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# THE DUOXU LANGUAGE AND THE ERSU－LIZU－DUOXU RELATIONSHIP＊ 

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Duoxu is a terminally endangered and virtually undescribed Tibeto－Burman language，spoken in the historically multi－ethnic and multi－lingual Miǎnníng county in Sichuān province in the People＇s Republic of China．Until recently，Duoxu was known only through a 740 －word vocabulary list in the Sino－Tibetan vocabularies Xīfān Yìyǔ［Tibetan－Chinese bilingual glossary］，recorded in Chinese and Tibetan transcriptions in the 18th century，and a grammatical sketch（Huáng \＆Yǐn 2012）． Researchers who have worked on the language（Nishida 1973，Sūn 1982，Huáng \＆ Yǐn 2012）have expressed different views about the features and the genetic position of Duoxu，variously viewing it as（1）closely related to Lolo－Burmese languages（Nishida 1973），（2）closely related to Ersu and Lizu，two neighboring languages that are currently classified as members of the Qiangic subgroup of the Tibeto－Burman language family（Sūn 1982），or（3）distantly related to those two languages and to Qiangic languages at large（Huáng \＆Yǐn 2012）．
The Duoxu language is critically endangered and urgently requires documentation．It is of great value for our understanding of the linguistic diversity of the region，and of its linguistic history．It is also of great value as a modern reflection of a language that was recorded in the 18th century．This paper makes significant contribution in all these areas．Based on new fieldwork with all remaining elderly Duoxu speakers，this study provides newly collected data and new analysis．It compares the newly collected data with the 18th－century attestations of Duoxu as well as with its two putative sister languages Ersu and Lizu．The conclusion of the study is that Duoxu is closely related to Ersu and Lizu， with superficial differences attributed to long－standing and on－going contact influence from Southwestern Mandarin．

Duoxu，phonetics，phonology，phonetic variation，language attrition，language contact，Southwestern Mandarin，Ersu，Lizu

## 1．Introduction

Duoxu（／do ${ }^{44}-6 \mathrm{u}^{44} /$ ，Duōxù 多续 or Duōxū 多须 in Mandarin）is a little－known and virtually undescribed Tibeto－Burman language，spoken in Miănníng county（冕宁县）．This county is located in the Liángshān Yí Autonomous Prefecture（凉山彝族自治州）in Sichuān province in the People＇s Republic of China．

Miănníng is historically a multi－ethnic region．The Qīng edition of Miănning Xiànzhì 《冕宁县志》［Annals of Miǎnníng County］，edited in the Xiánfēng 咸

[^0]丰 reign period（1851－1861），mentions several local indigenous groups，all of which continue to live in the area to date：
（1）the so－called＂Western Barbarians＂（Xīfān 西番）．This group includes the present－day Duoxu and Lizu people ${ }^{1}$
（2）two branches of the so－called＂Eastern Barbarians＂（Yí 夷）：（a）luŏluó（猓猡），which corresponds to the modern Yi（彝）group，and（b）mósuān（摩狻），or the modern Nàmùzī（纳木兹）group．

The Duoxu ethnic group currently counts approximately 2,000 people．They essentially live in the administrative seat of Miǎnníng county and the villages around it，as well as in six outlying townships of that county，namely Hòushān（后山），Fùxīng（复兴），Huì’̄n（惠安），Hāhā（哈哈），Línlĭ（林里），and Shābā zhèn（沙坝镇）（Wáng 2010：6）．

The language of the group is severely moribund．It is currently spoken by no more than 9 individuals，all in their 70s and 80s．Although the Duoxu language has been repeatedly surveyed in the past sixty years，very little data from those surveys has been released，and only one grammatical sketch of Duoxu has been published to date（Huáng \＆Yǐn 2012）．An important source of information on the language（and until recently the only source）is a 740 －word vocabulary list in the Sino－Tibetan vocabularies Xīfān Yìŭ 《西番译语》［Tibetan－Chinese bilingual glossary］（hereafter XFYY），recorded in Chinese and Tibetan transcriptions in the Qiánlóng 乾隆 reign（1736－1796）of the Qīng dynasty（see Nishida 1973；Niè \＆ Sūn 2010）．Researchers who have worked on Duoxu，on the basis of secondary sources（Nishida 1973，1976）or on the basis of firsthand fieldwork data（Sūn 1982；Huáng \＆Yǐn 2012），have expressed different views about the features and the genetic position of Duoxu．

Based on his work on the Duoxu vocabularies recorded in XFYY，Nishida Tatsuo 西田龍雄 $(1973,1976)$ argues for a close link between Duoxu（which he calls Tosu）and Lolo－Burmese languages on the one hand，and between Duoxu and Tangut on the other hand，proposing a separate Tangut－Duoxu subgroup within Lolo－Burmese．

Sūn Hóngkāi 孙宏开 considers Duoxu to be one of the three dialects of the Ersu language（ěrs $\bar{u} y \bar{u}$ 尔苏语），a language he sees as a member of the Qiangic subgroup of the Tibeto－Burman language family（e．g．Sūn 2001）．${ }^{2}$ In this conception：

[^1]（1）Duoxu is the central dialect of the Ersu language
（2）Lizu is the western dialect of the Ersu language ${ }^{3}$
（3）Ersu proper is the eastern dialect of the Ersu language ${ }^{4}$
Sūn notes that the three languages are not mutually intelligible and share only $50 \%$ cognacy（Nishida \＆Sūn 1990：15）．${ }^{5}$ At the same time，Sūn stresses that salient structural similarities between the three varieties in all linguistic sub－ systems leave no doubt that the three stand in a dialectal relationship to each other （Sūn 1982：241）．

This view has recently been challenged by Huáng Bùfán 黄布凡 and Yǐn Wèibīn 尹薇彬（Huáng \＆Yǐn 2012）．Based on the data collected in the early 1980s，complemented by a more recent fieldtrip in 2012，they argue that Duoxu is not a dialect of Ersu，but an independent Tibeto－Burman language．Furthermore， in their view，Duoxu does not belong to the Qiangic subgroup，and its relationship to other languages（i．e．its putative sister languages Ersu and Lizu，and neighboring languages such as Yi ）requires further investigation．This conclusion rests on the following observations：
（1）A low percentage of cognate sets in Duoxu and Ersu（ $39.3 \%$ of 783 basic words），and in Duoxu and Lizu（ $42 \%$ of 794 basic words）．Huáng and Yǐn stress the fact that they use the term＇cognate＇in a loose sense，that is，the cognate vocabulary has not been established on the basis of regular sound correspondences，but rather on the overall similarity between the compared words．In their analysis，the fact that Duoxu and Ersu，and Duoxu and Lizu， respectively，share less than $50 \%$ of cognates argues strongly against considering these languages to be dialects of one and the same language．Huáng \＆Yĭn provide a list of 300 basic words collected in their fieldwork as an appendix to their article．Unfortunately，they do not provide the corresponding Ersu and Lizu forms on which they base their cognacy judgments．
（2）Morphosyntactic differences between the three languages．Huáng \＆Yinn argue that the Duoxu language is of the analytic type，hence similar to Yi languages，whereas Ersu and Qiangic languages in general are of the agglutinative type．They also point out that unlike Qiangic languages，Duoxu does not have

[^2]directional prefixes，which in those languages often have aspectual meanings and functions．They note，for instance，that unlike Ersu，the perfective aspect in Duoxu is essentially expressed by function words．
（3）Different migration histories and different ethnic identities of the Duoxu， Ersu，and Lizu groups（this conclusion is based on the ethnographic work by Lóng 2007 ［1991］）．${ }^{6}$

The two competing hypotheses regarding the relationship of Duoxu to Ersu and Lizu（Sūn 1982；Huáng \＆Yǐn 2012）will be discussed below in the light of new data and findings．

The work reported in this study is part of an ongoing documentation of Duoxu in the framework of the project＂Ersu and Xumi：Comparative and Cross－Varietal Documentation of Highly Endangered Languages of South－West China＂（2013－ 2016），supported by the Endangered Languages Documentation Programme （ELDP）．The linguistic fieldwork，on which this analysis is based，was conducted in April－May 2013 in the administrative seat of Miănníng county and in the neighboring villages of Héshàng（河上）and Wǔsù（伍宿）．The participation of native Duoxu and Ersu ethnographers and historians in the project，Yuán Xiǎowén 袁晓文，Hán Zhèngkāng 韩正康，and Wáng Déhé 王德和，made fieldwork possible with all nine remaining speakers of this language．Of these speakers，six are female and three are male．At the time of fieldwork，the youngest speaker was 67 years old，the oldest speaker was 83 years old，and the majority of speakers were in their 70s．Most elderly speakers are of Héshàng and Wǔsù villages（three and four speakers，respectively）；in addition，one speaker originally comes from Hāhā township．Most speakers are illiterate，working all their lives as farmers in their native villages．Two speakers are retired elementary school teachers and one is a retired local government official．

All Duoxu language consultants are fully competent in the local variety of Southwestern Mandarin（hereafter SW Mandarin），which is their dominant daily language．Seven of the nine speakers also have some knowledge of Nuosu Yi （another important linguistic neighbor of Duoxu），ranging from poor to fair．

Given that Duoxu is not spoken regularly，even in families that have more than one member with some knowledge of Duoxu，none of our consultants were fully competent speakers of the language．Only a few were able to have a fluent conversation in Duoxu，most speakers were hesitant about the correctness of forms they produced，and they often produced competing forms．In fact，the degree of inter－speaker and intra－speaker variation was so considerable that virtually each and every speaker could be considered as having a lexically and phonetically distinct variety．Although this presented a considerable challenge for word elicitation and phonetic－phonological analysis，it also provided insights into ongoing sound change．Overall，the observed variation patterns were clearly symptomatic of an advanced state of language attrition in Duoxu．I use this term to refer to the process of language shift in bilinguals due to the extensive use of

[^3]the dominant language (in this case, SW Mandarin) and the reduced use of the minority language (Duoxu) in daily life over an extensive time-span. Language attrition is one of the natural outcomes of language contact situations in general and it is also very much part of language dynamism and variability in the historically multi-lingual region where Duoxu is spoken. Therefore, developments attested in this language potentially have a diagnostic significance as a window on the recent histories of local languages. Duoxu is all the more important in this respect, as it has earlier attestations dating from the 18th century, thus providing a diachronic dimension essential to elucidate the dynamics of sound change in this multi-ethnic and multi-lingual area.

Taking advantage of these opportunities, this study focuses on sound change in progress across the group of remaining Duoxu speakers as well as on diachronic change between two stages of Duoxu: (1) modern, as attested in recent fieldwork, and (2) 18th century, as recorded in XFYY. Based on the insights gained in this process, it also re-examines the relationship between Duoxu and its two putative sister languages, Ersu and Lizu. I argue that Duoxu is closely related to Ersu and Lizu, and that Duoxu's superficial differences from Ersu and Lizu can be mostly accounted for by the high degree of SW Mandarin influence.

The article is structured as follows. Section 2 describes inter- and intra-speaker variation, as observed in recent fieldwork with all remaining Duoxu speakers. This section also provides a phonemic analysis of the most conservative form of Duoxu attested among them. Section 3 compares newly collected synchronic Duoxu data with earlier attestations of Duoxu dating from the 18th century. The comparison is based on a list of 300 basic words derived from the original 740word list in XFYY (quoted from Nishida 1973:118-160), compared with their modern equivalents. The two stages of the language are still recognizably quite similar, whereas patterns of correspondences between them are parallel to synchronic variation in Modern Duoxu. A similarity in the patterns of variation and change at both stages suggests a similarity in the driving force behind them, which is likely to be long-standing contact influence from SW Mandarin. Section 4 extends the comparison on the basis of the same vocabulary list to Ersu and Lizu. The goal of this comparison is to evaluate the competing hypotheses regarding the relationship of Duoxu to these two languages (Sūn 1982; Huáng \& Yĭn 2012). This section also provides morphological analysis on some of the recorded vocabulary in order to assess morphosyntactic properties and compare them across languages. The concluding section (5) summarizes the essential findings and outlines directions for future research. The appendix to the article provides a comparative list of 300 basic words in Modern Duoxu, XFYY Duoxu, Ersu, and Lizu. The goal of the list is twofold: to make the present argument transparent, and to publish new fieldwork data on Duoxu so as to encourage research on this language and to contribute to its preservation.

## 2. Modern Duoxu: Synchronic inter- and intra-speaker variation

Important challenges for descriptive and comparative analyses of Duoxu are variation and variability, as also noted in previous work on this language (Huáng \& Yǐn 2012: 51-52). The patterns of phonetic variation among the surveyed

Duoxu speakers，as attested in recent fieldwork，are consistent with what is known about sound change in languages undergoing attrition（e．g．Andersen 1982： 95；Campbell \＆Muntzel 1989；Schmid et al．2004；Stanford \＆Preston 2009； Schmid 2011）．These include：
（1）reduction of the overall number of phonological distinctions，with a concomitant loss of those distinctions that do not exist in the contact language （and that for that reason，have lower frequency of use），
（2）retention of those distinctions that also exist in the contact language（and that have higher frequency of use），
（3）amplification of features present in Duoxu，but absent in Mandarin． Amplification is described in Campbell \＆Muntzel（1989：187－190）as a tendency for those features that are marked or＂exotic＂from the point of view of the dominant language not to be completely mastered by the speakers．As a result，not knowing exactly where these＂exotic＂features belong，speakers employ them with great frequency and in ways inappropriate for the healthy version of the same language．

Based on the overall number of consistent phonological distinctions that individual Duoxu speakers make in their speech，it is possible to divide all surveyed Duoxu speakers into three groups，more precisely：
（1）speakers who consistently make the largest overall number of phonological distinctions，also including those that do not exist in SW Mandarin．I take this group to be representative of a more conservative stage of the language（hereafter， conservative group）
（2）speakers who only make phonological distinctions that exist in SW Mandarin（hereafter，convergence group）
（3）speakers for whom the reduction of the overall number of phonological distinctions is not yet complete and who employ some distinctions that do not exist in SW Mandarin in ways inappropriate for the more conservative variety of Duoxu（hereafter，the transitional group）

This section outlines the phonological system of the variety of the conservative group，against which the synchronic phonetic variation among the surveyed Duoxu speakers is to be understood．It is based on the speech of the 83 －year old speaker，Mr．Wǔ Róngfü 伍荣富．It is probably no coincidence that his speech is the most＂intact＂of all surveyed speakers：he is one of the oldest members of the group，he spent all his life as a farmer in his village，never travelled far or took jobs outside of the village，and he is married to another fluent Duoxu speaker from the same village，even though the couple does not use Duoxu any longer in daily life．The sound system of this speaker is summarized below．${ }^{7}$（Whenever possible，illustrative examples are cited from the vocabulary list in the appendix， the number of the word in the list is indicated in round brackets to the right of the word．）

[^4]The consonant inventory of Duoxu consists of 37 consonants，listed in Table 1 （marginal segments are put in parentheses，＂ N ＂stands for a nasal that is homorganic to the following consonant）．

|  | Bilabial | Labiodental | Alveolar | Postalveolar | Alveolopalatal | Velar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Plosive | $\mathrm{p} \mathrm{p}^{\mathrm{h}} \mathrm{~b}$ |  | $\begin{gathered} \mathrm{t} \mathrm{t}^{\mathrm{h}} \mathrm{~d} \\ \\ (\mathrm{Nd}) \end{gathered}$ |  |  | $\begin{gathered} \mathrm{k} \quad \mathrm{k}^{\mathrm{h}} \mathrm{~g} \\ \\ (\mathrm{Ng}) \end{gathered}$ |
| Affricate |  |  | ts ts ${ }^{\text {h }} \mathrm{dz}$ | $t \int^{\text {d }} \mathrm{f}^{\mathrm{h}} \mathrm{d} 3$ | t6 t6 ${ }^{\text {h }} \mathrm{d}$ |  |
| Nasal | m |  | n |  | J | － |
| Fricative |  | f | S | S | 6 | x － Y |
| Approximant | w |  |  |  | j |  |
| Lateral |  |  | 1 |  |  |  |

Table 1．Consonant phonemes of Duoxu
$/ \mathrm{w} /$ is realized as $[\mathrm{v}]$ before $/ \mathrm{e}, \mathrm{u} /$（e．g．$/ \mathrm{we}^{34 /}\left[\mathrm{ve}^{34}\right]$＇to wear（282）＇，$/ \mathrm{wu}^{44 /}$ ［ $\mathrm{vu}^{44}$ ］＇to buy；to be narrow（39）＇），and as［w］before the remaining vowels（e．g． $/ w a^{53 /}\left[\mathrm{wa}^{53}\right]$＇rain（12）＇，／wo ${ }^{53 /}\left[\mathrm{wo}^{53}\right]$＇chicken，hen（213）＇）．
$/ \mathrm{f} /$ only occurs before $/ \mathrm{e} / \mathrm{l} / \mathrm{a} /$ ，and $/ \mathrm{u} /$（e．g．$/ \mathrm{fe}^{32}-\partial \mathrm{x}^{34 /}$＇pus（123）＇，$/ \mathrm{fa}^{34 /}$＇to bury＇，／fu ${ }^{32} \mathrm{t} \int^{\mathrm{h}} \mathrm{u}^{53} /$＇to be dry＇）．
$/ \mathrm{\gamma} /$ only occurs before $/ \mathrm{e}, \mathrm{a} /$ ，in the latter environment，it is realized as［b］（e．g． $/ \mathrm{\gamma е}^{44} /\left[\mathrm{\gamma е}^{44}\right]$＇to be thick，coarse＇，／ $\boldsymbol{\gamma а}^{32 /}\left[\right.$ ва $\left.^{32}\right]$＇needle＇）．

Duoxu marginally distinguishes between plain voiced and prenasalized voiced stops（alternatively，the two are in free variation，see below）．Contrastive prenasalized stops are restricted to a handful of words，e．g．／go ${ }^{32} /$＇to be cold（47）＇ or $/ \mathrm{ygo}^{32 /}$＇to hold，to grasp＇．

The approximant $/ \mathrm{j}$／can occur in the second position in consonant clusters， where it may be realized as secondary palatalization of the first position consonant．It has a restricted distribution，occuring only after labial stops，／d／，and $/ \mathrm{l} /$（e．g．$/ \mathrm{bje}^{44} \mathrm{ka}^{44} /$＇to be soft（40）＇，$/ \mathrm{dje}^{32}-\mathrm{dje}^{44} /$＇flower（189）＇，$/ \mathrm{lje}{ }^{44 /}$＇fertilizer， manure＇）．

The vowel system comprises 6 phonemes，including／i，e，a，u，r，o／（e．g． $/ k^{\mathrm{h}} \mathbf{i}^{32}-\mathrm{k}^{\mathrm{h}} \mathrm{i}^{44} /$＇to shout，to yell＇，$/ \mathrm{k}^{\mathrm{h}} \mathrm{e}^{44}, \mathrm{k}^{\mathrm{h}} \mathrm{e}^{53} \mathrm{ni}^{32} /$＇ $\operatorname{dog}(214)$＇，$/ \mathrm{k}^{\mathrm{h}} \mathrm{a}^{53} /$＇big；to close （door）＇，$/ \mathbf{k}^{\mathrm{h}} \mathbf{u}^{53 /}$＇year（43）＇，$/ \mathrm{k}^{\mathrm{h}} \gamma^{53 /}$＇above，up（180）＇，$/ \mathrm{k}^{\mathrm{h}} \mathrm{o}^{53 /}$＇to give（277）＇）． Additionally，Duoxu has one rhotic vowel，$/ \mathfrak{\circ} /$ ，which only occurs in isolation （e．g．$/ \partial^{32}{ }^{3}$ dza ${ }^{44} /$＇dragon（208）＇）．

After sibilants，$/ \mathbf{i} /$ is realized as a fricative vowel，homorganic to the preceding consonant onset（e．g．／ $\mathrm{zi}^{53 /}\left[\mathrm{zz}^{53}\right]$＇urine（122）＇）．

Duoxu does not have phonemic nasal vowels and nasal codas（with the only exception of $-\eta$ ，in the word $/ \mathrm{xuy}^{44 /}$＇to want＇）．In loanwords from SW Mandarin， the original nasal coda in word－final position is regularly lost without compensation（e．g．$/ \mathrm{lje}^{32} \mathrm{to}^{53 /}$＇sickle＇，from liándāo 镰刀，SW Mandarin $/$ nian $^{21} \operatorname{tao}^{44} /$ ；$/ \mathrm{ja}^{32} \mathrm{ju}^{53 /}$＇potato＇，from yángyù 洋芋，SW Mandarin $/ \mathrm{iay}^{21} \mathrm{y}^{213} /$ ）．${ }^{8}$

[^5]The syllabic structure is $(\mathrm{C} 1)(\mathrm{C} 2) \mathrm{V}$ ，where C 1 can be any consonant phoneme in Table 1，C2 can only be／j／，V is a vowel nucleus，and brackets indicate optional constituents．Duoxu has four contrastive tones on monosyllabic words．In the five－scale pitch system developed by Chao（1930），these tones may be annotated as $53,44,34$ ，and 32 ．Examples include $/ \mathrm{wu}^{53 /}$＇ wine，beer（155）＇，$/ \mathrm{wu}^{44} /$＇water （21）＇，$/ \mathrm{we}^{34 /}$＇to wear（282）＇，$/ \mathrm{wu}^{32 /}$＇to be narrow（39）＇；$/ \mathrm{la}^{53} \mathrm{ba}^{32 /}$＇radish， turnip＇， $1 \mathrm{a}^{44} \mathrm{ma}^{44 /}$＇lama（66）＇， $1 \mathrm{la}^{34 /}$＇ $\operatorname{god}(171)^{\prime}$＇，la ${ }^{32 /}$＇lightning（7）；tiger（206）＇．

In contrast to the phonemic inventory of the conservative group of speakers， that of the convergence group is already identical to that of SW Mandarin．The phonological system of SW Mandarin is provided here for comparison（as well as as a guide to the SW Mandarin readings of the Chinese transcriptions of Duoxu in XFYY in section 3）．In the absence of a detailed description of the SW Mandarin variety of Miǎnníng，the phonological system below is based on the SW Mandarin dialect of the neighboring Mùľ county，as described in Lǐ（2010：117－119）．Note that this variety，which is in contact with local non－Sinitic languages，has a larger number of phonological distinctions than other SW Mandarin dialects．More importantly，in view of the present discussion，it marginally maintains a distinction between $/ \mathrm{n} /$ and $/ /$ ．This dialect has 23 consonant phonemes，listed in Table 2．（Note also that initials conventionally notated as $/ \mathrm{t} s, \mathrm{ts}^{\mathrm{h}}, \mathrm{s}, \mathrm{z}_{l}$ are in fact， apical post－alveolar initials，as they are also in Standard Mandarin，Lee \＆Zee 2003：110．）

|  | Bilabial | Labiodental | Alveolar | Postalveolar | Alveolopalatal | Velar |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Plosive | $\mathrm{p} \mathrm{p}^{\text {h }}$ |  | $\mathrm{t} \mathrm{t}^{\mathrm{h}}$ |  |  | $\mathrm{k} \quad \mathrm{k}^{\mathrm{h}}$ |
| Affricate |  |  | ts ts | ts ts ${ }^{\text {h }}$ | t6 t6 ${ }^{\text {h }}$ |  |
| Nasal | m |  | n |  | n | 1． |
| Fricative |  | － | s | S | 6 | x |
| Lateral |  |  | 1 |  |  |  |

Table 2：Consonant phonemes of SW Mandarin（the dialect of Mùlü），based on Lǐ（2010：117－ 118）

The vowel system is more complex than that of Duoxu．In open syllables，this SW Mandarin dialect has 8 vowel phonemes（／i，y，e，$\varepsilon$, д，u，o，a／）．After sibilants，／i／is realized as a fricative vowel（e．g．si $⿴ 囗 ⿰ 丿 ㇄$ occurring before another vowel，／i， $\mathrm{y}, \mathrm{u} /$ are considered as glides．／ $\mathcal{E} /$ only occurs after／i，y／and before an alveolar nasal coda（e．g．qiān 千 $/ \operatorname{tc}^{\mathrm{h}} \mathrm{i} \mathrm{in}{ }^{44 /}$／＇thousand＇）． Diphthongs in open syllables include／ai，ei，əu，ao／（e．g．$k \bar{a} i=$ 开 $/ \mathrm{k}^{\mathrm{h}} \mathrm{a}^{44} /$／to open＇， bèi 贝 $/ \mathrm{pei}^{213 /}$＇shell，cowrie＇，zhōu 周／tsəu4 ${ }^{44}$＇＇circuit，cycle＇，gāo 高 $/ \mathrm{kao}^{44 /}$＇to be tall，high＇）．／i，y，e，a，$\varepsilon /$ occur before an alveolar nasal coda（e．g．jīn 金 $/ \mathrm{t} \epsilon_{\mathrm{in}}{ }^{44}$／＇gold＇，$j \bar{u} n$ 军 $/ \mathrm{t} \epsilon \mathrm{yn}{ }^{44} /$＇army，military＇，zhēn 真／tsen ${ }^{44 /}$＇to be true＇，gān
 nasal coda（e．g．gāng 缸 $/ \mathrm{kan}^{44 /}$＇jar，vat＇，zhōng 中／tson ${ }^{44 /}$＇middle，in＇）．In addition，this variety of SW Mandarin has the rhotic vowel／$/ 2 /$ ，which mostly occurs in isolation（as in ér 耳 $/ \curvearrowright^{53 /}$＇ear＇）．In addition，the suffix $/ ə^{\prime} /$ 儿 can be added to a few nouns，fusing with the preceding final（as in $/ \mathrm{pei}^{213} \mathrm{ciz}^{44} /$ 背心儿 ＇vest＇，$/ \mathrm{lao}^{533} \mathrm{max}^{44}$／老妈儿 ‘old woman＇，see Lǐ 2010：119）．

The SW Mandarin variety of Mùlǐ has 4 tones，44，21，53， 213 （e．g．$m \bar{a}$ 妈 $/ \mathrm{ma}^{44} /$＇mother，mom＇，má 麻 $/ \mathrm{ma}^{21 /}$＇hemp＇，mă 马 $/ \mathrm{ma}^{53 /}$＇horse＇，mà 骂 $/ \mathrm{ma}^{213 /}$＇to scold＇）．The syllable structure is comparable to that of Duoxu．The major differences between the two languages include marginal prenasalized onsets in Duoxu，different numbers of medial segments（three in SW Mandarin， $/ \mathrm{i}, \mathrm{y}, \mathrm{u} /$ ，and one in Duoxu，$/ \mathrm{j} /$ ），and the presence of nasal codas in Mandarin vs． their absence in Duoxu．

The extensive inter－and intra－speaker variation，attested among the Duoxu speakers，essentially relates to those phonological distinctions that exist in the conservative variety of Duoxu and do not exist in SW Mandarin，that is：
（1）a distinction between $/ \mathrm{n} /$ and $/ \mathrm{l} /$ before all vowels
（2）a distinction between voiced and voiceless initials
（3）a distinction between prenasalized voiced and plain voiced initials
（4）a distinction before low vowels between／$\gamma /([$ г $]$ ）and／w／
（5）a distinction between $/ \mathrm{z} /$ and $/ \mathrm{j} / .^{9}$
Here is a detailed overview per distinction and per group of speakers （conservative，convergence，transitional）：
（1）Variation between $/ \mathrm{n} /$ and $/ \mathrm{l} /$ initials．This is one of the characteristic features of SW Mandarin，where Middle Chinese initials 來 $1-$ ，泥 n－and 娘 n －all merge in most dialects（Yuán et al． 2001 ［1960］：29－30）．In the dialect under description（Lǐ 2010：118），most words with the initials $/ \mathrm{n} /$ and $/ \mathbf{l} /$ in Standard Mandarin have the initial／l／（e．g．nà 那 $/ \mathrm{la}^{213 /}$＇that＇，là 辣 $/ \mathrm{la}{ }^{21 /}$＇peppery，spicy， hot＇）．However，if followed by the medial glides $/ \mathrm{i}, \mathrm{y} /$ ，the distinction between $/ \mathrm{n} /$ and $/ \mathbf{l} /$ is maintained in this variety of SW Mandarin as that between $/ \mathrm{n} /$ and $/ \mathrm{n} /$ ， respectively．Examples include：nián 年／nian ${ }^{21 /}$＇year＇，nü̈̆ 女／ny ${ }^{53 /}$＇woman＇； liăn 脸／nian ${ }^{53 /}$＇face＇，lü̆ 铝／ny ${ }^{53 /}$＇aluminum＇．

While speakers of the conservative group consistently distinguish between $/ \mathrm{n} /$ and $/ \mathrm{l} /$（e．g．$/ \mathrm{ta}^{44}-\mathrm{ne}^{44} /$＇today（49）＇vs．$/ \mathrm{tche}^{44} \mathrm{le}^{44} /$＇ladder（150）＇；$/ \mathrm{no}^{53} \mathrm{k}^{\mathrm{h}} \mathrm{u}^{32 /}$ ＇black＇vs．$/ 1 \mathrm{o}^{53 /}$＇to wait＇），numerous examples of inter－speaker variation in $/ \mathrm{n} /$ and $/ 1 /$ initials can be noted among speakers of the convergence and transitional groups as well as within individual speakers of these groups．In relation to the examples above，＇today＇can be variously realized as $\left[\mathrm{ta}^{44}-n e^{44}\right]$ or $\left[\mathrm{ta}^{44}-\mathrm{le}^{44}\right.$ ］ （and also［nda $\left.{ }^{44}-\mathrm{le}^{44}\right]$ ，see below）；＇ladder＇as $\left[\mathrm{tc} \mathrm{e}^{44} \mathrm{le}^{44}\right]$ or $\left[\mathrm{t} \epsilon \mathrm{e}^{44} \mathrm{ne}^{44}\right]$ ；＇to wait＇ as $\left[\mathrm{lo}^{53}\right]$ or $\left[\mathrm{no}^{53}\right]$ ．

The same variation is observed for the initials $/ \mathrm{n} /$ and $/ 1 /$ ，where these are followed by the approximant -j －．For the speakers of the convergence and transitional groups，the two have already merged into $/ \mathrm{j} /$ ，whereas the speakers of the conservative groups consistently maintain the distinction．The following two words are contrastive for the speakers of the conservative group，but

[^6]homophonous for the speakers of the convergence group: / $\mathrm{lje}^{44}$ / 'fertilizer, manure' vs. /ne ${ }^{44 /}$ 'year (43)'.
(2) Variation between voiced and voiceless initials. This is again a characteristic feature of modern Mandarin dialects, which have eliminated voicing as a distinctive feature. For example, while speakers of the conservative group minimally distinguish between voiced-voiceless pairs such as $/ \mathrm{ba}^{53 /}$ 'to be tired' and / $\mathrm{pa}^{53 /}$ 'to arrive (262)', and $/ \mathrm{go}^{32 /}$ 'to be cold (47)' and $/ \mathrm{ko}^{32 /}$ 'early'; those of the convergence group have already lost the distinction, having replaced voiced initials by their voiceless counterparts. The speakers of the transitional group apply voicing in an inconsistent fashion. For example, the word for 'hole' is $/ \mathrm{ku}^{32}-\mathrm{ku}^{44} /\left[\mathrm{ku}^{32}-\mathrm{ku}^{44}\right]$ for the conservative group, but variously $\left[\mathrm{ku}^{32}-\mathrm{ku}^{44}\right]$ or $\left[\mathrm{gu}^{32}-\mathrm{gu}^{44}\right]$ for the transitional group.
(3) Variation in the use of prenasalization. The speakers of the conservative group marginally distinguish between plain voiced and prenasalized voiced initials (e.g. /go ${ }^{32 /}$ 'to be cold (47)' or / $\mathrm{ygo}^{32 /}$ 'to hold, grasp'). Alternatively, the two are in free variation. Examples include $\left[\mathrm{ba}^{44}\right]$ or $\left[\mathrm{mba}^{44}\right]$ 'mountain (24)', [ $\mathrm{da}^{53}$ ] or [ $\mathrm{nda}^{53}$ ] 'earth (20)' (also for the speakers of the conservative group), $\left[\mathrm{dzy} \mathrm{y}^{32}-\mathrm{zi}^{44}\right] \quad$ or $\quad\left[\mathrm{nd} \mathrm{zy}^{32}-\mathrm{zi}^{44}\right] \quad$ 'nephew (28)', $\quad\left[\mathrm{sa}^{44} \mathrm{ba}^{44}=\mathrm{la}^{44}\right] \quad$ or $\left[\mathrm{sa}^{44} \mathrm{mba}^{44}=1 \mathrm{a}^{44}\right]$ 'to be happy (257)'.

For the speakers of the transitional group, the marginal distinction between plain voiced and prenasalized voiced initials appears to have undergone two additional developments. First, the feature prenasalization is overgeneralized to apply to all voiced initials. For example, 'to drink (152)' is [ $\mathrm{ba}^{53}$ ] for the speakers of the conservative group and [ $\mathrm{mba}^{53}$ ] for the speakers of the transitional group. To take another example, 'to sing (253)' is [dza ${ }^{53}$ ] for the former group and [ $\mathrm{ndza}^{53}$ ] for the latter group.

Second, the feature prenasalization is also extended, in an inconsistent fashion, to those initials that are regularly voiceless for the speakers of the conservative group. For example, 'today (49)', $\left[\mathrm{ta}^{44}-\mathrm{ne}^{44}\right]$ for the latter group, can be realized as $\left[\mathrm{nda}^{44}-\mathrm{le}^{44}\right.$ ] by the speakers of the transitional group.
(4) Variation between $/ \gamma /([\boldsymbol{\gamma}])$ and $/ \mathrm{w} /$ before low vowels. $/ \gamma /$ is clearly distinguished from $/ \mathrm{w} /$ for the speakers of the conservative group, as in the following minimal pair, $/ \mathrm{\gamma a}^{53}=1 \mathrm{a}^{32} /$ 'have become full' vs. $/ \mathrm{wa}^{53}=1 \mathrm{a}^{32 /}$ 'have obtained'. The distinction is lost for the speakers of the convergence groups, who substitute the original $/ \mathrm{\gamma} /$ with $/ \mathrm{w} /$. Take as an example the word 'needle', which is $/ \mathrm{\gamma a}^{32} /\left[\mathrm{fa}^{32}\right]$ for the speakers of the conservative group, and $\left[\mathrm{wa}^{32}\right.$ ] for the speakers of the convergence group. Finally, the distinction between $/ \gamma /$ and $/ \mathrm{w} /$ before low vowels is marginally maintained in the speech of the speakers of the transitional group. They furthermore tend to overgeneralize $/ \mathrm{\gamma} /$ and to apply it in an inconsistent fashion to all words with the initial /w/. For example, 'road (28)': [ $\mathrm{wa}^{44}-\mathrm{ma}^{44}$ ] for the speakers of the conservative group, and [ка ${ }^{44}-\mathrm{ma}^{44}$ ] for the speakers of the transitional group.

In addition, $/ \mathrm{w} /$ alternates with $/ \mathrm{y}$ / in a handful of words (as in 'bird', which is $\left[\mathrm{go}^{44}-\mathrm{t} \mathrm{ci}^{44}\right.$ ] for some speakers, but $\left[\mathrm{wo}^{44}-\mathrm{t} \mathrm{ti}^{44}\right.$ ] for some other speakers).
(5) Variation between $/ \mathbf{z} /$ and $/ \mathrm{j} / . / \mathrm{z} /$ is again clearly distinguished from $/ \mathrm{j} /$ for the speakers of the conservative group. However, the distinction is only
marginally maintained or already lost in the speech of the remaining speakers, who replace the original $/ \mathrm{z} /$ with $/ \mathrm{j} /$. For example, 'fool, foolish person; dummy' is $\left[\mathrm{zi}^{33} \mathrm{ka}^{53}\right]$ for the speakers of the conservative group, and $\left[\mathrm{ji}^{33} \mathrm{ka}^{53}\right]$ for the speakers of the convergence group.

An additional tendency, restricted to the speakers of the transitional group, consists of elimination from the syllable inventory of certain syllables that do not conform to the phonotactics of SW Mandarin. One example is velar palatalization, as in 'gallbladder (117)', which is [ $\left.\mathrm{ki}^{34}\right]$ for the conservative group and $\left[t \mathrm{tci}^{34}\right]$ for the transitional group; and 'teacher (63)', which is $\left[\mathrm{bi}^{32} \mathrm{gi}^{44} \mathrm{ge}^{32}\right]$ for the former group, and $\left[\mathrm{bi}^{32} \mathrm{dzi}^{44} \mathrm{ge}^{32}\right]$ for the latter group. (This word is possibly a loan from Tibetan, Written Tibetan, hereafter WT, dge rgan).

To summarize findings in this section, extensive inter- and intra-speaker variation across the three groups of Duoxu speakers (conservative, convergence, transitional) evidences sound change due to language attrition and contact influence of SW Mandarin. Related processes include gradual replacement of those features that do not exist in the contact variety of SW Mandarin with those that exist in that contact variety of SW Mandarin. The survey of all remaining Duoxu speakers, as reported presently, reveals ongoing change from a phonologically more complex variety (the conservative group) to a less complex variety, which is similar to that of the contact variety of SW Mandarin (the speech of the convergence group).

## 3. Diachronic comparison: XFYY and Modern Duoxu, with comparison to features of SW Mandarin

This section provides a comparison between Modern Duoxu (on the basis of the conservative group) and Duoxu as recorded in XFYY. The goal of the comparison is to establish how much Duoxu has changed since the 18th century, and what specific sound changes have occurred.

The analysis is based on a vocabulary list that is derived from the original 740word list in XFYY (quoted from Nishida 1973: 118-160). The original list in Nishida (1973) has been shortened (1) to include only lexical words (e.g. 'sun', Nishida 1973: 118) and no phrases (such as 'the sun rises', 'the sun sets', ibid., p. 119); and (2) to include only those words for which a corresponding Modern Duoxu reading could be elicited. By applying the above criteria, the original 740word list has been reduced to a list of 283 words, which represents a mixture of basic vocabulary (e.g. 'sun', 'wind', 'body', 'heart', 'to eat', 'all') and cultural vocabulary (e.g. 'teachers', 'Buddhist priest', 'monastery, temple'). To facilitate statistical analysis of the data, I added to the list 17 basic words to bring the overall number of words to a round $300 .{ }^{10}$ The resulting list is provided in the appendix to this article. English glosses and the original Tibetan and Chinese transcriptions are quoted from Nishida (1973: 118-160). Nishida's

[^7]reconstructions of XFYY Duoxu forms on the basis of their Tibetan and Chinese transcriptions are provided for reference（ibid．）．${ }^{11}$ In the main text and in the appendix，XFYY entries are quoted in the following order：（1）Tibetan transliteration，（2）Chinese transcription in Chinese characters，（3）Nishida＇s reconstruction（marked with an asterisk）．In the main text，the Chinese transcriptions are accompanied by their SW Mandarin readings（provided to the right of the Chinese character）．${ }^{12}$ SW Mandarin readings are based on the vocabulary list of 3,000 items collected for the Chinese dialect of Mùlǐ by Lǐ Lán李蓝（p．c．）．Tone on Mandarin forms is not indicated，as the issue of tonal correspondences between Mandarin and Duoxu forms is not essential for the present argument．

A comparison of Modern Duoxu with the Duoxu of XFYY reveals that the two stages of the language are still recognizably quite similar．Only 41 words（or $14.5 \%$ of 283 words）appear etymologically unrelated between the two varieties． Two points are worth mentioning．First，the changes in the vocabulary clearly reflect the change of cultural influences of the Duoxu，essentially，from Tibetan to predominantly Chinese and Yi．No less than 12 words（or 4\％）are cultural words， namely，＇teachers＇，＇students’，＇Buddhist priest＇，＇monastery，temple＇，＇key＇， ＇bell＇，＇conch shell＇，＇god＇，＇book＇，＇ink＇，＇flower＇，＇incense＇．In all these cases， the original Tibetan loan has been replaced by a Chinese or a Nuosu Yi loan．For example，＇incense（227）＇is XFYY sog，梭 so，${ }^{*-}$ so．（which is likely a loan from Tibetan，WT bsang）．In Modern Duoxu，this word has been replaced by a borrowing from Chinese，$/ \boldsymbol{c a}^{32}\left[-\mathrm{no}^{53}\right] /$（xiāng 香，SW Mandarin $/ \boldsymbol{\operatorname { l i a j }}{ }^{44} /$ ）．To take another example，the XFYY reading for＇monastery，temple（13）＇is dgon pa yag，公巴压 koy pa ja，${ }^{*-}$ gun ${ }^{-}$pa－ya．．（This word is a loan from Tibetan， $d g o n ~ p a$ ；the morpheme $/ \mathrm{ja}^{44} /$ is a native Duoxu word for＇house＇．）Conversely， the Modern Duoxu form for＇temple＇is／be ${ }^{44} \mathrm{ja}^{44} /$ ，which is a loan from Nuosu Yi， bbur yi $\left[\mathrm{bu}^{33} \mathrm{zi}^{33}\right]$＇shrine，temple＇．${ }^{13}$

[^8]Correspondences between Modern Duoxu forms and the 18th century Tibetan and Chinese transcriptions of their meaning equivalents in XFYY are generally regular．Consider the following examples．The Tibetan rhyme－ad regularly corresponds to Modern Duoxu／e／．${ }^{14}$ Examples include：＇daytime（58）＇（XFYY nad rko，奈孤 lai ku，＊nai ${ }^{-} \mathrm{ku}$ ，Duoxu $/ \mathrm{ne}^{44}-\mathrm{gu}^{44}$ ）and＇white（167）＇（XFYY wad kyog，歪觉 wai tço，＊－wai＇co．；Duoxu／we ${ }^{44}-\mathrm{t} \mathrm{tco}^{44} /$ ）．To take another example，Chinese character 觉／t $\mathrm{t} o /$ regularly corresponds to Modern Duoxu ／tco／．Examples include：＇to be hard（41）＇（XFYY khog skyog，课觉 $\mathrm{k}^{\mathrm{h}} \mathrm{t}$ t C 0 ， ＊＇khö．＇co．；Duoxu $/ \mathrm{k}^{\mathrm{h}} \mathrm{o}^{53}-\mathrm{t} \mathrm{co}^{32}$ ），＇between，in the middle（188）＇（XFYY sku kyog，孤觉 ku tढ̣o，${ }^{*}$ ku＿co．；Duoxu $/ \mathrm{go}^{32}$－ $\mathrm{tco}^{44} /$ ），and＇white＇（as above）．

The phonological system does not appear to have changed considerably between XFYY Duoxu（cf．Nishida 1973：116）and Modern Duoxu，as represented by the speech of the conservative group of speakers．Furthermore，an examination of correspondences between Modern Duoxu and its earlier attestations in XFYY suggests many parallels between synchronic phonetic variation and change（as discussed in section 2）and diachronic change．The following correspondences between Modern Duoxu and XFYY Duoxu are a case in point：
（1）Modern Duoxu forms with the initial／n／vs．XFYY forms with the initial $/ 1 /$ ，or vice versa（the distinction between $/ \mathrm{n} /$ and $/ \mathrm{l} /$ can be ascertained on the basis of Tibetan transcriptions）
（a）＇moon（3）＇：／ $\mathrm{ne}^{32}-\mathrm{ma}^{53} /$ ：XFYY lam ma，良麻 niay ma，＊＇lan＇ma
（b）＇south（178）＇：$/ \mathrm{ne}^{32}-\mathrm{t}^{\mathrm{h}} \mathrm{o}^{44} /:$ XFYY lho phyogs，鲁鹊 lu t $\mathrm{c}^{\mathrm{h}} \mathrm{o}$（where the Tibetan transcription represents the standard WT spelling for＇south＇），＊＿lu｀tsho．
（c）possibly，also＇age，year（85）＇：／ne ${ }^{44} /:$ XFYY lug，遛 nizu，＊＇liu．
Additional support for the interpretation of the Duoxu form for＇age，year＇as ／lju／comes from other forms in XFYY，which are transcribed with Tibetan lug and the Chinese phonetic 留／nizu／．These are：（i）＇to plunder（284）＇：XFYY su lug，续骝 $¢ \mathrm{y}$ niəu，＊｀śu＇liu．，Modern Duoxu／$\left[\mathrm{cu}^{44}\right] \mathrm{lju}{ }^{53}$／；（ii）＇to eat，edibles （221）＇：XFYY byi lug，唧留 tçi niəu，＊＇dzi＇liu．，Modern Duoxu／dzi ${ }^{32}-\mathrm{lju}^{32} /$ ．
（d）＇tiger（206）＇：／la ${ }^{32}$ ：XFYY nag＇phag，拏 la，＊＇na．｀pha．
These correspondence patterns（ $/ \mathrm{n} /$ to $/ 1 /$ ，or vice versa）are parallel to the variation between $/ \mathrm{n} /$ and $/ \mathrm{l} /$ in Modern Duoxu．
（2）Marginal prenasalization or absence of prenasalization in some Modern Duoxu forms vs．prenasalization on some XFYY forms（as based on their Tibetan transcriptions）（I take the WT $a$－chung in the left－graph position to represent prenasalization of a following stopped consonant，cf．Beyer 1992：47，fn．10．）
（a）＇gate，door（129）＇：Duoxu［dza $\left.{ }^{53}\left(-\mathrm{pu}^{32}\right)\right]$ or $\left[\mathrm{ndza}^{53}\left(-\mathrm{pu}^{32}\right)\right]$ ：XFYY＇jag，架 t $\mathrm{c} a$ a，＂${ }^{\text {j }}$ ．
（b）＇mountain（24）＇：Duoxu［ba $\left.{ }^{44}\right]$ or［mba $\left.{ }^{44}\right]$ ：XFYY＇pag，巴 pa，＊－pa．
（c）＇smoke（16）＇（literally，＇sky－smoke＇）：Duoxu $/ \mathrm{me}^{32}-\mathrm{k}^{\mathrm{h}} \mathrm{a}^{44} /$ ：XFYY dme＇ khag，麦卡 mei k ${ }^{\text {ha，}}$＂${ }^{\text {mai }}$＿kha．

[^9]（3）Modern Duoxu／w／（synchronically in variation with／ $\mathrm{y} /$ ）vs．XFYY forms with the initial $/ \mathrm{w} /$ or with velar or glottal fricative initials
（a）Modern Duoxu／w／：XFYY／w／
（i）＇rain（12）＇：Duoxu／wa ${ }^{53}-\mathrm{dzu}{ }^{32} /:$ XFYY wa＇ju，凹鞠 wa tçiu，＊－wa -ju

（iii）＇wine（155）＇：Duoxu $/ \mathrm{wu}^{53} /$ ：XFYY wo，雾 u ，＊＇wu
（iv）＇rat（203）＇：Duoxu／ $\mathrm{wu}^{53}-\mathrm{pu}^{32} /:$ XFYY wu，务 u ，＊｀wu
（b）Modern Duoxu／w／：XFYY velar or glottal fricative initials
（i）＇rich man（83）＇：Duoxu $/ \mathrm{wa}^{32} \mathrm{ma}^{44} /:$ XFYY hag mag，哈妈 xa ma，＊－ ha．－ma．
（ii）＇road（28）＇：Duoxu $/ \mathrm{wa}^{44}-\mathrm{ma}^{44} /:$ XFYY hag mag，哈马 xa ma，${ }^{*-}$ ha． ＿ma．
（iii）＇bear（201）＇：Duoxu／wa ${ }^{44 /}$ ：XFYY hag，哈 xa，＊－ha．
The Tibetan and Chinese transcriptions of these three Duoxu forms point to a velar or a glottal fricative initial．${ }^{15}$ The change from a velar or glottal fricative in XFYY Duoxu to／w／in Modern Duoxu is parallel to the variation and change involving $/ \mathrm{w} /$ and $/ \mathrm{\gamma} /$ sounds in Modern Duoxu（due to the acoustic similarity of these sounds，cf．Ohala \＆Lorentz 1977；Ohala 1979）．
（c）（sporadically，also）Modern Duoxu／w／：XFYY nasal initials
‘outside（187）＇：Modern Duoxu $/ \mathrm{wa}^{32}-\mathrm{p}^{\mathrm{h}} \mathrm{o}^{53} /:$ XFYY no phog，怒破 lu $\mathrm{p}^{\mathrm{h}} \mathrm{o}$ ， ＊｀nu｀pho．

An example of an inverse relationship（Modern Duoxu velar nasal initial ： XFYY／w／）can be noted：
‘silver（223）＇：Duoxu $/ \mathrm{yo}^{44} /$ ：XFYY wo，物 $u$ ，＊‘wu
This is again parallel to the sporadic alternation involving Modern Duoxu［w］ and［ n$]$ ．

The noted changes between Modern Duoxu and XFYY Duoxu parallel the synchronic phonetic variation and change in Modern Duoxu，as discussed in section 2 ．A similarity in the patterns of variation and change suggests a similarity in the causes for variation and change，which may be attributed，at least in part，to external influence from SW Mandarin（which has been in ever increasing contact with Duoxu over the last two hundred years）．This influence is essentially manifested in the reduction of those phonological distinctions that do not exist in Mandarin．As a result，among the two stages of the language（XFYY Duoxu and Modern Duoxu），we again observe change from a phonologically more complex variety（XFYY Duoxu）to a phonologically more reduced variety（Modern Duoxu）．In other words，even the conservative variety of Modern Duoxu as attested in recent fieldwork represents a simplified version of XFYY Duoxu，and it is likely to have been considerably remodeled on the basis of SW Mandarin patterns．

[^10]
## 4. Cross-language comparison: Duoxu and Ersu \& Lizu

This section extends the comparison between the 300 basic words in XFYY Duoxu and Modern Duoxu to the corresponding words in Ersu and Lizu. ${ }^{16}$ It uses insights gained in the examination of synchronic variation in Modern Duoxu and diachronic change between XFYY Duoxu and Modern Duoxu to re-examine the relationship between Duoxu and its two putative sister languages, Ersu and Lizu. The discussion essentially relates to the issues of percentages of cognate sets and morphosyntactic differences between the three languages, as raised in Huáng \& Yǐn (2012).

An examination of correspondences between Modern Duoxu, its earlier attestations in XFYY, on the one hand, and Ersu and Lizu, on the other hand, suggest that the three languages have many related words in common. Furthermore, there are regular sound correspondences that exist between them. Two types of correspondences can be distinguished.
(1) Correspondences, involving sounds that are phonetically similar. This category can be illustrated with labial sounds in the three languages, as in Table 3.

| Correspondence pattern | Gloss | Dиохи | Ersu | Lizu |
| :---: | :---: | :---: | :---: | :---: |
| $p: p: p$ | 'to arrive (262)' | $/ \mathrm{pa}^{53}=1 \mathrm{la}^{32}$ | /pà = lá/ | /RP[de-]pıæ/ |
| $\mathrm{p}^{\mathrm{h}}: \mathrm{p}^{\mathrm{h}}: \mathrm{p}^{\mathrm{h}}$ | 'to lean on' | / $\mathrm{p}^{\mathrm{h}} \mathrm{a}^{53}-\mathrm{ga}{ }^{32}$ | /phà-zgá/ | $/^{\text {RP }} \mathrm{p}^{\mathrm{h}}$--gæ/ |
| b: b:b | 'not listen (296)' | $\mathrm{ma}^{32}=\mathrm{ba}^{3} \mathrm{na}^{32}$ | /mà = bánì/ | /ipmæ $=$ bæji/ |
| m:m:m | 'many (241)' | /mja ${ }^{53}$ | /mí/[mjé] | /Remjw-mjæ/ |
| w: w : w | 'pig (215)' | /wo ${ }^{32}$ | /vé/ | /F Wo/ |

Table 3: Examples of correspondences involving labial initials in Duoxu, Ersu, and Lizu
These correspondence sets also illustrate the vowel correspondence a : a : æ between Duoxu, Ersu, and Lizu, respectively. (The fronting and raising of the vowel in the Ersu form for 'many' is due to the assimilatory effect of the medial glide -j -. This glide has distinct historical developments in the three languages, as discussed in Chirkova \& Handel 2013b. Correspondence patterns with Duoxu /w/ are complex, as discussed below.)
(2) Correspondences, involving sounds that are not superficially phonetically similar. In the light of the discussion in the preceding sections, some correspondences of this type may be understood as being due to long-standing influence from SW Mandarin on Duoxu. To appreciate this point, one needs to take into account the fact that Ersu and Lizu are more complex than Duoxu in terms of the overall number of phonological distinctions. To take the

[^11]Miǎnníng variety of Lizu（a close neighbor of Duoxu for several centuries）as an example，the essential differences of the consonantal system of Duoxu from that of Lizu are in the presence in the system of Lizu of（a）a voiceless lateral fricative （／4／），（b）contrastive prenasalized voiced and voiceless aspirated stops and affricates，and（c）consonantal clusters with the medial glide－w－（cf．Yu 2012：6－ 8）．Correspondences between Duoxu and Ersu \＆Lizu，which involve sounds that are not superficially phonetically similar and that are likely to reflect external influence from SW Mandarin，essentially relate to those phonological distinctions that exist in Ersu and Lizu，but do not exist in Duoxu and SW Mandarin．Consider the following correspondence sets：
（1）Duoxu／l／：Ersu \＆Lizu／4／
Examples include：
（a）＇lightning（7）＇：Duoxu $/ \mathrm{la}^{32} /(X F Y Y$ dme lag，墨拉 mei la，＊’mö－la．）： Ersu／［mé－］ijó／：Lizu／${ }^{\text {RP }}[\mathrm{me}-] 4 \mathrm{c} /$
（b）＇month（45）＇：Duoxu／lja ${ }^{32 /}$ ：Ersu／\＆á／：Lizu／Fłæ／
（c）＇god（171）＇：Duoxu $/ \mathrm{la}^{34 /}$＇god＇：Ersu／4à／：Lizu／iæ／
（d）＇ladder（150）＇：Duoxu $/ \mathrm{t}_{\mathrm{c}} \mathrm{e}^{44} \mathrm{le}^{44} /$（XFYY dzed le，结列 t C iع nic，＊＇dze． ｀le）：Ersu／híțśnzi／：Lizu／LP ${ }^{\text {etçi／}}$

This change can be viewed as an instance of the replacement in Duoxu of a segment that does not exist in the phonological system of the dominant contact language SW Mandarin（that is，$/ 4 /$ ），with a segment that exists in the phonological systems of SW Mandarin（that is，／l／）．

Following the replacement of $/ 4 /$ by $/ 1 /$ ，the latter can further merge with $/ \mathrm{n} /$ ，as part of the gradual loss of the distinction between $/ 1 /$ and $/ \mathrm{n} /$ in Duoxu under the influence of SW Mandarin．This change can be observed in the following words：
（e）＇moon（3）＇：${ }^{17}$ Duoxu／ne ${ }^{32}\left[-m a^{53}\right] /$（XFYY lam ma，良麻 niay ma，＊＇lan ＇ma）：Ersu／łá $\left[-\mathrm{p}^{\mathrm{h}} \varepsilon\right.$ ］$]:$ Lizu ${ }^{/ \mathrm{LP}} \ddagger æ\left[-\mathrm{p}^{\mathrm{h}} \mathrm{e}\right] /$

[^12]（f）＇south（178）＇：Duoxu $/ \mathrm{ne}^{32}$－ $\mathrm{tc}^{\mathrm{h}} \mathrm{o}^{44} /$（XFYY lho phyogs，鲁鹊 lu t $\mathrm{C}^{\mathrm{h}} \mathrm{O}$ ，

（2）Duoxu plain initials ：prenasalized initials in Ersu \＆Lizu
Examples include：
（a）＇gate，door（129）＇：Duoxu［dza $\left.{ }^{53}\left(-\mathrm{pu}^{32}\right)\right]$ or $\left[\mathrm{ndza}^{53}\left(-\mathrm{pu}^{32}\right)\right]$（XFYY＇jag，

（b）＇mountain（24）＇：Duoxu［ba ${ }^{44}$ ］or［mba ${ }^{44}$ ］（XFYY＇pag，巴 pa，${ }^{*-}$ pa．）： Ersu／Nbí／：Lizu／${ }^{\text {R }}$ Nbje／
（c）＇smoke（16）＇（literally，＇sky－smoke＇）：Duoxu $/ \mathrm{me}^{32}-\mathrm{k}^{\mathrm{h}} \mathrm{a}^{44} /$（XFYY dme＇


This change can be viewed as yet another example of the replacement of those segments that do not exist in the contact variety of Duoxu，SW Mandarin，with those segments that exist in that variety．Prenasalization on voiceless initials is likely to have been lost in Duoxu first（as we find no indications of possible prenasalization in the words above in the Tibetan transcriptions in XFYY）． Prenasalization on voiced initials is likely to have persisted longer，and it is also marginally attested in Modern Duoxu．This is presumably due to the phonetic affinity between prenasalization and voiced initials（cf．Ohala 1983：194－201）．
（3）Multiple correspondences between Duoxu／w／and various initials in Ersu \＆Lizu（cf．Nishida 1976：5）．These correspondences are parallel to the variation between $/ \mathrm{w} /$ and $/ \mathrm{\gamma} /$ in Modern Duoxu（as discussed in section 2），and to that between Modern Duoxu／w／and various（velar or glottal）initials in XFYY Duoxu （as discussed in section 3）．

Examples include：
（a）Duoxu／w／：Ersu \＆Lizu／w／
 Ersu／ỳlíl ：Lizu ${ }^{\text {LP }}$ wuli／
（b）Duoxu／w／：Ersu \＆Lizu velar initials（stop，fricative，nasal）
（i）＇rat（203）＇：Duoxu $/ \mathrm{wu}^{53}-\mathrm{pu}^{32 /}$（XFYY wu，务 $u$ ，＊＇wu）：Ersu／gv́－phá／： Lizu ${ }^{\text {RP }}$ yo－p ${ }^{\mathrm{h}} æ /$
（ii）＇wine（155）＇：Duoxu $/ \mathrm{wu}^{53 /}$（XFYY wo，雾 u，＊ww）：Ersu／ỵ／：Lizu $/{ }^{\mathrm{R}}$ уо／${ }^{\mathrm{R}}$ ко］
（iii）＇bear（201）＇：Duoxu／wa ${ }^{44 /}$（XFYY hag，哈 xa，${ }^{*-h a .) ~: ~ E r s u ~ / x a ̊ ́ / ~: ~ L i z u ~}$ ／Ryo／
（c）Duoxu／w／：Ersu \＆Lizu clusters with／w／
（i）＇rain（12）＇：Duoxu／wa ${ }^{53}-\mathrm{dzu}^{32} /$（XFYY wa＇ju，凹鞠 wa tçiu，＊－wa ${ }^{-\mathrm{ju}}$ ） ：Ersu／gwà－zó／：Lizu ${ }^{\text {RP }} \mathrm{Ngwæ-ze/}$
（ii）＇chicken，hen（213）＇：Duoxu／wo ${ }^{53 /}$（XFYY＇od，饿 o，＊｀fö．）：Ersu／rá／： Lizu ${ }^{\text {R }}$ dwæ／

In sum，correspondences between Duoxu and Ersu \＆Lizu that involve sounds that are not superficially phonetically similar may at least in part be explained under the assumption of the reduction in Duoxu of those phonological distinctions that do not exist in SW Mandarin and of their replacement with those
phonological distinctions that exist in SW Mandarin．This entails that the phonological system of Duoxu was originally more complex than those attested in XFYY Duoxu or Modern Duoxu，and that it was likely similar to that of Ersu and Lizu．

Recognizing the influence of SW Mandarin on Duoxu allows one to recognize higher percentages of shared vocabulary between Duoxu，Ersu，and Lizu than what was previously reported in the literature（Sūn 1982；Huáng \＆Yǐn 2012）． Under this analysis，only 65 words（or $21.6 \%$ of the entire vocabulary list）appear to be etymologically unrelated in the three languages．In addition， 9 words（or $3 \%$ ）are dissimilar in Duoxu and Ersu，but similar in Duoxu and Lizu．Finally，in 11 cases（3．6\％），Duoxu shows a recent development whereby Modern Duoxu has replaced certain forms（that were recorded in XFYY as cognate with Ersu and Lizu）by new words．${ }^{18}$ Therefore，it appears that Duoxu has been growing more distant（at least，lexically）from Ersu and Lizu over the last two hundred years．In sum，over $80 \%$ of all words on the list appear to be related in the three languages． These estimates are considerably higher than those in Sūn 1982 （50\％）or in Huáng \＆Yǐn 2012 （40 to 42\％）．

In addition to evaluating cognacy of lexical items and sound correspondences across the related words，it is also possible to carry out morphosyntactic analysis on some of the recorded vocabulary in order to assess morphosyntactic properties and compare them across languages．The following observations can be made on the basis of the vocabulary list．

First，contra Huáng \＆Yǐn（2012），it can be noted that Duoxu has directional prefixes．The most frequent directional prefix，which is also reflected in the vocabulary list in this study，is／mi－／．This prefix indicates an upward direction，as in＇to raise（286）＇：Duoxu $/ \mathrm{mi}^{32}-\mathrm{t}^{\mathrm{h}} \mathrm{i}^{32} / .{ }^{19}$ Additional examples include：$/ \mathrm{mi}^{32}$－ $\mathrm{p}^{\mathrm{h}} \mathrm{je}^{34 /}$＇to spit out＇（from $/ \mathrm{p}^{\mathrm{h}} \mathrm{je}^{34 /}$＇to $s p i t$＇），$/ \mathrm{mi}^{32}-\mathrm{k}^{\mathrm{h}} \mathrm{o}^{53 /}$＇to give out，give in marriage（a daughter）＇（form $/ \mathrm{k}^{\mathrm{h}} \mathrm{o}^{53 /}$＇to give（277）＇），$/ \mathrm{mi}^{32}-\mathrm{ka}^{44} /$＇take off （clothes）＇（from $/ \mathrm{ka}^{44 /}$＇to take off（283）＇）．This prefix is also used to denote the perfective aspect，as in the following examples：$/ \mathrm{mi}^{32}-\mathrm{t}^{\mathrm{h}} \mathrm{a}^{53} /$＇have sold＇，$/ \mathrm{mi}^{32}$－ $30^{32}=1 a^{44} /$＇have thrown away；have lost＇，$/ \mathrm{mi}^{32}-\mathrm{t}^{\mathrm{h}} \mathrm{e}^{32}-\mathrm{t}^{\mathrm{h}} \mathrm{e}^{44 /}$＇have released＇， $/ \mathrm{mi}^{32}-\mathrm{tsa}^{33}=\mathrm{la}^{44} /$＇have repaid（a debt）＇（from $/ \mathrm{tsa}^{34} /$＇to repay（280）＇）．Another Duoxu high frequency directional prefix is $/ \gamma-/$ ，which denotes a downward direction，as in $/ \gamma^{32}-t^{h} \mathrm{i}^{32 /}$＇to lower（e．g．the head）＇，$/ \gamma^{32}-\mathrm{ni}^{32 /}$＇to sit down＇． Additional directional prefixes，of lesser frequency，include／dzi－／＇upward＇（as in the verb $/ \mathrm{dzi}^{32}-\mathrm{la}^{32} /$＇to enter（266）＇in the vocabulary list，which means＇to come up＇in Modern Duoxu），and／na－／，which tentatively denotes reciprocal action in some verbs，such as $/ \mathrm{na}^{32}-\mathrm{dza} \mathrm{a}^{32 /}$＇to love＇（from／dza ${ }^{32 /}$＇to like，to love（254）＇）， and $/ \mathrm{na}^{32}-\mathrm{d} 3 \mathrm{e}^{34} /$＇to scold＇．

[^13]The morpheme /ta/, which is frequently used with verbs in XFYY (as in /pad dag, 擺大 pai ta, *_pai `da/ 'to arrive (262)' is a durational auxiliary, corresponding to Modern Duoxu /ta/, modern Ersu /ta/, and modern Lizu /tca/. The morpheme /la/, as in the Modern Duoxu and Ersu forms for 'to arrive' ( $/ \mathrm{pa}^{53}=1 \mathrm{a}^{32} /$ and $/ \mathrm{pa}=$ lá/, respectively), is likely to be related to the verb 'to come (260)' and it indicates completion.

The three languages have agentive and patient nominalizers with the same meaning and of comparable form. The agent nominalizer can be illustrated with the form for 'thief (87)', which is Duoxu $/ \mathrm{mu}^{44}-\mathrm{cu}^{32} /$, Ersu $/ \mathrm{Np}^{\text {hò }}$-ssý/', and Lizu $/{ }^{\mathrm{EP}} \mathrm{p} \int \mathrm{e}-\mathrm{su} /$. The morphemes $/ \mathrm{cu} /$, $/ \mathrm{sv} /$, and $/ \mathrm{su} /$, respectively are agent nominalizers meaning 'person, man', whereas the preceding verbal root means 'to steal'. The same agent nominalizer can also be seen in the autonyms of the groups,
 be illustrated with the form 'things to eat, edibles (221)', which is Duoxu /dzi ${ }^{32}$ $1 \mathrm{ju}{ }^{32}$ /, Ersu /dzz̀-líl, Lizu / ${ }^{\text {RP }} \mathrm{dzz}-\mathrm{lje} /$. The morphemes /lju/, /li/, and /lje/ are patientive nominalizers in the three languages, and the preceding verbal root means 'to eat'.

The three languages share similar classifier systems with identical cognate classifier forms, such as /pu/ 'item' (as in 'gate, door (129)': Duoxu /dza ${ }^{53}-\mathrm{pu}^{32}$, Lizu $/{ }^{L \mathrm{P}} \mathrm{Ng} æ-\mathrm{pu} /$ ) or $/ \mathrm{ka} /$ (or/ga/), classifier for elongated objects (as in '(one) river (cf. 27)', Duoxu $/ \mathrm{wu}^{44}-\mathrm{ga}^{32}$ /, Ersu /ḑ̣̣́ tá-ká/, Lizu ${ }^{\text {RP }}$ dze te-kæ/, where Ersu /ta/ and Lizu /te/ both mean 'one').

In sum, Duoxu, Ersu, and Lizu share considerable percentages of related words, they are likely to originally have had comparable phonemic inventories, they have a similar morphosyntactic structure, and they have related function words and classifiers. It is therefore reasonable to assume that Duoxu is in fact closely related to Ersu \& Lizu. The superficial differences between Duoxu and Ersu \& Lizu can be attributed to long-standing and on-going contact influence from SW Mandarin.

## 5. Discussion and conclusion

This study presented new fieldwork data and new analysis of the critically endangered and virtually undescribed Duoxu language. It compared the newly collected data with earlier attestations of Duoxu in XFYY, dating from the 18th century, as well as with the two putative sister languages of Duoxu, Ersu, and Lizu. Parallels were found between variation and change across time (the two stages of Duoxu) and across languages (Duoxu vs. Ersu \& Lizu). These were identified as being due to long-standing influence from SW Mandarin. Related changes mostly manifested themselves in the reduction of those (original) phonological distinctions that do not exist in the contact language of Duoxu, SW Mandarin. Assuming that the phonemic inventory of Duoxu was originally comparable to that of Ersu and Lizu, a comparison across time and across languages (as in sections 2-4) allows us to tentatively reconstruct the following course of sound change in Duoxu under the contact influence of SW Mandarin:
(1) (before the stage recorded in XFYY) the replacement of the lateral fricative /4/ with the lateral approximant /l/
(2) (before the stage recorded in XFYY) the replacement of prenasalized voiceless aspirated stops and affricates with plain voiceless aspirated stops and affricates
(3) (before the stage recorded in XFYY) the replacement of clusters with -wwith / w/
(4) (before the stage recorded in XFYY and the stage recorded in XFYY ) the replacement of some velar and/or glottal stops and fricatives with /w/
(5) (the stage recorded in XFYY until present) the replacement of prenasalized voiced stops and affricates with plain voiced stops and affricates
(6) (presently) the replacement of $/ \mathrm{y} /$ with $/ \mathrm{w} /$ and of $/ \mathrm{z} / \mathrm{with} / \mathrm{j} /$
(7) (presently) the replacement of voiced stops and affricates with voiceless stops and affricates.

It is noteworthy that most changes (1-7) appear to have developed incrementally over a relatively long period of time. This is consistent with findings in bilingual speakers of other endangered languages (such as Washo [Yu 2008] or Northern Paiute [Babel 2009]) that categorical changes (such a replacement of one segment with another) are preceded by a series of gradient phonetic changes without neutralizing phonological contrasts. The pace of change has clearly accelerated in Modern Duoxu, due to a break-down in language transmission and the dramatically reduced number of speakers. Hence the urgency of its documentation and study.

Understanding diachronic change in Duoxu as being constrained by interference from SW Mandarin allows one to recognize more shared lexical items between Duoxu, Ersu, and Lizu than what was previously reported in the literature. While higher percentages of related words suggest that the three languages are closer than previously argued, these higher percentages do not necessarily entail that the three languages have an especially close relationship. Obviously, the high percentages need to be coupled with detailed cognate sets and diagnostic evidence (such as shared innovative changes between the three languages and paradigm-like sets of cognate words and/or morphological markers) (cf. Nichols 1996, LaPolla 2013). Work in this direction is in progress as part of an ongoing historical-comparative study of Ersu, Lizu, and Duoxu (collectively ELD) (Chirkova \& Handel 2013a, 2013b; Chirkova \& Handel ms.).

This study seeks to improve on Dominic Yu's (2012) solid reconstruction of a recent common ancestor of Ersu and Lizu, by adducing Duoxu data and providing reconstructed sounds that are consistent with phonetically-motivated sound change. One recent finding can be noted as suggestive of an especially close relationship between Ersu, Lizu, and Duoxu: the voiceless nasal correspondence pattern that can set Ersu, Lizu, and Duoxu apart from other languages in the region. More specifically, voiceless nasals (*m *n *in ) are posited in the recent common ancestor of Ersu, Lizu, and Duoxu (Proto-ELD) on the basis of cognate sets like the following for 'bamboo' (Chirkova \& Handel 2013a, ms.):
'bamboo (192)': Ersu /xì/, Lizu /Fhẽ/, Duoxu $/ \mathrm{mi}^{44}$ / (suggesting the ProtoELD initial/m/)

This ELD correspondence pattern correlates highly with various kinds of nasals within Tibeto-Burman, most notably with *sN clusters that are known to
develop into voiceless nasals in some TB languages. To take the word 'bamboo' as an example, the corresponding Proto-Tibeto-Burman form is $*_{\mathrm{s}-\mathrm{m}(\mathrm{y}) \mathrm{ik}}$ 'bamboo sprout', and that in Written Burmese is /hmyi?/ 'bamboo shoot'.

Taking a greater degree of manner agreement in nasal-initial cognates between languages to reflect a close historical relationship, the voiceless nasal correspondence pattern in the ELD cluster suggests that the three languages are closely related to each other. This corroborates Sūn's view of a close relationship between Ersu, Lizu, and Duoxu. However, if mutual intelligibility is taken as the main criterion, Ersu, Lizu, and Duoxu need to be seen as separate languages, and not as dialects of one Ersu language (cf. Yu 2012: 1). Naturally, much more work is required to establish beyond doubt a close relationship between Ersu, Lizu, \& Duoxu, and their position within the broader Tibeto-Burman family.

From a broader perspective, Duoxu provides a window on contact-induced change in the historically multi-ethnic region that is Western Sichuān and Southwest China in general, where language attrition and contact-induced change are an integral part of the larger picture of linguistic dynamism and variability. Documenting and understanding the precise features and the mechanism of loss and change in multilingual communities have significance for linguistic comparison and for our understanding of the recent histories of the local languages. The need to document and understand the features and the mechanism of loss and change in multilingual communities also highlights the interest and importance of variationist research of these languages involving multiple speakers (cf. Stanford \& Preston 2009). As a bonus, an increased complexity of investigation provides more versatile and rich documentation data, which are essential for an adequate analysis and preservation of endangered languages, such as Duoxu.

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Appendix：Duoxu－Ersu－Lizu basic vocabulary list with transcriptions from
Duoxu vocabularies as recorded in Xīfān Yìyŭ（Nishida 1973：118－160）
The following English－Duoxu－Ersu－Lizu vocabulary list with transcriptions from Duoxu vocabularies in Xīfān Yìyǔ（hereafter XFYY）comprises 300 words．Xīfān Yìyǔ data－Tibetan and Chinese transcriptions（in simplified characters），Duoxu reconstructions，and English glosses－are all quoted from Nishida（1973：118－ 160）．Duoxu，Ersu，and Lizu data are from my personal fieldwork．Ersu data are based on the variety of Gānluò（甘洛）county；Lizu data on the variety of Kǎlā（卡拉）township of Mùlǐ（木里）county．See Chirkova et al．（forthcoming）and Chirkova \＆Chen（2013）for phonetic－phonological sketches of Ersu and Lizu， respectively．In the transcriptions of words，＇－＇stands for morpheme boundary and＇$=$＇stands for clitic boundary．Morphemes that are non－cognate across the languages are put in square brackets．

Written Tibetan（WT）forms for Tibetan loans in Duoxu，Ersu，and Lizu are provided in footnotes，unless the standard WT spelling is already part of the XFYY Tibetan transcriptions of the words in question．

Shaded cells in the column＂Gloss＂indicate that Duoxu form is not cognate to the Ersu and／or Lizu forms．Shaded cells in the column＂XFYY＂indicate that modern Duoxu form is not etymologically related to the XFYY form．

| No | Gloss | XFYY | Dиохи | Ersu | Lizu |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | heaven ${ }^{20}$ | drmi＇，墨，＊möö | $\left[\mathrm{na}^{32} \mathrm{k}^{\mathrm{h}} \mathrm{a}^{44}-\right] \mathrm{me}^{32}$ | mè［－tsó］ | ${ }^{\mathrm{RP}}\left[\mathrm{neNk}^{\text {h }} \mathrm{e}\right] \mathrm{me}$ |
| 2 | sun | ne ma，乃麻，＊nai ma | $n \mathrm{e}^{44}-\mathrm{ma}^{44}$ | njò－má | ${ }^{\text {LPP }} \mathrm{j} \mathrm{i}$－ma |
| 3 | moon | lam ma，良麻，＊＇lan＇ma | $\mathrm{ne}^{32}\left[-\mathrm{ma}^{53}\right]$ | tá［－p ${ }^{\text {h }}$ ¢ $]$ | ${ }^{\text {LP }} \downarrow \times\left[-\mathrm{p}^{\mathrm{h}} \mathrm{e}\right]$ |
| 4 | star | kir，更，＊－kön | $\mathrm{ki}^{34}$ | trí | ${ }^{\mathrm{R}} \mathrm{t}$ ¢ O |
| 5 | cloud | jag，甲，$=$ ja． | t $6^{34}$ | tsś | ${ }^{\text {R }}$ tge |
| 6 | thunder | dme jig，墨吉，möji． | me ${ }^{32}$－dzi ${ }^{32}$ | mè̀dzź | ${ }_{\text {RPPe－de }} \mathrm{me}$－dze |
| 7 | lightning | dme lag，墨拉，＊mö－la． | $1 \mathrm{a}^{32}$ | ［mé－］lió | ${ }^{\mathrm{RP}}$［me－］le |
| 8 | frost | keg，隔，＊ $\mathrm{kö}$ ． | $\mathrm{ke}^{34}$ | ［tsź－］tró | ${ }^{R}$ |
| 9 | snow | we，噎，＊－we | je ${ }^{32}$ | z̀ | ${ }_{\text {Fi }}$ |
| 10 | fog ${ }^{21}$ | nu mo，諾模，＊no mo | t $6^{34}$ | trź | ${ }^{\mathrm{R}} \mathrm{t}$ I |
| 11 | dew | ji hin，呢恨，＂${ }^{\text {ni｀hön }}$ | $\left[\mathrm{ke}^{32}\right] \mathrm{x}^{53}, \mathrm{ni}^{32}$ | ș̣̂［－xé］ | ${ }^{\text {EP }}$ Su［－hẽ］ |
| 12 | rain | wa＇ju，凹鞠，＊－wa－ju ${ }^{22}$ | wa ${ }^{53}$－dzu ${ }^{32}$ | gwà－zó | RPNgwæ－ze |
| 13 | hail | tshu，族，＊＇tsu | $\mathrm{ts}^{\text {h }} \mathrm{u}^{34}$ | $\mathrm{Nts}{ }^{\text {b }}$ V | ${ }^{\mathrm{F}} \mathrm{Nts}{ }^{\mathrm{h}} \mathrm{u}$ |
| 14 | wind | dme li，墨利，＂möó｀li | $\mathrm{me}^{32}-\mathrm{le}{ }^{44}$ | $\begin{aligned} & \text { mé-lź [mé- } \\ & \left.\alpha_{1}\right] \end{aligned}$ | ${ }^{\mathrm{R}}$ me－lje |
| 15 | rainbow ${ }^{23}$ | lam rtog wo khe，良多乌刻，＊＇lan ${ }^{-t o}{ }^{-}$wu｀khö | $\begin{aligned} & 1 \mathrm{jay}{ }^{32} \mathrm{do}^{44} \\ & \mathrm{w}^{53} \mathrm{k}^{\mathrm{h}} \mathrm{e}^{32} \\ & \mathrm{ka}^{34} \partial^{34} \end{aligned}$ | mé－k ${ }^{\text {h }}$ a ${ }^{\text {a }}$ | ${ }^{\mathrm{RP}} \mathrm{me}-\mathrm{Nq}^{\text {he }}$ e |
| 16 | smoke | dme＇khag，美卡，＂mai kha． | $\mathrm{me}^{32}-\mathrm{k}^{\mathrm{h}}{ }^{44}$ | m ¢̀－Nk ${ }^{\text {che }}$ | ${ }^{\mathrm{R} P} \mathrm{me}-\mathrm{Nk}^{\mathrm{h}} \mathrm{e}$ |
| 17 | the sky is cleared | dme bde＇，墨德，＂mö ＇döö | $\mathrm{me}^{32}$－dje ${ }^{44}$ | mè－Ndé | ${ }^{\text {LP }}$ me［ne－ ］Nde |
| 18 | the sky is cloudy | dme zhag，墨呀，＊mö－ ya | $\mathrm{me}^{32}$－ $\mathrm{na}^{53}$ | mè－yá | ${ }^{\text {Lip }}$ me［ne－］ ye |
| 19 | （there is）rain | wa ju lag，凹鞠拉，＊－wa －ju－la． | wa ${ }^{53}-\mathrm{dzu}{ }^{32} \mathrm{la}^{44}$ | gwà－zó | ${ }^{\mathrm{RP}}$ Ngwæ－ze |
| 20 | earth | stag，大，＊＇ta． | da ${ }^{53}$ or $\mathrm{nda}^{53}$ | ［mé－］ljé | ${ }^{\text {LP }}$［me－］lje |
| 21 | water | wid，威，＊wi | wu ${ }^{44}$ | dzò | ${ }^{\text {R }} \mathrm{d} 3 \mathrm{e}$ |
| 22 | fire | mid，袐，＊mi． | mje ${ }^{32}$ | mè | Fme |
| 23 | stone | lo po，路补，＊lu＿pu | $1 \mathrm{ju}{ }^{53}$［－bu］ | lź［－k ${ }^{\mathrm{h}}$ wá］ <br> ［ớ－k $\left.{ }^{\mathrm{h}} \mathrm{wá}\right]$ | ${ }^{\text {LPP }}$ lo［－bu］ |
| 24 | mountain | ＇pag，巴，＊－pa． | $\mathrm{ba}^{44}$ or $\mathrm{Nba}^{44}$ | Nbí | ${ }^{\text {R Nbje }}$ |
| 25 | sand ${ }^{24}$ | mu shog，模说，＊－mo－ sho． | $\left[1 \mathrm{ju}{ }^{53}\right] \mathrm{oc}^{32}-\mathrm{da}^{43}$ | ṣátsź | ${ }^{\text {RPP }}$ So－lo |
| 26 | wall | lo tug，罗都，＊1o－tu． | dza ${ }^{32} \mathrm{xa}^{53}$ | réNbá | ${ }^{\text {LP }}$ lodze |
| 27 | river ${ }^{25}$ | ＇ud shag，威呷，＊wi－so． | $\mathrm{wu}^{44}\left[-\mathrm{ga}{ }^{32}\right]$ | dzò | ${ }^{\text {F }}$ d3e |

[^14]| 28 | road | hag mag，哈马，＊－ha． ma． | wa ${ }^{44}\left[-\mathrm{ma}^{44}\right]$ |  | ${ }^{\text {LP }}$ Јə［－p ${ }^{\text {h }}$－ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 29 | bridge | rcag，咱＊＇tsa． | dza ${ }^{44}$ | dzí | ${ }^{\text {F }} \mathrm{dze}$ |
| 30 | to be far | a ra me＇，啊墨，＊－fa －möö | wa ${ }^{44}-\mathrm{xe}^{53}$ | ř̇－şć | ${ }^{\mathrm{RP}} \mathrm{J} \partial \mathrm{-} \mathrm{Je}$ |
| 31 | to be near | a ni，阿呢，＊－fa＇ni | $\mathrm{wa}^{44}-\mathrm{ne}^{32}$ | rż－ní | ${ }^{\mathrm{RP}} \mathrm{J}$－${ }^{\text {－ni }}$ |
| 32 | to be long | he，黑，＊－he | $\mathrm{xe}^{34}$ | sć | ${ }^{\mathrm{RP}}$－ $\int \mathrm{e}-\int \mathrm{e}$ |
| 33 | to be short | skyen rtse，见节，＂cen ＇tse | $t 6 \mathrm{e}^{53}-\mathrm{tce}{ }^{32}$ | ḍzoodzơó | ${ }^{\text {RPP }} \mathrm{de}$－de |
| 34 | to be deep | na，那，＂na． | no ${ }^{34}$ | ənjó | ${ }^{\text {F }}$ ne［ ${ }^{\text {Frne］}}$ |
| 35 | to be shallow | tag tshi，大嗟，＊ta．－tse | $\mathrm{ba}^{32}$ | bż－bź | ${ }^{\text {EP }}$ Ndzi－Ndze |
| 36 | to be high | smo，摸，＊－mo | mo ${ }^{44}$ | Nbó | ${ }^{\text {RP }} \mathrm{Nb}$ ，${ }^{\text {a }}$－Nbıə |
| 37 | to be low | yag mo，压磨，＊－ya． ＇mo | $\mathrm{na}^{32}-\mathrm{mo}^{53} \text { or }$ | ní－ní | ${ }^{\text {EP }} \mathrm{j} \mathrm{i}-\mathrm{nje}$ |
| 38 | to be wide | hyed，歇＊－se． | $\mathrm{gi}^{44}\left[1 \mathrm{la}^{44}\right]$ | fí | ${ }_{\text {EP }}$ dzic［le］ |
| 39 | to be narrow | zhog，汝，\％zhu． | wu ${ }^{32}$ | zè－zź | ${ }^{\text {EPP }} 3 \mathrm{u}-3 \mathrm{u}$ |
| 40 | to be soft | ni mo，宜磨，＊＇ni mo | $\mathrm{bje}^{44} \mathrm{ka}^{44}$ | njò－njó | ${ }^{\text {EPP }}$ y－ny |
| 41 | to be hard | khog skyog，课觉， ＊＇khö．＇co． | $\mathrm{k}^{\mathrm{h}}{ }^{53}-\mathrm{t} 6 \mathrm{O}^{32}$ | ká－ká－pí | ${ }^{\mathrm{RP}} \mathrm{q} w \mathrm{e}-\mathrm{qwe}$ |
| 42 | ditch | pog shag，薄呷，＂${ }^{\prime}$ po． śa． | $\mathrm{bo}^{22}\left[-\mathrm{ga}^{32}\right]$ | bó | ${ }^{\text {Lp }}$［dze－］bo |
| 43 | year | khyud shed，去设， <br> ＊chu．｀shö | $\mathrm{k}^{\mathrm{h}} \mathrm{u}^{53}, \mathrm{ne}^{44}$ | ［bv̌－］tt＇${ }^{\text {che }}$ | $\left.{ }^{\text {EP }}[\mathrm{d} 3 \mathrm{l}] \mathrm{t}\right]^{\mathrm{h}} \mathrm{e}$ |
| 44 | day | ne mag，乃麻，※＿nai ＇ma． | ne ${ }^{44}$ | njó | Fne |
| 45 | month |  | $1 a^{32}$ | lá | F4æ |
| 46 | to be hot | phyag，擦 ${ }^{\text {－}}$－tsha． | $t 6^{\text {h }}{ }^{44}$ | tstá | ${ }^{\text {LP }}$［de－］ts ${ }^{\text {h }}$－ |
| 47 | to be cold | go，果，＊go | go | $\mathrm{Np} \mathrm{p}^{\text {hí }}$ | ${ }^{\mathrm{RP}}$［de－］Np ${ }^{\text {bjje }}$ |
| 48 | to be cool | pel，别，＊＇pe | $\mathrm{wa}^{44} \mathrm{So}^{44}$ | Nbísá | ${ }^{\text {EP }}$ Nbje／we |
| 49 | today | dag ne，达乃，＊＇da．nai | ta ${ }^{44}$－ne ${ }^{44}$ | tá－njó | ${ }^{\text {RP }}$ te－je |
| 50 | yesterday |  | ja ${ }^{32}$－ne ${ }^{44}$ | já－njó | ${ }^{\text {EFP }}$ ja－ne |
| 51 | tomorrow | sho wo，庶无，＊shu wu | $\int \gamma^{53}-\mathrm{ne}^{44}$ | só－njó | ${ }^{\text {EPP }}$ So－jne |
| 52 | this year | phyen ji，前呢，＂tshen ＇ňi | $\mathrm{ts}^{\mathrm{h}} \mathrm{t}^{\mathrm{h}} \mathrm{~h}^{32}-\mathrm{n}^{32}-\mathrm{ne}^{44} \mathrm{or}$ | ts ${ }_{\text {¢ }}^{\text {he }}$－xí | ${ }^{\text {RP }}$ ts ${ }^{\text {h }}$ e－hẽ |
| 53 | last year |  | ja ${ }^{32}$－ne ${ }^{44}$ | já－xí | ${ }^{\text {LPP }}$－${ }^{\text {a }}$ |
| 54 | next year | sho ni，庶呢，＊shu ni | $\int \gamma^{53}-\mathrm{ne}^{44}$ | só－xí | ${ }^{\text {EPP }}$ So－hẽ |
| 55 | formerly | yag yid，呀依，※ ya．yi． | $\mathrm{ja}^{34}-\mathrm{ne}^{32} \times \mathrm{xe}^{33}$ | já－xí ṣó－xí | ${ }_{\text {EP }} \mathrm{j} æ-j i-k{ }^{\text {h }}$ ¢ |
| 56 | at present | a min，阿密，＊－a mi | $\mathrm{a}^{53}-\mathrm{mi}^{-3}$ | t t ê－já－xá | EP ${ }^{\text {ex－mi }}$ |
| 57 | afterwards | khyi nur，其怒，＂＇chi｀nu | $\mathrm{ja}^{53}-\mathrm{no}^{32}$ | $\mathrm{t}^{\text {čé }}=\mathrm{jí}$ ț̣ày ${ }^{\text {a }}$ | ${ }^{\mathrm{EP}} \mathrm{SO}$－ndzi－so <br> ${ }^{\text {LP }} \mathrm{g}$ əno |
| 58 | daytime | nad rko，奈孤＂nai－ku | ne ${ }^{44}-\mathrm{gu}^{44}$ | mê－lágú | ${ }_{\text {RP }}$ ni－legu |
| 59 | morning | man lcag，蛮榨，＂man ＇tša． | $\left[\mathrm{ta}^{32}-\right] \mathrm{o}^{53}$ | Nț̣ ${ }^{\text {Só }}$ | ${ }^{\mathrm{R}} \mathrm{Nt} \int^{\mathrm{h}} \mathrm{O}$ |
| 60 | evening ${ }^{26}$ | dme＇khag do，默卡度， ＊｀mö kha．｀du | $\mathrm{ma}^{32}-\mathrm{xa}^{44} \mathrm{du}^{44}$ | Nk ${ }^{\text {h }}$ wá | ${ }^{\mathrm{F}} \mathrm{Nk}^{\mathrm{h}} \mathrm{O}$ |
| 61 | officials ${ }^{27}$ | tsog mo，坐幕，＂tso． ｀mu | $\mathrm{dzo}^{32} \mathrm{mo}^{44}$ | Ndzzòmó | ${ }^{\text {EPP }}$ peNbo |

[^15]| 62 | headman ${ }^{28}$ | shu khag，畜卡，＂su kha． | $\mathrm{ts}^{\mathrm{h}} \mathrm{o}^{44}-\mathrm{k}^{\mathrm{h}} \mathrm{a}^{53}$ | șָ－k ${ }^{\text {h }}$ wá | ${ }^{\text {LPP }}$ Wuli－mu－su |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 63 | teachers ${ }^{29}$ | slob dpon，唆白，＊＿so． ＇pai | $\mathrm{bi}^{32} \mathrm{gi}^{44} \mathrm{ge}^{32}$ | şòəpú | ${ }^{\text {EP }}$ Sopu |
| 64 | students | gra pa，伬把，＂＿dža＿pa | $\begin{aligned} & \mathrm{d} 3 \mathrm{i}^{44} \mathrm{dzi}^{44}-\mathrm{So}^{32}-1 \\ & \mathrm{u}^{44} \end{aligned}$ | trápá | ${ }^{\text {Ep }}$ Sojo |
| 65 | Buddhist priest | dge＇dun，杰渡，＊＇ge ${ }^{\text {d }}{ }^{31}$ | $\mathrm{p}^{\text {ha }}{ }^{32} \mathrm{pi}^{44}$ | ṣàpá | EPepæ |
| 66 | Lamas | bla ma，喇嘛，＊la－ma | $1 a^{44} \mathrm{ma}^{44}$ | làmá |  |
| 67 | clever | tsog ched，凿军，＂tso． tšhö． |  | ［jà－］Ntt ${ }^{\text {che }}$ | ${ }^{\mathrm{R}} \mathrm{Nt} \int^{\text {h }} \mathrm{e}$ |
| 68 | stupid |  | ［ts ${ }^{\text {¢ }}{ }^{44}-$ t ${ }^{\text {a }}{ }^{44}$ | ká［－páa | ${ }^{\text {LP }}$ diNbæ |
| 69 | grandfather | ho po，阿补，＊－a＿pu | $\mathrm{a}^{44}-\mathrm{pu}{ }^{44}$ | á－pý | EP－pu |
| 70 | father＇s <br> younger <br> brother | a pa tsi，阿把际，＊－a ＿pa＇tśi | $\begin{aligned} & \mathrm{a}^{44}-\mathrm{ba}^{44}\left[\mathrm{go}^{22}-\right. \\ & \left.\mathrm{tc}{ }^{44}\right] \end{aligned}$ | à－njó | ${ }^{\text {LP }}$－－bje |
| 71 | father＇s elder brother | a pa khag，阿把卡，＊－a ＿pa kha． | $\mathrm{a}^{44}-\mathrm{ba}^{44}-\mathrm{k}^{\mathrm{h}} \mathrm{a}^{53}$ | á－k＇wá | EPæ－bæ ${ }^{\text {ETP }} \mathfrak{j æ -}$ <br> $\mathrm{k}^{\mathrm{h}} \mathbf{w æ}$ |
| 72 | father | a pag，阿巴，＊－a－pa | $\mathrm{a}^{44}-\mathrm{b}^{44}$ | á－bá | ${ }^{\text {EPP}}$－${ }^{\text {dex }}$ |
| 73 | mother | a ma，阿妈，－－－ma | $\mathrm{a}^{44}-\mathrm{ma}^{44}$ | á－má | EPæ－mæ |
| 74 | daughter | bza min，咱米，＊dza mi | $\mathrm{za}^{44}-\mathrm{mi}^{44}$ | zì－jí | ${ }_{\text {EP }}^{\text {ze－je }}$ |
| 75 | son | tshi lag，慈那，tshi na． |  | ízá，zz̀ | ${ }^{\text {z }}$ \％ |
| 76 | elder brother | a yag，阿鲐，＊－6a ya． | $\mathrm{a}^{44}-\mathrm{ja} 4$ | vÉ－nwá | EP－jæ |
| 77 | younger brother | yid no，依糯，＊－yi．｀no | $\mathrm{ji}^{44}-\mathrm{no}^{44}$ | ní－nwá | ${ }_{\text {LPjene }}$ |
| 78 | nephew， niece | kyu tsi，局即，＊＇cu＇tśi | dzu ${ }^{32}-7{ }^{44}$ | ［zż－］Ndzû | ${ }^{\text {RP }}$ Ndzy－je |
| 79 | grandchild | dbyib gto＇，裔渡，＂yi． ＇tuu | $\mathrm{ji}^{44} \mathrm{t}^{\mathrm{h}} \mathrm{u}^{-44}$ | lćp ${ }^{\text {hy }}$ | ${ }^{\text {LPP }} \mathrm{let}^{\text {²u }}$ |
| 80 | man | sag tsi，撒即，＊－sa．${ }^{\text {assí }}$ | sa ${ }^{53}$ dai ${ }^{\text {a }}$ | lèlè－zź | Ep－bæ－zə |
| 81 | woman | mi tsi nag，密兹那＂ mi －tsi｀na． | $\begin{gathered} \mathrm{mi}^{53} \mathrm{zo}^{32}, \mathrm{a}^{44}- \\ \mathrm{ma}^{44} \mathrm{za}^{44}-\mathrm{mi}^{44} \end{gathered}$ | x ¢̀－má |  |
| 82 | wife | a tsi mo，阿兹暮，＊－fa一 tsi｀mu | $\mathrm{ja}^{32} \mathrm{fu}^{44} \mathrm{ma}^{53}$ | žè－mó | ${ }^{\text {LP }} \mathrm{d}$ Зæ－mæ |
| 83 | rich man | hag mag，哈妈，＊ha． ma． | $\mathrm{wa}^{32} \mathrm{ma}^{44}$ | dzímó |  |
| 84 | poor man | phyog po，错铺，＂tsho． phu | $\mathrm{ts}^{\mathrm{h}} \mathrm{o}^{44}-\mathrm{p}^{\mathrm{h}} \mathrm{u}^{44}$ | şv－p ${ }^{\text {¢ }}$ | ${ }^{\mathrm{EP}} \mathrm{ts}^{-1} \mathrm{O}-\mathrm{p}^{\mathrm{h}} \mathrm{u}$ |

${ }^{27}$ The Duoxu and the Ersu forms are reportedly loans from Nuosu Yi（but I have not been able to find the Nuosu Yi donor word）；whereas the Lizu form is a loan from Tibetan，WT dpon po．
${ }^{28}$ In the modern Duoxu form，the XFYY form $s h u, / 6 u /$ ，is replaced by the synonymous form $/ \mathrm{ts}^{\mathrm{h}} \mathrm{o}^{44} /$＇person，man＇．The Lizu form is literally，＇one who acts as a head＇．
${ }^{29}$ The modern Duoxu form is likely to be a Tibetan loan，WT dge rgan＇teacher，master＇．The Ersu and Lizu forms are loans from Tibetan，WT slob dpon＇teacher＇．
${ }^{30}$ The XFYY form and the modern Ersu forms are loans from Tibetan，WT grwa pa＇student， disciple＇；the Lizu form is a loan from a different Tibetan form，WT slob pa＇student，pupil， disciple＇；whereas the modern Duoxu form is a native compound，literally，＇one who studies＇．
${ }^{31}$ The XFYY form（WT dge＇dun）has been replaced in modern Duoxu by a loan from the Namuzi language，$/ \mathrm{p}^{\mathrm{h}} \mathrm{a}^{55} \mathrm{pz}^{33}{ }^{33}$（the Namuzi form is from Wáng Déhé，p．c．）．The Ersu and Lizu forms are the native form for＇ritual priest＇．

| 85 | age，year | lug，遛， $\begin{gathered}\text {＊iu．}\end{gathered}$ | $\mathrm{ne}^{44}, \mathrm{k}^{\text {h }}{ }^{53}$ | lź ${ }^{\text {cod］}}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 86 | old man | mo yag，暮押，＊＇mu－ya | $\begin{aligned} & \mathrm{ts}^{44}-\mathrm{mu}^{53}[- \\ & \left.\mathrm{ka}^{32}\right] \end{aligned}$ | tş ${ }^{\text {hò－mó }}$ | ${ }^{\text {EP }}$ ts ${ }^{\text {ho}} \mathrm{O}$－mo |
| 87 | thief | musu，波畜，${ }^{\text {\％－po }}$ Su | $\mathrm{mu}^{44}-6 \mathrm{u}^{32}$ | Np ${ }^{\text {hoissivi }}$ | ${ }_{\text {EPp }}^{\text {p }}$ Se－su |
| 88 | brother | a yag yid no，阿呋依糯， <br> ＊－ fa －ya．－yi．｀no | $\mathrm{a}^{44}-\mathrm{ja}^{44} \mathrm{ji}^{32}-\mathrm{no}^{32}$ | ní－nwá vé－ nwá | ${ }^{\text {EP }}$ Ye－ni， <br> ${ }^{\text {EP }} \mathrm{muNp}{ }^{\mathrm{h}} æ$ |
| 89 | friend | ji phog，蚁破，＂ni pho． | $\mathrm{jo}^{32} \mathrm{p}^{\text {ho }}{ }^{44}$ | Ndzó | ${ }^{\mathrm{R}} \mathrm{N}$ dzo |
| 90 | to be shrewd | blag dgo［dog］，腊夺， <br> ＊’la．＇do | $\mathrm{ko}^{32} \mathrm{tsa}^{53}$ | jà－tcó | ${ }^{\mathrm{R}} \mathrm{Np}^{\mathrm{h}} \mathrm{O}$ |
| 91 | to be lazy | mag tho，马兔，＊＿ma． ＇thu | $\mathrm{ge}^{53}$ | má－t¢ó | ${ }^{\mathrm{RP}} \mathrm{mæ}-\mathrm{t}^{\mathrm{h}} \mathrm{u}$ |
| 92 | body | kin mag，更马，＊köN ma． | $\mathrm{ge}^{53} \mathrm{ma}^{32}$ | gámá | ${ }^{\text {LP }}$ gemæ lepu |
| 93 | head | wu ${ }^{\text {ju }}$ ，务鞠，wu－ju | wu ${ }^{53} \mathrm{dzu}{ }^{32}$ | v̀lí | ${ }_{\text {LP }}{ }_{\text {Wuli }}$ |
| 94 | hair of the head | dzag，杂，＂＇dza． | tsa ${ }^{34}$ | tsí | ${ }^{\text {F }}$ ¢ 6 e |
| 95 | eye | mig si，迷思，＊＇mi．｀si | $\mathrm{mi}^{53} \mathrm{si}^{32}$ | dék | ${ }^{\mathrm{R}} \mathrm{mjæ}$ ， <br> ${ }^{\text {Lp }}$ Ndoqo |
| 96 | eyebrow | mig dmu＇，迷目，＊＇mi． muu | $\mathrm{mi}^{53}-\mathrm{mu}^{32}$ | dó－má－Ndzí | ${ }^{\mathrm{RP}}$ Ndo－tte－mu |
| 97 | ear | yag yid，哑依，＊ya．－yi． | neə ${ }^{34}-\mathrm{pu}^{32}$ | ná－kv́ | ${ }^{\mathrm{RP}} \mathrm{ne}$－pi |
| 98 | nose | yag ko，哑孤，＊ya．－ku | $\mathrm{na}^{32}-\mathrm{ku}^{53}$ | sí－Nbý | ${ }^{\text {LP }}$ to－Nbu |
| 99 | mouth | khag pi，卡比，kha．＿pi | $\mathrm{k}^{\mathrm{h}} \mathrm{a}^{44} \mathrm{p}^{44}$ | sv́－Np wá | Epto－Np ${ }^{\text {ha }}$ |
| 100 | lip | min phi，面皮，＊men ＇phi | $\mathrm{k}^{\mathrm{h}} \mathrm{a}^{44} \mathrm{pi}^{44}$ | sv́－pí | ${ }^{\text {RPj}} \mathrm{jebe}$ <br> Ndзәре |
| 101 | tooth | se mag，谢马，＊se ma． | $6 \mathrm{e}^{53}-\mathrm{ma}^{32}$ | şż－má | ${ }^{\mathrm{RP}} \mathrm{xu}$－mæ |
| 102 | breast of a woman | dpe＇pe，别别，＊＇pee＇pe | $\mathrm{bi}^{32}-\mathrm{bi}^{44}$ | njó－njó | ${ }^{\text {LP }}$ dzæ－ле |
| 103 | hand | log kog，署锅，＊ $10 .-\mathrm{ko}$ | $\mathrm{lo}^{32} \mathrm{ko}^{53}$ |  | ${ }^{\mathrm{F}} \mathrm{le}{ }^{\text {EPP}} \mathrm{lo}-\mathrm{p}^{\mathrm{h}} \mathrm{O}$ |
| 104 | belly | gto＇＇phag，度怕，＂tuu ＇pha． | $\mathrm{do}^{44}-\mathrm{p}^{\text {ha }}{ }^{44}$ | jí－p ${ }^{\text {há }}$ | ${ }^{\mathrm{RP}} \mathrm{ji}-\mathrm{p}^{\mathrm{h}} æ$ ， ${ }^{\text {LP }} \mathrm{dzy}-\mathrm{p}^{\mathrm{h}} æ$ |
| 105 | heart | ni ma，业妈，ne－ma | ne ${ }^{32}-m a^{53}$ | sž̇－ní | ${ }^{\text {RP }}$ te－mi |
| 106 | foot | rko gtug，縠独＊ku tu． | $\mathrm{gu}^{53} \mathrm{du}^{32}$ | $\partial^{\prime}-\mathrm{p}^{\mathrm{p}}$ ह́ | LPd ${ }^{\text {d }}$－d ${ }^{\text {d }}$ |
| 107 | breath | sog，率，＊＇shai | So ${ }^{32}$ | ş́ | ${ }^{\text {F }}$ S |
| 108 | a boil | rkog，故＂ku． | $\mathrm{gu}^{53}$ | mjá－rź | ${ }^{\mathrm{RP}}$ mıə－ฮว |
| 109 | tongue | ar hu，噎哺，＊－we＿pu | $\mathrm{je}^{53} \mathrm{pu}^{32}$ | siz̀pź | ${ }^{\text {EP }}$ tepi |
| 110 | sinews | ku，鼓，＊ku | $\mathrm{dza}^{34}$ | trv́ | ${ }^{\text {Hex }}$ |
| 111 | face | min phog，命坡，＊min ${ }^{-}$ pho． | $\begin{aligned} & \text { mje }^{44}-\mathrm{ma}^{44}, \\ & \text { pje }^{44}-\mathrm{ma}^{44} \end{aligned}$ | mjá | $\begin{aligned} & \mathrm{Rj} \mathrm{~m}, \\ & \mathrm{p} \int_{\mathrm{D}} \mathrm{mjx}- \end{aligned}$ |
| 112 | breast，chest | ＇gog pe，鹅别，＊＇才ö．＇pe | $6 e^{53} \mathrm{k}^{\mathrm{h}} \mathrm{a}^{32}$ | ró－ní－mà | ${ }^{\text {EP }}$ ıək ${ }^{\text {h }}$ |
| 113 | fingers | $\log$ ni，落宜，＊lo．＇ni | $10^{44}-\mathrm{ni}^{44}\left[-p^{\mathrm{h}} \mathrm{a}^{44}\right]$ | 1́c－sv́［＝ka］ | ${ }^{\text {LP }}$ le－tu |
| 114 | liver | se hu，谢哺 \％se pu | $6 e^{53}-p^{\text {n }}{ }^{32}$ | Ntstsá | ${ }^{\mathrm{R}} \mathrm{Nts}^{\text {h }} \mathrm{E}$ |
| 115 | lungs | tshe hu，择哺，＊＇tsö pu | ts $^{\text {h }}{ }^{34}\left[-\mathrm{pu}^{32}\right]$ | ts ${ }^{\text {há }}$ | ${ }^{\mathrm{F}} \mathrm{N}$ ts ${ }^{\text {h }} \mathrm{u}$ |
| 116 | intestines， bowels |  | $\mathrm{ve}^{53}-\mathrm{ni}^{32}$ | vé－njó | ${ }^{\text {RPP }}$ уe－лi |
| 117 | gallbladder |  | $\mathrm{ki}^{34}$ | trò | ${ }_{\mathrm{R}} \mathrm{t}$ fo |


| 118 | urinary <br> bladder |  | $\mathrm{bu}^{32}-6 \mathrm{u}^{53}-6 \mathrm{u}^{32}$ | bèz－șù－şú | ${ }^{\text {EPP}} \mathrm{Be}$－Su－su |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 119 | sweat ${ }^{32}$ |  | $\mathrm{ku}^{34}-3^{34}$ | ttí |  |
| 120 | spittle |  | ts $\mathrm{e}^{32}-\mathrm{k}^{\mathrm{h}} \mathrm{a}^{53}$ | tsshéká | ${ }^{\text {EPPts }}$ dieqe |
| 121 | excrement |  | $\mathrm{ts}^{\text {¢ }}{ }^{\text {i }}{ }^{\text {44 }}$ | วț̣ò | ${ }^{\mathrm{R}} \mathrm{J} \mathrm{e}$ |
| 122 | urine |  | $\mathrm{zi}^{53}$ | Nbà | ${ }^{\text {R }}$ Nbıæ |
| 123 | pus |  | $\mathrm{fe}^{32}-\partial^{34}$ | pé－1白 | ${ }^{\text {EPP }}$ pu－Iæ |
| 124 | bones | yu ko，玉古，＊yö ku | $\mathrm{ju}^{53} \mathrm{ku}^{32}$ | rźký | ${ }_{\text {RP }} \mathrm{I} \mathrm{I} \mathrm{Q}$ O |
| 125 | hair of the body | dmu＇，谋，＊＇muu | $\mathrm{mu}^{34}$ | mà | ${ }^{\mathrm{H}} \mathrm{mu}$ |
| 126 | blood | sho，输－shu | Su4 | sò | ${ }_{\mathrm{H}} \mathrm{Se}$ |
| 127 | house | yag，压，＊ya． | ja ${ }^{44}$ | jí | ${ }^{\text {R }}$ ne |
| －128 | pillar | byed pag，接扒，＊－dze pa． | dze ${ }^{44} p^{\text {h }}{ }^{44}$ | dzãp ${ }^{\text {¢á }}$ | ${ }^{\text {EP }} \mathrm{dzæp}{ }^{\text {hi }}$ ¢ |
| 129 | gate，door | ＇jag，架，＊ja． | dza ${ }^{53}\left[-p u^{32}\right]$ | Ngà | ${ }^{\mathrm{R}} \mathrm{Ng} æ,{ }^{\text {LP }} \mathrm{Ng} æ-$ ［pu］ |
| 130 | monastery， temple ${ }^{33}$ | dgon pa yag，公巴压， ＊－gun－pa－ya． | $\mathrm{be}^{44} \mathrm{ja}{ }^{44}$ | míjí，gòNbà－ jí | ${ }^{\text {EP }}$ goNbæ |
| 131 | window | go dpa＇，顾罗，＂gu paa | $\mathrm{za}^{44} \mathrm{pu}^{44}$ | Ndàrá | Ep xwewu－Ngæ |
| 132 | bowl | jag，酢，＊dža． | $\mathrm{k}^{\text {h }}{ }^{53}$ | zwáó | ${ }^{\text {Lp }} \mathrm{q}^{\mathrm{h}}$ wæle |
| －133 | plate | shag mag，呷妈，＊－śa． －ma． | $\mathrm{ga}^{44} \mathrm{ma}^{44}$ | k ${ }^{\text {¢ }}$ ¢́lá | ${ }^{\text {Exp }}$ Ngeme |
| 134 | wine cup ${ }^{34}$ | bcud［ŋ］tsi，钟子，＊－ <br> tšun tsi | $\begin{aligned} & {\left[\mathrm{wu}^{53}\right] \mathrm{t} \mathrm{u}^{44}[-} \\ & \text { t } \left.\int \mathrm{u}^{44}\right] \end{aligned}$ | ［v̂－］ț̣á | ${ }^{\text {EP }}[\mathrm{ku}] \mathrm{t}$ u |
| 135 | tou，a unit of dry measure | ＇ag，呷，＊－śa． | $\mathrm{ka}^{32}$ | pwá | ${ }_{\text {pe }}$ |
| 136 | basin ${ }^{35}$ | log ma，罗吗，＊＇lo．ma | $\mathrm{k}^{\text {h }}{ }^{53}$ | t6òp ${ }^{\text {ha }}$ | ${ }^{\text {RPP }}$ lome |
| 137 | cooking pot | rke，隔，＊＇kö | $\mathrm{ge}^{32}$ | drò | ${ }^{\text {F }}$ d3 3 |
| 138 | ladle | yug mag，油妈，＂＇yu．－ ma． | $\begin{aligned} & t 6^{1}{ }^{34}{ }^{344}{ }^{32} \mathrm{ma}^{44} \end{aligned}$ | zı̣́má | ${ }^{\text {RPj }}$ jy dmæ |
| 139 | table ${ }^{36}$ | cog tsi，桌子，＊tšo．＿tsi | $\begin{aligned} & \mathrm{t} \int_{0^{44}} \mathrm{tsi}^{32} \\ & \mathrm{la}^{32} \mathrm{t} 6^{53}-\mathrm{pu} \end{aligned}$ | tsoótsé | ${ }^{\text {LP }}$ dedze |
| 140 | lock | kho＇ag，库呷，＂khu－ śa． | $\mathrm{k}^{\mathrm{h}} \mathrm{u}^{34}\left[-\mathrm{ga}^{43}\right]$ | Nk ${ }^{\text {h }}$ रु | ${ }^{\mathrm{R}} \mathrm{Nk}^{\mathrm{H}} \mathrm{O}$ |
| －141 | key ${ }^{37}$ | kho yes，库夜，＊khu ye | $\mathrm{jo}^{34} \mathrm{j}^{3} \mathrm{i}^{32}\left[-\mathrm{pu}^{32}\right]$ | Nkর ${ }^{\text {hr－otsżz }}$ | ${ }^{\text {LP }} \mathrm{k}^{\text {hioje }}$ |
| 142 | knife | me thog，卖妥，＂ mai tho． | $\mathrm{me}^{53} \mathrm{t}^{\mathrm{h}} \mathrm{o}^{32}$ | báṭá | ${ }^{\text {LP }}$ Nboto |
| 143 | boat | ku，沽，＊－ku | $\mathrm{gu}^{32}$ | วgú | ${ }_{\text {F }} \mathrm{F}$ |
| 144 | bell | dri＇u，止巫，＊dži－ $\mathrm{fu}^{38}$ | $\mathrm{ts}^{\mathrm{h}} \mathrm{o}^{44} \mathrm{lo}^{44}\left[-\mathrm{pu}^{32}\right]$ | Ntts ${ }^{\text {h }}$ z̀ló | ${ }^{\text {Ep }} \mathrm{Nt} t^{\text {h }}$ Olo |

[^16]| 145 | drum | byed po，借补，＂dze． ＿pu | $\mathrm{dze}{ }^{44}$ | Ndzã | ${ }^{\text {R }}$ Ndze |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 146 | rope | po ag，补呷，＊pu sóa． | pu ${ }^{44}\left[-\mathrm{ka}^{32}\right]$ | pə［pzì］ | ${ }^{\mathrm{RP}} \mathrm{pu}[-\mathrm{g} æ]$ |
| 147 | saddle | a phod，阿迫，＊－a pho | $\left.\mathrm{a}^{53}[t\}^{\text {ha }}{ }^{32}\right]$ | ［Nbó－］zá |  |
| 148 | trumpet shell， conch shell | lug dpe＇，普［留］白，＊＂liu． ＇pai | $t 6^{\text {h }}{ }^{53} p^{\text {h }}{ }^{53}$ | lżbé［ว้＇bé］ | ${ }^{\text {EPP }} \mathrm{l}$ libu |
| 149 | lamp | mar mi，妈蜜，＊－ma ＇ $\mathrm{mi}^{39}$ | $\mathrm{ma}^{32} \mathrm{mi}^{44}$ | téNḍzá | ${ }^{10} \mathrm{~m}$ mmi |
| 150 | ladder | dzed le，结列，＂dze．${ }^{\text {\％e }}$ | t $6 e^{44} e^{44}$ | dítsź | ${ }_{\text {Liplet }}$ i |
| 151 | to eat | khag，卡，＊kha．${ }^{40}$ | dzi ${ }^{32}$ ，ba ${ }^{3}$ | dzż | ${ }^{\text {R }}$ dzo |
| 152 | to drink |  | $\mathrm{ba}^{53}, \mathrm{tf}^{\mathrm{h}} \mathrm{a}^{34}$ | $\mathrm{ts}^{\text {h }}$ ¢ | ${ }^{\mathrm{F}} \mathrm{t}^{\mathrm{h}} \mathrm{e}$ |
| 153 | cooked rice ${ }^{41}$ | bzhin，喏，＊zhö | $30^{34}$ | zámá | ${ }^{\mathrm{F}} \mathrm{k}^{\mathrm{h}} \mathfrak{\mathrm { C }}$ |
| 154 | rice | ched，早，＊－tšhö． | $t \int^{\text {h }} \mathrm{e}^{53}$ | Nts ${ }^{\text {¢ }}$ | ${ }^{\mathrm{R}} \mathrm{Nt} \int^{\mathrm{h}} \mathrm{e}$ |
| 155 | wine | wo，雾，＊wu | wu ${ }^{53}$ | V́ | ${ }^{\text {R }}$ |
| 156 | tea | ja，扎，＊－dža | $\mathrm{d}_{3} \mathrm{i}^{34}\left[2^{34}\right]$ | dzà | ${ }^{\mathrm{F}} \mathrm{d} 3$ ® |
| 157 | honey | pi hen，必亨，＂pi－hön | $\mathrm{bi}^{32}-2^{44}$ | bì－čé | LPbi－bi－ıæ |
| 158 | meat | she，施，＊－shi | S $\mathrm{e}^{44}$ | sì | ${ }^{\mathrm{F}}$ \％ |
| 159 | oil | ＇dzu ci，余汁，＊＇yu－tši | zi ${ }^{44}\left[-2^{44}\right]$ | zv́ | ${ }^{\text {F }} \mathrm{Zu}$ |
| 160 | salt | tshi＇，栖，＊－tšhii | t ${ }^{\text {h }}{ }^{44}$ | tss ${ }^{\text {h }}$ | ${ }^{\mathrm{F}}$ ts ${ }^{\text {h }}$ O |
| 161 | to be sweet | then，甜，＊－then | $t \int^{\mathrm{h}} \mathrm{e}^{44}-\mathrm{t} 60^{44}$ | ［dè－］tss ${ }^{\text {có }}$ | ${ }^{\text {LP}}[\mathrm{de}-] t \mathrm{t} \mathrm{h}^{\mathrm{e}}$ |
| 162 | to be bitter | kh＇a，卡，khaa | $\mathrm{k}^{\text {ha }}{ }^{-4}$ | ts ${ }^{\text {h}}$ | RP［de－］${ }^{\text {he }}$ |
| 163 | clothing | pe cho，白侧，＊＇pai tshö | $\mathrm{be}^{32} t 6^{\mathrm{h}} \mathrm{e}^{44}$ | Ngámé | ${ }^{\text {LP }}$ gæmi |
| 164 | hat | dmug，⿸⿸广⿰木木⿸丆口⿸丆口⿸丆口欠，＊mo． | mu ${ }^{53}$ | Nbỳ | ${ }^{\mathrm{R}} \mathrm{NbO}$ |
| 165 | hemp | tsi，兹，＊－tsi | tsi ${ }^{44}$ | tsè | ${ }^{\text {Lip }}$ tse［－ni］ |
| 166 | thread | ＇dze khe，结刻，＊＇dze ｀khö | $\mathrm{dze}^{2} \mathrm{k}^{\mathrm{h}} \mathrm{e}^{44}$ | tsíiş́ | ${ }^{\mathrm{RP}}$ mico |
| 167 | white | wad kyog，歪觉，＊－wai ＇co． | $\mathrm{ve}^{44}-t 60^{44}$ | $\begin{aligned} & \text { [dé-]lž [dé- } \\ & \text { '́'] } \end{aligned}$ | ${ }^{\text {Lip }}$［de－jly |
| 168 | blue | dme＇ni，墨泥，＊mö＇ni | $\begin{aligned} & \text { na }{ }^{32} \mathrm{pu}^{53} \text { or } \\ & \text { la }^{32} \mathrm{pu}^{53} \end{aligned}$ | lżNbv́ <br> ［ə̀mb́］ | ${ }^{\text {EPP }}$ jibze， <br> ${ }^{\text {LP }}$ Iẽpu |
| 169 | yellow | hin kyog，亨觉，＂hön ＇co． | $x e^{34} \partial^{34}$ | ［déc－］${ }^{\text {cux }}$ | ${ }^{\text {LP }}$［de－］$]$ u |
| 170 | red | hug ho，吽呼，＊－hus ${ }^{-}$ hu | $\mathrm{no}^{32}\left[-\mathrm{xu}^{53}\right]$ | ［dé－］ní | ${ }^{\text {EP }} \mathrm{ji}$［ xu ］ |
| 171 | god | chos skyoŋs，濯雪，＊＇tšo ＇śo ${ }^{42}$ | $1{ }^{34}$ | łà | ${ }^{\text {F }}$ ¢ |
| 172 | demon，ghost | chag，岔，tšha． | $t \int^{\mathrm{h}} \mathrm{a}^{53}$ | tri ${ }^{\text {ha }}$ | ${ }^{\mathrm{R}} \mathrm{t} \int^{\mathrm{h}} æ$ |
| 173 | book | dpe＇cha，别萝，＇pee－ tša ${ }^{43}$ | $\mathrm{d} 3^{44}{ }^{4} z^{4}{ }^{44}$ | NḍzóNdzź | ${ }^{\text {EP }}$ NdzəNdzi |
| 174 | paper | sho＇u，烧物，＊－shau ${ }^{-} \mathrm{hu}^{44}$ | $\int a^{44} \mathrm{wu}^{44}$ | ṣwàṿ | EPPæwu |

${ }^{38}$ This form is a loan from Tibetan，WT dril bu＇bell＇．
${ }^{39}$ This word is a loan from Tibetan，WT mar me．
${ }^{40}$ This form is likely to mean＇to bite＇，Duoxu $/ \mathrm{k}^{\mathrm{h}} \mathrm{a}^{32} /$ ，rather than＇to eat＇．
${ }^{41}$ The Ersu form is a loan from Tibetan，WT za ma＇food＇．
${ }^{42}$ WT chos skyong＇dharmapala，protective deity＇．The modern Duoxu，Ersu，and Lizu forms are all related to WT lha＇god，deity＇．
${ }^{43}$ WT dpe cha＇book，scripture，text＇．
${ }^{44}$ WT shog gu＇paper＇．

| 175 | ink ${ }^{45}$ | snag tsha，撒青，＊－sa tshin | $\mathrm{me}^{34}$ | mé |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 176 | east | shar phyogs，杉鹊，＊－ shan｀tsho． | $\int a^{44}-t^{6} 0^{44}$ | ṣà－tçó | ${ }^{\text {EF }} \int æ-\mathrm{t} 6^{\mathrm{h}} \mathrm{O}$ |
| 177 | west | nub phyogs，怒鹊，＂nu． ＇tsho． | $\mathrm{ye}^{32}-\mathrm{t}^{\mathrm{h}} \mathrm{o}^{44}$ | njó－tçóo | ${ }^{\mathrm{RP}}$ no－t $\mathrm{c}^{\mathrm{h}} \mathrm{O}$ |
| 178 | south | lho phyogs，鲁鹊，＂＿lu ‘tsho． | je ${ }^{32}-t^{6} 0^{44}$ | 4jō－tctó | ${ }^{\text {Ho－meNt }}{ }^{\text {he }}$ |
| 179 | north | byay phyogs，咱鹊， ＊＇dzan｀tsho． | t $6 \mathrm{a}^{32}, \mathrm{ja}^{32}-\mathrm{t}^{\mathrm{h}} \mathrm{o}^{44}$ | tsasá－tçó | $\begin{aligned} & \mathrm{ip}+6 a-\mathrm{Nt} \mathrm{f}^{\mathrm{h}} \mathrm{O}- \\ & \mathrm{kæ} \end{aligned}$ |
| 180 | above，up | thog phyogs，拖破，＊ tho．＇pho． | $\mathrm{k}^{\mathrm{h}}{ }^{53}$ | t $6^{\text {¢ }}$ ó［－wó］ | $\left.{ }^{\mathrm{RP}} \mathrm{t} 6^{\mathrm{h}} \mathrm{O}-\mathrm{t} 6^{\mathrm{h}} \mathrm{O}\right]$ |
| 181 | beneath， down | zhag phyogs，哇破，＊－ wa．＇pho．${ }^{46}$ | $\mathrm{k}^{\mathrm{h}}{ }^{32}$ | ț̣àyá | ${ }^{\text {LP }}$ tseje |
| 182 | left | g－yas phyogs，哑桑破， ＊ya－san｀pho． | $\mathrm{jo}^{53} \mathrm{da}^{32}-\mathrm{p}^{\mathrm{h}} \mathrm{o}^{53}$ | $\begin{aligned} & 1 \grave{\varepsilon}=\mathrm{j} \mathrm{i}=\mathrm{k} \hat{\varepsilon}= \\ & \mathrm{x} \varepsilon \\ & \end{aligned}$ | ${ }_{\text {Rejpete }}$ |
| 183 | right | g－yon phyogs，压破，＊－ ya．＇pho． | $\mathrm{t} \mathrm{u}^{32} \mathrm{ta}^{2}-\mathrm{p}^{\mathrm{h}} \mathrm{o}^{53}$ | $\bar{\varepsilon} \mathrm{t} \text { șv}=\mathrm{k} \hat{\varepsilon}=\mathrm{x}$ | ${ }^{\text {Ep }}$ let $¢ \mathrm{y}$ |
| 184 | front | ＇dun phyogs，恒破， <br> ＊＇hön｀pho． | $\mathrm{xe}^{32}-\mathrm{p}^{\text {h }}{ }^{53}$ | ṣó－p ${ }^{\text {h }}$ ¢́ | ${ }^{\text {LP }} \int$ æ－p ${ }^{\text {ho }}$ |
| 185 | back $^{47}$ | rgyab phyogs，怒破， <br> ＂nu｀pho． | ［ja ${ }^{53}$－］ $\mathrm{no}^{32}$ | ［gámá－］njó | ${ }^{\text {njo }}$ |
| 186 | inside | ko phogs，各破，＂kö ＇pho． | $\mathrm{ko}^{32}\left[-\mathrm{p}^{\text {h }}{ }^{53}\right]$ | k ¢ $\varepsilon$［ $=\mathrm{k}$ ć $]$ | ${ }^{\mathrm{Ep}} \mathrm{k}^{\mathrm{h}} \mathrm{u}\left[-\mathrm{p}^{\mathrm{h}} \mathrm{o}\right]$ |
| 187 | outside | no phog，怒破，＂nu pho． | wa ${ }^{32}-\mathrm{p}^{\text {h }}{ }^{53}$ | njó－p ${ }^{\text {hé }}$ | ${ }^{\text {Lip }} \mathrm{jo}-\mathrm{p}^{\text {h }}$ |
| 188 | between，in the middle | sku kyog，孤觉，＊－ku co． | $\mathrm{go}^{32}\left[-160^{44}\right]$ | gú［łá］ | ${ }^{\text {LP }} \mathrm{gu}$［le］ |
| 189 | flower ${ }^{48}$ | me tog，咩隽，＊－me＿to． | $\mathrm{dje}^{32}$－dje ${ }^{44}$ | ví，mító， xwà | ${ }^{\mathrm{RP}}$ metco， <br> ${ }^{\mathrm{RP}}$ meto |
| 190 | tree | bse＇，谢，＊see | $6 \mathrm{e}^{53}-\mathrm{pu}^{32}$ | sílpú | ${ }^{\mathrm{R} P}$ se－pu |
| 191 | grass | nog，懦，＊ no | $3 \mathrm{u}^{53}$ | əní | ${ }^{\text {R }} 30$ |
| 192 | bamboo | mid，密，＊mi． | $\mathrm{mi}^{44}$ | xì | Fhẽ |
| 193 | root | $\begin{aligned} & \text { dme' tso, 墨助, " möö } \\ & \text { 'tśu } \end{aligned}$ | $\mathrm{me}^{32}-\operatorname{tsu}^{53}$ | Nbá | ${ }^{\mathrm{R}} \mathrm{Nb}$ ว |
| 194 | branch | ＇a lo，呷落，＊－śa｀lo | $\mathrm{Ce}^{33}-\mathrm{ja}^{32}, \mathrm{ce}^{53}$ | sí－kálé | ${ }^{\text {RP }}$ se－qely |
| 195 | leaf | bsag［bse＇］，tsag，邪咱， ＊－se＇tsa． | $6 \mathrm{e}^{53}-t 6^{\mathrm{h}} \mathrm{l}^{32}-t 6^{\mathrm{h}} \mathrm{a}^{44}$ | sí－tss | ${ }^{\mathrm{R} \mathrm{p}}$ Se－p¢æ |
| 196 | fruit ${ }^{49}$ | bse＇si，谢思，＊see｀si | $\mathrm{so}^{32}$－wa ${ }^{44}$ | Sí－ş́z | ${ }^{\mathrm{RP}} \mathrm{Se}$ Se－so |
| 197 | peach | sog wag，梭哇，＊－so．－ wa． | $\mathrm{so}^{32}$－wa ${ }^{44}$ | ş́já | ${ }^{\text {LP }}$ ¢ e |

[^17]| 198 | wheat ${ }^{50}$ | shag，沙，＊－sha． | $\mathrm{me}^{53} \mathrm{dza}$ | sá | Fæ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 199 | vegetables | yi nag，衣纳，＊yi｀na． | $\mathrm{ji}^{44} \mathrm{na}^{44}$ | gópí | ${ }^{\mathrm{RP}} \mathrm{Ng}$ gope |
| 200 | quadruped | sug dmug，续牧，＂śu． mu． | $\mathrm{zu}^{44} \mathrm{mo}^{53}$ |  | ${ }^{\mathrm{RP}}{ }^{\text {zupu }}$ |
| 201 | bear | hag，哈，＊－ha． | wa ${ }^{44}$ | xá | Ro |
| 202 | wolf | bted，得，＊＇tö．${ }^{51}$ | $\mathrm{je}^{32} \mathrm{p}^{\mathrm{h}} \mathrm{u}^{53}$ | Ndzz̀ | ${ }^{\text {F }}$ ge |
| 203 | rat | wu，务，＂wu | $\mathrm{wu}^{5}\left[-\mathrm{pu}^{32}\right]$ | gý［－p ${ }^{\text {há }}$ | ${ }^{\text {RP }}$ YO［－p ${ }^{\text {h}}$－ |
| 204 | hawk | kho，渴，＊khö | $\mathrm{k}^{\mathrm{h}} \mathrm{o}^{34}\left[-\mathrm{ma}^{32}\right]$ | əké | ${ }^{\text {F }} \mathrm{k}$ O |
| 205 | OX | rgyug，纽，ňu． | nu ${ }^{32}$ | றwà | ${ }^{\text {F }}$ U |
| 206 | tiger | nag＇phag，拏，＊＇na． ‘pha． | $\mathrm{la}^{32}$ | lwá［－p ${ }^{\text {²má }}$ | ${ }^{\text {EPP}} 1 æ\left[-\mathrm{p}^{\mathrm{h}} æ \mathrm{]}\right.$ |
| 207 | rabbit | thog la，脱拉，＊－tho．－ 1 a | $\mathrm{mi}^{32} \mathrm{dzi}^{44}$ | midzź | EP midzo |
| 208 | dragon | ri＇byam，耳咱，＊＿ri ＇dzan | $\partial^{32} \mathrm{~d} \mathrm{~m}^{44}$ | ¢ | ${ }^{\text {LP }}$ Jəbze |
| 209 | snake | ＇o＇phag，卧扒，＂ ＇pha． | $\mathrm{wu}^{32}-\mathrm{p}^{\mathrm{h}} \mathrm{a}^{33}$ | bé－ḉ | ${ }^{\text {LP }} \mathrm{b}$－ |
| 210 | horse | mog，摸，＊mo． | mo ${ }^{32}$ | Nbò | ${ }^{\mathrm{F}} \mathrm{Nb}$ ว |
| 211 | sheep | yog，哟，＊－yo． | jo ${ }^{44}$ | jò | ${ }^{\text {Rno }}$ |
| 212 | ape | dmi＇，密，＂mii | mi ${ }^{32}$ | mí | ${ }^{\text {F mi }}$ |
| 213 | chicken，hen | ＇od，饿，\％oö． | wo ${ }^{53}$ | rá | R ${ }_{\text {dWx }}$ |
| 214 | dog | khin，肯，＊khön | $\mathrm{k}^{\mathrm{h}} \mathrm{e}^{44} \mathrm{k}^{\mathrm{h}} \mathrm{e}^{53} \mathrm{ni}^{32}$ | trio | ${ }^{\text {F }} 6^{\text {he }}$ |
| 215 | pig | ＇gog，鹅＊＇уö． | Wo ${ }^{32}$ | vé | FWO |
| 216 | buffalo | wo gyug，乌纽，＊－wu ňu． | $\mathrm{wu}^{53}-\mathrm{pu}^{32}$ | ḑzó－ŋwá | ${ }^{\mathrm{RP}} \mathrm{d} 3 \mathrm{e}-\mathrm{yu}$ |
| 217 | peacock | rma bya，妈咱，＊－ma ＇dza | $\mathrm{ma}^{3} \mathrm{tsa}^{32}$ | mózà | ${ }^{\text {EPP }}$ mæpææ |
| 218 | domestic goose ${ }^{52}$ | ＇gog wa，俄哇，＂＇〇ö．－ wa | $\mathrm{o}^{34}$ | oิ̃ã | LPowe |
| 219 | fish ${ }^{53}$ | b－yu＇，淤，＊－yuu | zu ${ }^{44}$ | zv́ | ${ }^{\text {¢ }}$ |
| 220 | to fly | bya lin，咱衣，＇dza－yi． | dza ${ }^{44}$－dza ${ }^{44}$ | gwà－gwá | Fbze |
| 221 | to eat， edibles ${ }^{54}$ | byi lug，唧留，＊＇dzi＇liu． | dzi ${ }^{32}-1 \mathrm{lj}^{32}$ | dzż－lí | ${ }^{\mathrm{RP}} \mathrm{dz}$－－lje |
| 222 | gold | nin，你， ni | ni ${ }^{44}$ | əní | Fni |
| 223 | silver | wo，物，＊wu | 10 ${ }^{44}$ | วりwá | ${ }^{\text {R }}$ U |
| 224 | copper ${ }^{55}$ | jog，虐，＂ňo． | dzi ${ }^{44}$ | ənjò | ${ }^{\text {F }}$ No |
| 225 | iron | shag，沙，＊－sha． | $\int a^{44}$ | sć | ${ }^{\mathrm{F}} \mathrm{J} \mathrm{e}$ |
| 226 | copper coin | p＇a byed，巴炎，＂${ }^{\text {¹ }}$ ‘dži．${ }^{56}$ | $\mathrm{ba}^{44} \mathrm{~d} 3 \mathrm{e}^{44}$ | báḍž | ${ }^{\mathrm{RP}}$ bæd3e |
| 227 | incense ${ }^{57}$ | sog，梭，＊－so． | $66^{32}\left[-n 0^{53}\right]$ | cá | $\mathrm{EP}_{\text {Sex }}[-\mathrm{mu}]$ |

${ }^{50}$ The Duoxu form stands for both＇wheat＇and＇barley＇．
${ }^{51}$ This XFYY form possibly refers to the word for＇dhole＇，cf．Kălā Lizu／${ }^{\text {r }}$ de／，Ersu／vé／．Our Duoxu consultants could not recall the corresponding Duoxu form．
${ }^{52}$ The Duoxu form is a loan from Mandarin，éf身，SW Mandarin $/ \mathrm{o}^{21} /$ ．
${ }^{53}$ The word for＇fish＇is a loan from Mandarin，yú 鱼，SW Mandarin $/ \mathrm{y}^{21} /$ ，in all three languages．
${ }^{54}$ The provided Duoxu form rather translates＇things to eat，edibles＇，combining the verb＇to eat＇ $/ \mathrm{dzi}^{32}$／and the patient nominalizer／ $\mathrm{lju} /$ ．Ersu and Lizu forms have been provided accordingly．
${ }^{55}$ The cognate word for＇copper＇is found in the word＇copper pot＇，Duoxu $/ \mathrm{yo}^{44} \mathrm{ge}^{32} /$ ，cf．Ersu ／njò－Ngó／or／njò－dró／，Lizu／EPny－Ngo／．
${ }^{56}$ In all three languages，the modern meaning of this word is＇money＇，＇currency＇．

| 228 | one | cig，几，\％ci． | t6i ${ }^{44}$ | té | Fte |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 229 | two | gis，业，＊ne | ji ${ }^{53}$ | né | ${ }^{\text {R }}$ ne |
| 230 | three | gsum，梭，＊－so | So ${ }^{44}$ | Sí | ${ }^{\text {F }}$ ¢ |
| 231 | four | wo，吾，${ }^{\text {＊}}$ | wu ${ }^{32}$ | zò | ${ }^{\text {F }}$ 3e |
| 232 | five | ＇gog，我＊ $\mathrm{\#}$ о | 10 ${ }^{32}$ | \wá | ${ }^{\text {F }}$ ¢ |
| 233 | six | khun，空＊－khun | $\mathrm{k}^{\mathrm{h}}{ }^{34}$ | trís | ${ }^{\mathrm{F}} \mathrm{f}^{\mathrm{h}} \mathrm{u}$ |
| 234 | seven | ner，念，＊${ }^{\text {neN }}$ | ne ${ }^{34}$ | ssín | ${ }^{\mathrm{F}} \mathrm{t}$ ¢ |
| 235 | eight | shed，歌＊－śe． | $6 \mathrm{e}^{34}$ | z | ${ }^{\text {F }}$ dze |
| 236 | nine | had，咳，＊－hai | Nge ${ }^{32}$ | Ngè | ${ }^{\mathrm{F}} \mathrm{Ng} \mathrm{e}$ |
| 237 | ten | tshi，齐，＊tśhi | t $6^{\text {h }}{ }^{44}$ | $\mathrm{ts}^{\text {h }}$ ¢́－ $\mathrm{ts}^{\text {h }}$ ¢́ |  |
| 238 | hundred | kyi yag，计压，＊ci－ya． | $t 6^{44}-\mathrm{ja}{ }^{53}$ | tá－zá | EPPe－za |
| 239 | thousand | kyi gto＇，计读，ci tuu | $t 6^{44}-t u^{53}$ | té－opv́ | Epte－tu |
| 240 | ten thousand | kyi med，计墨，＊｀ci｀mö． | t $\left.6{ }^{44}{ }^{43}\right]$－me ${ }^{32}$ | ť́－ <br> Nbó［nts ${ }^{\mathrm{h}}{ }^{6}$ ］ | ${ }^{\text {EPP }}$ te－Nbo |
| 241 | many | metag，咩达，${ }^{\text {＊－me }}$－ | mja ${ }^{53}$ | mí［mjéd | ${ }_{\text {RP }}^{\text {mjax－mja }}$ |
| 242 | few | hup，吽，＊－huN | no ${ }^{34}$ | ní－ní | ${ }_{\text {EPPİ－ne }}$ |
| 243 | one catty | cig ke，计革，ci．kö | $\mathrm{t} 6 \mathrm{i}^{44}\left[5{ }^{53}\right]-\mathrm{ke}$ | té－tté | EPte－qP |
| 244 | one tackle | cig log，计諾，＂ci．no． | t $64^{44}-10^{53}$ | té－1ó | EPte－lo |
| 245 | one article ${ }^{58}$ | cig＇tsham，计藏，＂ci． ＇tshan | t $6 i^{44}\left[{ }^{53}\right]-t 6^{\text {b }} \mathrm{a}^{32}$ | tá－tss ${ }^{\text {há }}$ | ${ }^{\text {RP }}$ te－p¢æ |
| 246 | I | yag，阿，＊－pa． | na ${ }^{44}$ | á | ${ }^{\text {F }} \mathfrak{X}$ |
| 247 | you | no＇，那，＊naa | no ${ }^{44}$ | né | ${ }^{\text {F }}$－ |
| 248 | he，she | thed，特，＊thö． | $\mathrm{t}^{\mathrm{h}}{ }^{44}$ | $\mathrm{t}^{\text {hé }}$ | ${ }^{\text {Fthe }}$ |
| 249 | who | s＇e，色，＊sö | $\mathrm{se}^{44}-\mathrm{gu}{ }^{44}$ | şé－tè | ${ }_{\text {F }}$ se，LPse－te |
| 250 | ［my］self | ［1ag］yod，［阿］呟，＊－ nа．－yo． | $\mathrm{jo}^{44}$ | jó | Fo |
| 251 | another | su，畜，＊sóu | $6 u^{44}$ | sív＝jí－té | ${ }^{\text {LP }}$ kætci－bo |
| 252 | to dance | khyu khyu，曲曲，＊－chu －chu | $t 6^{\mathrm{h}} \mathrm{u}^{44}-t 6^{\mathrm{h}} \mathrm{u}^{44}$ | ətó－ətó | ${ }^{\mathrm{RP}}$［de－］tso |
| 253 | to sing | gyag，架，＂ja． | dzas ${ }^{5}$ | gá | Fga |
| 254 | to delight in， to like | ＇jag，贾，＊ja． | dza ${ }^{32}$ | gà | ${ }^{\mathrm{R}} \mathrm{g}$ æ |
| 255 | tolaugh | haha，哈哈，＊－ha－ha | xa ${ }^{32}-\mathrm{xa}{ }^{53}$ | r＇́r | ${ }^{\text {R }}$－ |
| 256 | to cry，to weep |  | $1 \mathrm{e}^{44}$ | Nbè | ${ }^{\mathrm{R}} \mathrm{gu}$ |
| 257 | to be happy | bsam pa khyog，三巴鹊， ＊－san－pa｀cho．${ }^{59}$ | $\mathrm{sa}^{44} \mathrm{ba}^{44}\left[=1 \mathrm{a}^{44}\right]$ | sáNbá［dè－ dzze] | ${ }^{\text {Ep }}$ SæNbæ <br> ［bze］ |
| 258 | to go | yid，依，＊－yi． | ji4 | z̀ | ${ }_{j} \mathrm{j} \mathrm{i}$ |
| 259 | to go out | pad，擺，＊pai | pe ${ }^{44}$ | \̌́－jí | ${ }^{\text {RP }}$ ne－ko－ji |
| 260 | to come | lag ，拉，＊－la． | $1 \mathrm{a}^{32}$ | là | ${ }^{1} 1 \times$ |
| 261 | to walk | go＇o，割过，＊－gö ko | $6 \mathrm{e}^{44}-6 \mathrm{e}^{44}$ | siz－sź | ${ }^{\text {EPP }}$ xu－xu |
| 262 | to arrive | pad dag，擺大，＊pai da | $\mathrm{pa}^{53}=1 \mathrm{l}^{32}$ | pà＝lá | ${ }_{\text {RP }}$［de－］pıæ |
| 263 | to get | a dag，凹打，＊－${ }^{\text {a }}$ da． | wa ${ }^{53}\left[=1 a^{32}\right]$ | rà | ${ }^{\mathrm{R}} \mathrm{h}$ ¢ x |
| 264 | to seek | lan khog，量壳，＊＇laN khö | $1 \mathrm{ja}^{32}-1 \mathrm{l}^{53}$ | วț̣á | ${ }^{\mathrm{RP}} \int æ$－ $\int æ$ |

[^18]| 265 | to rise | wan，万，＊wan | we ${ }^{53}\left[=1 a^{32}\right]$ |  | RP［de－］gu |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 266 | to enter | go lag，葛拉，＊＇oö－la． | dzi ${ }^{3} 2-1 \mathrm{l}^{32}$ | káálá | ${ }^{\text {LP }} \mathrm{k}^{\mathrm{h}} \mathrm{e}$－li |
| 267 | to borrow | yu＇，余，＂＇yö | $\mathrm{ji}^{44}$ | ［k ${ }^{\text {kiel }}$ ］ 60 | ${ }_{6} \mathrm{~F}$ e |
| 268 | to know | a si［se］，阿色，＊－a sö̀ | se ${ }^{32}$ | xàsć | ${ }^{\text {LP }}$ hữz |
| 269 | to exist | ＇jog，觉，＊＇jo． | dzo ${ }^{44}$ | dzó | ${ }^{\text {F }}$ d3O |
| 270 | to be late | dag wag，打凹，＂da． wa． | da ${ }^{44} \mathrm{wa}^{44}$ | dzéwá | ${ }^{\text {EP }}$ dzywæ |
| 271 | to hasten | rko med，各墨，＂kö mö． | $\left[\mathrm{ja}^{32}-\mathrm{C} \mathrm{ko}^{44} \mathrm{me}^{44}\right.$ | $\text { [já-]Nts }{ }^{\text {hó }}$ |  |
| 272 | to beat | yag，亚，＊ya． | ja ${ }^{32}$ | ká | ${ }^{\text {F }} \mathrm{F}$ ® |
| 273 | to finish | pe dag，备打，＊＇pe da． | pi ${ }^{53}$ |  | ${ }^{\text {LP}}$［the－］dzy |
| 274 | all | yod＇ag，约呷，＊－yo．－śa． | $j^{32}-\mathrm{ka}^{44}$ | njò－kwá | ${ }^{\mathrm{RP}} \mathrm{j}$－${ }^{\text {－qwe }}$ |
| 275 | pitiable | shag dog，虾多，＊－śa． do． | $6 \mathrm{a}^{44} \mathrm{do}^{44}$ | ṣàyá | ${ }^{\text {EPP }}$ ¢æ】æ |
| 276 | to knee | tug，覩，＊＿tu． | $\left[\mathrm{ts}^{4} \mathrm{u}^{34} \mathrm{mu}^{32}\right] \mathrm{tu}^{32}$ | ［píNbí k ${ }^{\text {º́ }}$ ］əké | ${ }^{\mathrm{EP}}$［puNge ${ }^{E P}{ }^{\mathrm{h}} \mathrm{e}$－］kə |
| 277 | to give | khog，课，＂khö | $\mathrm{k}^{\mathrm{h}}{ }^{53}$ | tchí | ${ }^{\mathrm{R}} \mathrm{k}^{\mathrm{h}} \mathrm{e}$ |
| 278 | to be new | she tsog，设作，＊｀shö ＇tso． | $\mathrm{So}^{32} \mathrm{tso}^{53}$ | șż̀țָwá | ${ }^{\text {EPP }}$ Jutse |
| 279 | to be old | li dag，利打，＊li da． | $11^{53}$ | p hàlé | ${ }^{\text {R }}$ le |
| 280 | to repay | po shag，薄厦，＊＇po｀sa． | tsa ${ }^{34}$ | ［thá－］xwá | ${ }^{\text {RP }}\left[\mathrm{t}^{\mathrm{h}} \mathrm{e}-\right] \mathrm{xw}$ |
| 281 | to put on shoes | si wad，洗歪，＊＿śi－wai | $\mathrm{zi}^{44}\left[\mathrm{ka}^{44}\right] \mathrm{we}^{34}$ | zż［dè－］zú | ${ }^{\text {LP }}$ zə ［de－］wu |
| 282 | to wear |  | we ${ }^{34}$ | zź | ${ }^{\text {LPP}}$［de－］wu |
| 283 | to take off |  | $\mathrm{ka}^{44}$ | kwá | ${ }^{\mathrm{RP}}\left[\mathrm{t}^{\mathrm{h}} \mathrm{e}-\right] \mathrm{qwe}$ |
| 284 | to plunder | su lug，续骝，¢óu liu． | $\left[6 u^{44}\right]$ lju ${ }^{53}$ |  | ${ }^{\mathrm{RP}}\left[\mathrm{t}^{\mathrm{h}} \mathrm{e}-\right] \mathrm{l} \mathrm{y}$ |
| 285 | to speak | ＇geg，吹，＂үö． | $\mathrm{ne}^{34}, \mathrm{k}^{\mathrm{h}} \mathrm{a}^{44} \mathrm{t}^{\mathrm{h}} \mathrm{O}^{44}$ | $\mathrm{k}^{\text {hatt }}$＇ó | ${ }^{\text {EP }} \mathrm{q}^{\mathrm{h}} \mathrm{ta}^{\mathrm{h}} \mathrm{O}$ |
| 286 | to raise | chi dag，起达，＊chi＇da． | $\left[\mathrm{mi}^{32}-\right] \mathrm{t}^{\mathrm{h}}{ }^{32}$ | ［dé－］tss ${ }^{\text {h }}$＇́ | ${ }^{\text {EP }}[$ de－$\left.] t\right]^{\text {h}}$ \％ |
| 287 | to write | zhin，认，＊zhön | $3 i^{53}$ | ró | ${ }^{\text {F }}$ I |
| 288 | to be heavy | l＇i，利，＊lii | $\mathrm{li}^{34}$ | วné | ${ }^{\text {F }}$ l |
| 289 | this |  | $\mathrm{ke}^{51}-\mathrm{t}^{\mathrm{h}} \mathrm{e}^{51}$ | $\mathrm{t}^{\text {h＇é－k }}$ | ${ }^{\text {F }} \mathrm{ko}$ ，LP Lu －ke |
| 290 | that | the＇，特，＊＇thöö | $\mathrm{jo}^{44}-\mathrm{t}^{\mathrm{h}} \mathrm{e}^{32}$ | á | ${ }^{\text {LP }}$ wo－ke |
| 291 | skin | ken，更，＊－kön | $\mathrm{ge}^{44} \mathrm{pi}^{44}$ | Ndivipí | ${ }^{\text {EP }}$ Ndrupe |
| 292 | to be light | yi chug［tshug］，衣粗， ＊＇yi tshu． | $\mathrm{ji}^{44} \mathrm{cs}^{\text {c }} \mathrm{O}^{44}$ | gó－zgó | ${ }^{\text {EPP }}$ gu－go |
| 293 | to exchange |  | to ${ }^{44} \mathrm{ke}^{44}$ | Nḍzz̧－Nạzz̧ | ${ }^{\text {LP }} \mathrm{t}^{\mathrm{h}}$ e－Ngu－Ngu |
| 294 | to be thin | dpa＇，拔，＊＇paa | $\mathrm{ba}^{32}$ | bz̀－bź | ${ }^{\text {EPP }}$ bi－bje |
| 295 | to be thick | kyu，局，＊＇cu | dzu ${ }^{34}$ | bý | ${ }^{\mathrm{F}} \mathrm{z}$ y |
| 296 | not listen | ma pad yag，马巴呀， ＊ma｀pa．－ya． | $\mathrm{ma}^{32}=\mathrm{ba}^{53} \mathrm{na}^{32}$ | mà＝bánì | ${ }^{\text {LP }} \mathrm{m}$（ $=$ bæлi |
| 297 | Tosu ${ }^{60}$ | tog so，多续，＊－to．｀su | do ${ }^{44}-6 \mathrm{u}^{44}$ |  | ${ }^{{ }^{\mathrm{E}} \mathrm{lu} \mathrm{l}-\mathrm{zu} \text { or }{ }^{\mathrm{EP}} \mathrm{l} \text { y- }}$ |
| 298 | to send off | dpe＇kyi，白鸡，＊＇pai－ci | $\mathrm{pe}^{32} \mathrm{t}$ ¢ $i^{53}$ | ［ y à－］pàtstsz | ${ }^{\text {RP }}\left[\mathrm{t}^{\mathrm{h}} \mathrm{e}-\right]$ pet 6 i |
| 299 | （Tosu and） China； Chinese | $\begin{aligned} & \text { (rtog sug) tse, (多续) 姐, } \\ & \text { *-to `śu _tse } \end{aligned}$ | dze ${ }^{32}$ | Ndzà | ${ }^{\text {F }}$ Ndze |

[^19]
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[^1]:    ${ }^{1}$ The Lizu（lǐrú 里汝）people（or the Lüzu，lü̆s $\overline{\text { 吕苏，people，as they are also known）are }}$ locally known in Miǎnníng as Mièlà（［口＋灭］腊）or Mǐlā（米拉）people．A close historical relationship between the Duoxu and the Lizu groups can be noted．The two groups have been close neighbors in Miǎnníng for several centuries．In addition，a large number of the Duoxu people from the Níngyuán Dàqiáo（宁源大桥），Cáogǔ（曹古），Tuōwū（拖乌），Yíhǎi（彝海），and Yělè（冶勒）townships in Miǎnníng moved to the Lizu－speaking areas in Kǎlā township（卡拉乡）of the neighbouring Mùlĭ county at the turn of the $20^{\text {th }}$ century（Wáng 2010：6）．In Kǎlā， they have been culturally and linguistically assimilated by the local Lizu speakers．
    ${ }^{2}$ Sūn Hóngkāi mentions Duoxu in several publications on the Ersu language and on the Qiangic subgroup at large．He also published two short vocabulary lists．A 14 －item word list is provided in the 1982 article＂Ěrsū（Duōxù）huà jiǎnjiè 尔苏（多续）话简介＂［An outline of Ersu （Duoxu）］in order to demonstrate a close relationship between Duoxu and Ersu（p．242）．A 30－ item word list is provided in Nishida and Sūn（1990：17）．Following Sūn（2001），current

[^2]:    classifications of Tibeto－Burman languages of China list the Ersu language as a member of the Qiangic subgroup（cf．Bradley 1997：36－37）．
    木里），and Jiǔlóng（九龙）counties．Tone notation in Lizu is provided in superscript letters to the left of the lexical word．Lizu combines lexical tone on monosyllabic words and a hybrid system of tone and stress on polysyllabic words and compounds（see Chirkova and Chen 2013 for a detailed discussion）．The following abbreviations for tone and tonal patterns are used：＂F＂ stands for falling tone，＂R＂for rising tone，＂EP＂for＂equally prominent pattern＂，＂LP＂for ＂left－prominent pattern＂，and＂RP＂stands for＂right－prominent pattern＂．
    ${ }^{4}$ Ersu（／ว้－ssý xò／，尔苏语 érrsūyǔ）is spoken in Gānluò（甘洛），Yuèxī（越西），Shímián（石棉）， Hànyuán（汉源），and Jiǔlóng counties．Ersu is a register tone language with two registers：High and Low．In Ersu transcriptions，high－and low－register tones are marked with tone diacritics （＂á＂，and＂à＂，respectively）．
    ${ }^{5}$ This estimation is based on a list of basic vocabulary of ca．1，700 words（Sūn Hóngkāi p．c．， 2008）．

[^3]:    ${ }^{6}$ The question of the ethnic identity of the Duoxu Tibetans is too complex a matter to go into in detail within the scope of this article．Important recent publications on this topic include Yuán （2010，2011，2012），Wáng（2010），and Wū Dá（2010）．

[^4]:    ${ }^{7}$ A detailed phonetic－phonological sketch of Duoxu，accompanied by sound files，is in preparation．

[^5]:    ${ }^{8}$ Illustrative examples in Chinese characters are accompanied by Standard Mandarin transcriptions in the pinyīn system of transcription to the left of the form，and by SW Mandarin transcriptions in IPA to the right of the form．SW Mandarin forms are based on Lǐ（2010，p．c．）．

[^6]:    ${ }^{9}$ More variational patterns can in fact，be observed，for the speakers of the transitional group． Examples include：（1）epenthetic stops between nasals and high vowels（as in＇sunshine＇： $\left[\mathrm{me}^{32}-\mathrm{tc}^{\mathrm{h}} \mathrm{a}^{44}\right]$ vs．$\left[\mathrm{mbe}^{32}-t \epsilon^{\mathrm{h}} \mathrm{a}^{44}\right]$ ，＇fire＇：$\left[\mathrm{mje}^{32}\right]$ vs．$\left[\mathrm{mbje}^{32}\right]$ ），and（2）free variation between ［mi］and［ni］in some words（as in＇aunt，wife of mother＇s brother＇：［ $\mathrm{a}^{32}-\mathrm{ni}^{44}$ ］for the speakers of the conservative group，but $\left[\mathrm{a}^{32}-\mathrm{mi}^{44}\right]$ for the speakers of the transitional group）．However， as these variational patterns are more marginal than the patterns outlined in the main text，they are not discussed in detail．

[^7]:    ${ }^{10}$ These words are 'month', 'yesterday', 'last year', 'intestines, bowels', 'gallbladder', 'urinary bladder', 'sweat', 'spittle', 'excrement', 'urine', 'pus', 'to drink', 'to cry, to weep', 'to wear', 'to take off', 'stupid', and 'this'. These 17 words lack a form in the "XFYY" column in the table of comparative vocabulary in the appendix. A dictionary of Duoxu is in preparation, which will include all words recorded for this language.

[^8]:    ${ }^{11}$ Nishida＇s reconstructions are cited in the original notation．The following conventions apply （Nishida 1973：115－116）：＂一＂：high even tone；＂＇＂＂：rising tone；＂＂：low even tone；＂＂＂：high falling tone；／－n／：nasal coda；／－．／（syllable－final dot）：stop coda；／̈̈／：$[\gamma]$ ．
    ${ }^{12}$ The Chinese transcriptions of the Duoxu vocabularies in XFYY are likely to have been made in a SW Mandarin dialect，as evidenced by some characteristic sound changes．For example， initials $/ \mathrm{n} /$ and $/ \mathrm{l} /$ are not distinguished in many cases（see examples in this section）．To take another example，one of the characteristics of SW Mandarin is that Middle Chinese voiced stops and affricates in the entering tone category developed in this group of dialects into voiceless aspirates．In contrast，in Northern Mandarin dialects，as represented by Standard Chinese，Middle Chinese voiced stops and affricates in the entering tone category developed into voiceless unaspirates．The Chinese transcription of the word＇hail（13）＇in the vocabulary list illustrates such a characteristic SW Mandarin development．Based on the Tibetan transcription of this word as／tshu／，and the Modern Duoxu form $/ \mathrm{ts}^{\mathrm{h}} \mathrm{u}^{34} /$ ，the Chinese transcription of this form，＂族＂，is likely to have had the target reading $/ \mathrm{ts}^{\mathrm{h}} \mathrm{u}$（ that is，with a voiceless aspirated initial）．This would be a regular SW Mandarin development from the Middle Chinese reading of 族，$d z u w k$ ，to $/ \mathrm{ts}^{\mathrm{h}} \mathrm{u}^{21} /$ ．（To compare，the Standard Chinese reading of this form is $z u ́ / t \mathrm{tsu}^{35} /$ ）．
    ${ }^{13}$ Nuosu Yi examples are from the online Nuosu Yi－Chinese－English Glossary （http：／／www．yihanyingcihui．net／？page＿id＝6065\＆lang＝en），accessed 26 September 2013.

[^9]:    ${ }^{14} \mathrm{WT}-a d$ to modern Tibetan $/ \mathrm{e} /, / \varepsilon /($ or $/ \varepsilon$ R／） ）is a common change in many Tibetan dialects（e．g． Bātáng＇ba＇thang 巴塘 Tibetan／$\varepsilon$／／，Gésāng 1989：345；Kami Tibetan／e／，Chirkova in press）．

[^10]:    ${ }^{15}$ To compare，in the Báimǎ vocabularies of XFYY，the character 哈／xa／is used to record a broad range of essentially velar and glottal sounds in the Báimǎ language（e．g．$/ \mathrm{k}-, \mathrm{k}^{\mathrm{h}}-, \mathrm{g}-, \mathrm{n}-$ ， yg－，x－， $\mathbf{y}^{-}$，fi－／，but also／z－，ndz－， $\int-, 3^{-/}$and zero initial）（Chirkova 2007）．

[^11]:    ${ }^{16}$ Ersu and Lizu data are from personal fieldwork. Ersu is represented by the variety of Gānluò county; and Lizu is represented by the variety of Kǎlā township of Mùľ̌ county. See Chirkova et al. (forthcoming) and Chirkova and Chen (2013) for the phonetic-phonological sketches of Ersu and Lizu, respectively.

    I consider Ersu and Lizu to be closely related, taking Yu's (2012) successful reconstruction of the hypothetical parent language of Ersu and Lizu, based on regularly recurring sound correspondences in a large number of cognate sets, as strong evidence of a close relationship between these two languages.

[^12]:    ${ }^{17}$ An anonymous reviewer of this paper pointed out that the roots for＇moon＇and＇month＇ should be the same，while they appear to be different in Duoxu（respectively，$/ \mathrm{ne}^{32}\left[-\mathrm{ma}^{53}\right] /$ and $/ \mathrm{ja}^{32} /$ ）．In my analysis，these two Duoxu forms do indeed share the same root．Of the two forms，$/ \mathrm{lja}^{32}$／（in＇month＇）is likely to be more conservative（as also suggested by the corresponding Ersu and Lizu forms for＇month＇and＇moon＇）．Conversely，$/ \mathrm{ne}^{32} /$（in $/ \mathrm{ne}^{32}$［－ $\mathrm{ma}^{53}$ ］／＇moon＇）represents a development of that more conservative form，conditioned by the medial glide $/ \mathrm{j}$／and the nasal consonant $/ \mathrm{m} /$ ．Both $/ \mathrm{j} /$ and nasals have assimilatory effects on the neighboring vowels．While／j／generally contributes to the raising of vowels（e．g．Ladefoged \＆ Maddieson 1996：286－288），nasalization promotes raising of low vowels（see Beddor 1991 for a detailed discussion）．Anticipatory nasalization on the vowel preceding $/ \mathrm{m} /$ may be an additional factor that has contributed to the change in the initial of this form（from $/ \mathrm{lj} /$ to $/ \mathrm{nj} /$ ）．Overall， medial elements with a high tongue position and nasals are two important factors that promoted raising of low vowels in Duoxu，Ersu，and Lizu（cf．Chirkova \＆Handel 2013b）．Attestations of Duoxu in XFYY are particularly valuable in that they may point to earlier nasal codas or nasalized vowels，which are no longer part of the phonemic inventories of modern Duoxu，Ersu， and Lizu．Take the Chinese character 咱／tsan／as an example．It is used in the transcription of many Duoxu forms in XFYY，including＇bridge（29）＇，＇daughter（74）＇，＇north（179）＇，＇leaf （195）＇，＇dragon（208）＇，and some others．An original nasal coda in these forms would account for the raising of the vowel in the Ersu and Lizu forms（e．g．＇bridge＇，likely a loan from
     this issue．

[^13]:    ${ }^{18}$ For example，＇to be soft（40）＇is XFYY ni mo，宜磨 ni mo，＊＇ni＇mo；Ersu／njò－njó／，Lizu ／EPny－ny／，but modern Duoxu／bje ${ }^{44} \mathrm{ka}^{44} /$ ．To take another example，＇to be lazy（91）＇is XFYY mag tho，马兔 ma $\mathrm{t}^{\mathrm{h}} \mathbf{u}$ ，＊＿ma．｀thu；Ersu／má－tçó，Lizu／${ }^{\mathbb{R}}$ mæ－t $\mathrm{t}^{\mathrm{h}} \mathbf{u}$／；but modern Duoxu $/ \mathrm{ge}^{53} /$ ．
    ${ }^{19}$ The corresponding forms in Ersu and Lizu are／dź－tṣ ${ }^{\mathrm{h}} \underset{/}{ } /$ and $/{ }^{\mathbb{E P}} \mathrm{de}$－t $\int^{\mathrm{h}} \partial$ ，respectively．The prefixes／d $\varepsilon$－／and／de－／both mean＇upward＇．

[^14]:    ${ }^{20}$ The word for＇sky＇，／me／，appears in many composite words，e．g．＇wind＇，＇rainbow＇，＇smoke＇． The first two syllables in the Ersu and Lizu forms for＇sky＇are loans from Tibetan，gnam kha ［zheng］＇sky，heavens＇．
    ${ }^{21}$ All three languages substitute＇fog＇for＇cloud＇．
    ${ }^{22}$ This expression means＇to rain＇；the noun＇rain＇is Duoxu／wa ${ }^{53} /$ ，Ersu／gwà／，Lizu $/{ }^{\mathrm{R}} \mathrm{Ngwæ} /$ ．
    ${ }^{23}$ The last two syllables in the Duoxu form are loan from SW Mandarin，虹／kay ${ }^{213} /$ followed by the suffix 儿 $/ 2 \%$ ．
    ${ }^{24}$ This Ersu form is a loan from SW Mandarin shāzi 沙子／sa ${ }^{44}$ tsə ${ }^{53}$／＇sand＇．The Duoxu and Lizu forms tentatively consist of the roots＇sand＇and＇soil，earth＇．
    ${ }^{25}$ The morpheme $/ \mathrm{ga}^{32}$／in the Duoxu form is a classifier for elongated objects，see also＇ditch （42）＇below．

[^15]:    ${ }^{26}$ The modern Duoxu and the XFYY forms literally mean＇the sky has darkened＇．

[^16]:    ${ }^{32}$ The Duoxu form is a fusion of the root for＇sweat＇（／ku／）and the root for＇liquid＇（／ə／）（cf． ＇pus＇below）．
    ${ }^{33}$ The XFYY，modern Ersu and Lizu forms are loans from Tibetan，WT dgon pa．The modern Duoxu and one of the Ersu forms are loans from Nuosu，bbur yi，［ $\mathrm{bu} \underline{u}^{33} \mathrm{zi}^{33}$ ］，＇shrine，temple＇．
    ${ }^{34}$ The forms in the three languages are all loans from Mandarin，zhōng 昷，SW Mandarin ／tson ${ }^{44}$／．
    ${ }^{35}$ The Duoxu form means＇bowl，basin＇；the Ersu form is a loan from SW Mandarin，jiăopénr脚盆儿 $/ \mathrm{t} \mathrm{co}^{21} \mathrm{p}^{\mathrm{h}} \partial \mathrm{x}^{21}$ ；the Lizu form means＇washbasin＇．
    ${ }^{36}$ The modern Duoxu form is a loan from Mandarin，zhuōzi 桌子，SW Mandarin $/ \mathrm{tso}^{21} \mathrm{tss}^{53 /}$ ， cf．WT $\operatorname{cog} t s e$ ．
    ${ }^{37}$ This word is a recent loan from Mandarin，yàoshi 钥匙，SW Mandarin $/ \mathrm{jo}{ }^{21} \mathrm{~S}^{44} /$ ，followed by the Duoxu classifier／pu／＇item＇．

[^17]:    ${ }^{45}$ The modern Duoxu and Ersu forms appear to be loans from SW Mandarin，／mei ${ }^{21 /}$ 墨 ‘ink＇．
    ${ }^{46}$ The XFYY form rather appears to correspond to Modern Duoxu $/ \mathrm{wa}^{32}-\mathrm{p}^{\mathrm{h}} \mathrm{o}^{53} /$ meaning ＇outside＇（see 187）．
    ${ }^{47}$ The Ersu form literally means＇behind the back，reverse side＇．
    ${ }^{48}$ The Ersu and the Lizu forms／mító／and／RP metco，${ }^{\mathrm{RP}}$ meto／，respectively，are loans from Tibetan，WT me tog；the Ersu form／xwà／is a loan from Mandarin，huā 花，SW Mandarin $/ x^{44}{ }^{44} /$ and／ví／is a loan from Nuosu Yi，vie［ve ${ }^{33}$ ］．
    ${ }^{49}$ The Duoxu consultants could not recall the generic word for＇fruit＇，and used the form for ＇peach＇instead．

[^18]:    ${ }^{57}$ The modern Duoxu and Ersu forms are loans from Mandarin，xiāng 香＇incense＇，SW Mandarin $/ \mathrm{cia}^{44} /$ ．The XFYY and the Lizu forms are likely to be from WT bsang．
    ${ }^{58}$ The provided forms are classifiers for clothes in all three languages．
    ${ }^{59}$ WT bsams pa＇thought，mind＇．

[^19]:    ${ }^{60}$ Forms in the Ersu and Lizu columns are autonyms of these two ethnic groups；both mean ＇white people＇．

