external factors, such as the style or tempo of speech.

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