

Topics in the Grammar of Gyegu Tibetan

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**Abstract**

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This dissertation describes the variety of Tibetan spoken in and around Yushu City in Qinghai Province, People's Republic of China. Chapter 1 provides an overview of the area where Gyegu Tibetan is spoken, previous research on closely related varieties, and the language's classification and vitality. Chapter 2 describes the language's phonology, including its large phoneme inventory and four-way laryngeal contrast between voiced, tense, breathy, and aspirated obstruents. Chapter 3 presents lexical and phrasal categories and details the morphological, syntactic, and semantic behavior of each category. Finally, Chapter 4 focuses on clausal morphosyntax, describing a wide variety of syntactic phenomena, including Gyegu Tibetan's system of evidentiality and egophoricity. Together, these chapters offer a detailed account of the language, serving as a foundation for further research on variation within the Tibetic language family and its notable phonological and syntactic features.

# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Data Collection and Speakers . . . . .	1
1.2	Study Aim . . . . .	3
1.3	Linguistic Classification . . . . .	4
1.4	Gyegu Tibetan Language Area . . . . .	11
1.5	Previous Research . . . . .	15
1.5.1	Recent Anthologies on Tibetic Languages . . . . .	15
1.5.2	Yushu Dialect Research . . . . .	16
1.6	Speaker Demographics and Vitality . . . . .	18
1.7	Ethnographic Notes . . . . .	23
1.7.1	Religion . . . . .	23
1.7.2	Food . . . . .	25
1.8	File Naming Convention and Example Labeling . . . . .	26
1.9	Structure of the Dissertation . . . . .	27
<b>2</b>	<b>Phonetics &amp; Phonology</b>	<b>29</b>
2.1	Research on Related Varieties . . . . .	29
2.2	Consonants . . . . .	30
2.2.1	Previous Analyses . . . . .	31
2.2.2	Gyegu Tibetan Consonant Inventory . . . . .	35

2.2.3	Nasals . . . . .	38
2.2.3.1	Bilabial Nasals . . . . .	38
2.2.3.2	Alveolar Nasals . . . . .	42
2.2.3.3	Palatal Nasals . . . . .	45
2.2.3.4	Velar Nasals . . . . .	47
2.2.4	Approximants . . . . .	52
2.2.4.1	Lateral Approximants . . . . .	52
2.2.4.2	Palatal Approximants . . . . .	56
2.2.4.3	Labial-Velar Approximant . . . . .	59
2.2.5	Rhotic . . . . .	60
2.2.6	Fricatives . . . . .	67
2.2.6.1	Glottal Fricative . . . . .	70
2.2.6.2	Alveolar Fricatives . . . . .	71
2.2.6.3	Palatal Fricatives . . . . .	80
2.2.7	Affricates . . . . .	88
2.2.7.1	Alveolar Affricates . . . . .	88
2.2.7.2	Retroflex Affricates . . . . .	96
2.2.7.3	Alveo-Palatal Affricates . . . . .	104
2.2.8	Stops . . . . .	112
2.2.8.1	Glottal Stop . . . . .	113
2.2.8.2	Bilabial Stops . . . . .	115
2.2.8.3	Alveolar Stops . . . . .	123
2.2.8.4	Velar Stops . . . . .	131
2.2.9	Prenasalized Stops and Affricates . . . . .	140
2.3	Vowels . . . . .	145
2.3.1	Previously Proposed Vowel Inventories for Yushu Tibetan . . . . .	145
2.3.2	Oral Vowels: Monophthongs . . . . .	147
2.3.3	Nasal Vowels . . . . .	149
2.3.4	Oral Vowels: Diphthongs . . . . .	150

2.3.5	Nasal Vowels: Diphthongs . . . . .	151
2.4	Syllable Structure . . . . .	151
2.4.1	Onsets . . . . .	152
2.4.2	Codas . . . . .	152
2.5	$f_0$ Phenomena . . . . .	154
2.5.1	Typology of Tibetan Tone . . . . .	155
2.5.2	Gyegu Tibetan $f_0$ Phenomena . . . . .	157
2.5.2.1	Monosyllabic Words . . . . .	158
2.5.2.2	Onsets and $f_0$ . . . . .	159
2.5.2.3	Glottal Stop Codas . . . . .	166
2.5.2.4	Other Codas . . . . .	168
2.5.2.5	Disyllabic Words . . . . .	171
2.5.2.6	Summary of $f_0$ Phenomena . . . . .	179
2.6	Implications for Transcription . . . . .	180
2.7	Summary . . . . .	180
<b>3</b>	<b>Lexical and Phrasal Categories</b>	<b>182</b>
3.1	Typology and Research on Closely Related Varieties . . . . .	183
3.2	Nouns and Noun Phrases . . . . .	184
3.2.1	Lexical Nouns . . . . .	184
3.2.2	Case Marking . . . . .	188
3.2.3	Compound Nouns . . . . .	192
3.2.4	Proper Nouns . . . . .	194
3.2.5	Locative Postpositions . . . . .	196
3.2.6	Nominalization . . . . .	198
3.3	Number . . . . .	198
3.4	Pronouns . . . . .	201
3.5	Determiners . . . . .	208
3.6	Adjectives . . . . .	212
3.6.1	Adjectival Endings . . . . .	213

3.6.2	Adjectives as Manner Adverbs . . . . .	215
3.6.3	Reduplication . . . . .	216
3.7	Adverbs . . . . .	216
3.7.1	Time . . . . .	217
3.7.2	Degree . . . . .	218
3.7.3	Manner . . . . .	219
3.8	Interjections . . . . .	220
3.9	Verbs . . . . .	220
3.9.1	Lexical Verbs . . . . .	221
3.9.2	Complex Verbs . . . . .	223
3.9.3	Transitivity . . . . .	225
3.9.4	Control and Intention . . . . .	226
3.9.5	TAM Inventory . . . . .	227
3.9.6	Copulas . . . . .	231
3.9.7	Auxiliaries . . . . .	232
3.9.8	Negation . . . . .	235
3.10	Summary . . . . .	237
<b>4</b>	<b>Clausal Morphosyntax</b>	<b>238</b>
4.1	Previous Research on Related Varieties . . . . .	238
4.2	Word Order . . . . .	240
4.2.1	Intransitive Clauses . . . . .	240
4.2.2	Transitive Clauses . . . . .	241
4.2.3	Ditransitive Clauses . . . . .	243
4.2.4	Verb/Auxiliary/Copula Word Order . . . . .	245
4.3	Relative Clauses . . . . .	247
4.4	Polar Questions . . . . .	255
4.5	Coordination . . . . .	256
4.5.1	Nominal Coordination . . . . .	257
4.5.2	Adjectival Coordination . . . . .	257

4.5.3	Adverbial Coordination . . . . .	258
4.5.4	Verbal Coordination . . . . .	259
4.6	Tough Constructions . . . . .	259
4.7	Multi-clause Constructions . . . . .	260
4.7.1	Conditionals . . . . .	260
4.7.2	Temporal Adverbial Clauses . . . . .	261
4.7.3	Although . . . . .	261
4.7.4	In Order To . . . . .	262
4.7.5	‘So’ Subordinate Clauses . . . . .	262
4.8	Tense, Aspect, and Modality . . . . .	263
4.8.1	Tense . . . . .	264
4.8.1.1	Future . . . . .	264
4.8.1.2	Present . . . . .	266
4.8.1.3	Past . . . . .	267
4.8.2	Aspect . . . . .	269
4.8.2.1	Perfect . . . . .	269
4.8.2.2	Perfective . . . . .	272
4.8.2.3	Continuous and Progressive . . . . .	273
4.8.3	Modality . . . . .	275
4.9	Evidentiality and Egophoricity . . . . .	277
4.9.1	Non-Tibetic Evidentials . . . . .	278
4.9.2	Evidentials in Tibetic Languages . . . . .	280
4.9.3	Evidentiality in Gyegu Tibetan . . . . .	284
4.9.4	Egophoricity . . . . .	293
4.10	WH-Questions, Focus, and Topic . . . . .	298
4.10.1	Cross-linguistic Review of Focus . . . . .	298
4.10.2	WH-Questions . . . . .	302
4.10.3	Focus in Gyegu . . . . .	303
4.10.3.1	Information Focus . . . . .	303

4.10.3.2	Focus Sensitive Operators . . . . .	305
4.10.3.3	Corrective Focus . . . . .	306
4.10.3.4	Prosodic Prominence . . . . .	308
4.10.3.5	Analysis . . . . .	311
4.10.4	Topic . . . . .	312
4.10.4.1	Topic-Comment Constructions . . . . .	312
4.10.4.2	Contrastive Topic . . . . .	314
4.10.5	Interim Conclusion . . . . .	316
4.11	Summary . . . . .	316
	<b>References</b>	<b>318</b>
	<b>Appendices</b>	<b>328</b>
	<b>A</b>	<b>328</b>
	<b>B</b>	<b>332</b>
	<b>C</b>	<b>337</b>

## List of Abbreviations

1	first person
2	second person
3	third person
ABL	ablative
ABS	absolutive
ADJ	adjective
ADV	adverb
ALL	allative
ATT	attributive
COM	comitative
CONT	continuous
COP	copula
DAT	dative
DEM	demonstrative
DIST	distal
DU	dual
ERG	erg
EXIST	existential
EXP	experiential
FEM	feminine
GEN	genitive
INDF	indefinite
LOC	locative
MASC	masculine
NEG	negative
NMLZ	nominalizer
OTHER	other (non-self) egophoric
PFV	perfective
PL	plural
PRF	perfect
PROG	progressive
PROX	proximal
PST	past
QUOT	quotative
SELF	self egophoric

SENS	sensory
TOP	topic
VIS	visual

## List of Function Morphemes

ŋa	1SG
ŋi	1SG.ERG
ŋə	1SG.GEN
hoʔ	2SG
mər	3SG.FEM
k <sup>h</sup> ər	3SG.MASC
ni	ABL
ma	ADJ
dze	ADV
lə	ALL
la	COM
də	CONT
to	COP.ATT
reʔ	COP.OTHER; OTHER
jin	COP.SELF; SELF
lə	DAT
t <sup>fi</sup> e	DIST.DEM
p <sup>he</sup>	DIST.DEM
p <sup>h</sup> ənde	DIST.DEM
p <sup>h</sup> uje	DIST.DEM.PL
ɲen	DU
gə	ERG
woʔ	EXIST
ɲən	EXP
mu	FEM
gə	GEN
t <sup>fi</sup> e	GEN
ba	GUESS
ze	INDF
la	LOC
ma	NEG
pa	NMLZ

zi	NMLZ; REL.INST
tɕə	NMLZ; REL.PAT
mə	NMLZ; REL.AGT.FORMAL
s <sup>h</sup> a	NMLZ; REL.LOC
k <sup>h</sup> i	NMLZ; REL.AGT
ts <sup>h</sup> an	PFV
non	PL
ze	PRF
ts <sup>h</sup> oʔ	PRF.SELF
sə	PROG
ənde	PROX.DEM
le	PST
s <sup>h</sup> i	QUOT
tɕ <sup>h</sup> o	SENS.SELF
nə	TOP
ŋgə	VIS.OTHER
t <sup>h</sup> i	VIS.PFV

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# Chapter 1

## Introduction

This dissertation describes Gyegu Tibetan, the language spoken in and around Yushu City, Qinghai Province in the People's Republic of China. While it does not constitute a complete grammar, it presents a grammatical sketch of Gyegu phonology, morphology, syntax, and semantics. Particular attention is paid to the typologically unusual phoneme inventory, tonal phenomena, evidentiality, WH-questions, topic, and focus constructions.

### 1.1 Data Collection and Speakers

The idea for this dissertation came about in the spring of 2021 as the result of a field methods course at the University of Washington. The course lasted for 10 weeks, with Dr. Sharon Hargus as the professor. Tsiren Lhayong, a MATESOL student at UW and native speaker of Gyegu Tibetan, volunteered to be the language consultant. Although the class was held remotely due to the ongoing COVID 19 pandemic, we became quite close and discussed the possibility of continuing language documentation after the conclusion of the field methods class. Over the course of the next few years, we stayed in touch and continued sporadically with remote elicitation

sessions, in addition to presenting together at the 8th International Conference on Language Documentation & Conservation (Ukasick & Layong 2023). Eventually, travel restrictions were lifted, and I was able to travel to Qinghai province to conduct in-person fieldwork from August 2023 until August 2024. During my time in China, fieldwork was primarily conducted in the provincial capital of Xining, where I worked with five community members originally from Yushu City. Data was also collected during two fieldtrips to Yushu City itself, one trip in December 2023, and another in July/August 2024.

During my time in Qinghai, I was fortunate to work with many wonderful language consultants including Mary, Tina, Wujin, Diana, Gary, Dennis, and Karma, in addition to Tsiren's family members, all of whom contributed enormously to my understanding of spoken Gyegu Tibetan, written Tibetan, and Tibetan culture. Without them, this dissertation would truly have not been possible.

The recordings on which this dissertation is based were made using a Zoom H4n audio recorder creating 24-bit WAV files at a sampling rate of 44.1 kHz. For recordings where more precise phonetic detail was required, a Countryman E6 omnidirectional earset microphone was used. Selected elicitation sessions were also video recorded using an iPhone 12.

All recordings, ELAN files, and annotations are backed up and stored on multiple devices and on the cloud. Following a strict workflow, after each recording session, files are copied and transferred from the Zoom H4n's SD card to two LaCie rugged 5TB external hard drives. The files are then additionally transferred to a Google drive for cloud storage. After file transfer, all files are renamed and sorted depending on the content of the recording.

Selected textual recordings have been time aligned, transcribed, glossed, and translated using ELAN. These were saved as .eaf files and stored in separate folders from the audio recordings. Primarily narratives, picture describing tasks, and dialogue were transcribed.

In addition to the audio and video corpus, a FLEx database was used to collect and organize data. Each lexical entry in the database contains a corresponding audio file of a language consultant pronouncing the word. The database also contains a small selection of glossed example sentences. The FLEx database is backed up using Language Depot.

## 1.2 Study Aim

Although Gyegu Tibetan is spoken as the primary language of the home in the majority of households in Yushu City, a variety of factors indicate that it is increasingly vulnerable. This dissertation and the accompanying archived corpus preserves valuable linguistic and cultural information for future generations of community members and researchers.

I set out to describe the phonetics, phonology, morphology, and syntax of Gyegu Tibetan in as much detail as possible. Although closely related varieties have been described in more detail, very little work has been done on the Tibetan spoken in and around Yushu City. I aim to not only increase our understanding of the language itself, but also compare the language to these related varieties in order to better understand the typology and variation of “Khams” languages.

To accomplish this, I propose a phoneme inventory, describe important phonetic details and phonological contrasts in the language in addition to describing the syllable structure and  $f_0$  phenomena. Gyegu Tibetan displays a typologically unusual phonological inventory, including a three way laryngeal contrast in voiceless stops, affricates, and fricatives. It also represents an intermediate stage between tonal and atonal languages, where pitch is redundant and determined by the phonological characteristics of the syllable onset and coda, and therefore represents a unique opportunity to study tonogenesis. Describing this phonological system will contribute to our understanding of a variety of phonological phenomena, with implications within the Sino-Tibetan language family and beyond.

I also aim to describe the morphosyntax of Gyegu Tibetan, and contribute to the literature on evidentiality and egophoricity in Tibetic languages. In this dissertation, I set out to describe word formation processes and the various morphosyntactic characteristics of the lexical categories of Gyegu Tibetan. As previously mentioned, the language makes extensive use of sentence final auxiliaries which mark evidentiality and egophoricity. I aim to describe the inventory of morphemes used in these constructions, and demonstrate their use and interpretation through both elicited speech and narrative texts. According to Aikhenvald (2004: 1), evidentiality is used by a speaker to mark their information source and “indicates how one learnt something.” Floyd et al. (2018: 2) define egophoricity as “a general phenomenon of linguistically flagging the personal knowledge, experience, or involvement of a conscious self.” While evidential constructions appear in about a quarter of the world’s language (Aikhenvald 2004: 1), egophoricity is primarily found in the languages of Western China, the Caucasus, and South America (Floyd et al. 2018). The use of these auxiliaries in Gyegu Tibetan also provides the opportunity to better understand the workings of the syntax-semantics interface.

This dissertation is also part of a larger documentation project. The larger project aims to document and archive important linguistic and cultural information and make the materials as accessible to community members as possible. This includes archiving topics chosen by language consultants, such as narratives describing family histories, vocabulary used by older community members, and culturally relevant narratives. The stories to appear in the appendices of this dissertation were chosen by members of the community.

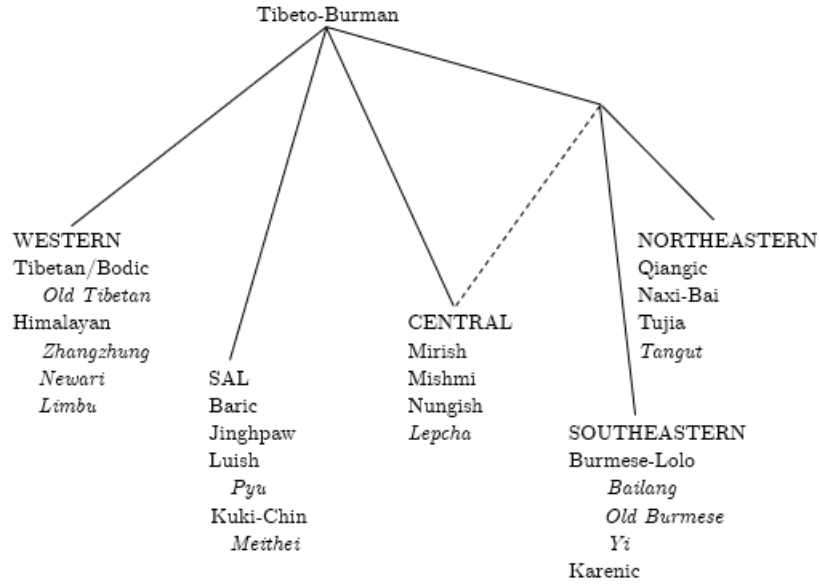
### **1.3 Linguistic Classification**

Gyegu Tibetan is a Tibetic language in the Tibeto-Burman branch of the Sino-Tibetan language family (Tournadre & Suzuki 2023). Although some researchers including Sagart (1999) propose that the similarities between Sinitic languages and

Tibeto-Burman languages are due to contact rather than genetics, it is generally accepted that Sino-Tibetan is a single language family that began to diverge roughly 7,000 years ago (Tournadre & Suzuki 2023: 41).

Tibeto-Burman languages have been classified differently by a variety of linguists. The three most influential classification systems were proposed by Benedict (1972), Shafer (1974), and Bradley (2002). Benedict's (1972) reconstruction is regarded as a "macro" or "teleo-reconstruction" that relies in large part on the comparison of "key" languages (Bradley 2002). This classification includes 7 primary divisions of Tibeto-Burman, and places Tibetic languages within the Tibetan-Kanauri (Bodish-Himalayish) branch. Shafer's (1974) classification includes four subgroups: Bodic (which includes Tibetic languages), Baric, Burmic, and Karenic. Bradley's (2002) classification includes five subgroups: Western, Sal, Central, Southeastern, and Northeastern, as seen in (1). This classification is one of most modern and widely cited in the literature, and is therefore adopted for the purposes of this dissertation. Tibetan languages are included within the Western subgrouping. Bradley (2002: 76) states that the Central subgroup may be a "residual category" and that the internal differences are very large, with the placement of some of the languages of that subgroup being hotly debated. This uncertainty and "residual" nature is reflected in the second dashed line placing the Central subgroup closer to the Southeastern and Northeastern subgroups.

(1) Tibeto-Burman Classification (Bradley 2002: 75)



Tibetic languages have traditionally been classified into three dialect groups; Ü-Tsang<sup>1</sup> (bod), Khams<sup>2</sup> (khg), and Amdo (adx) (Zhang 1996: 115). However, Tournadre and Suzuki (2023) point out a variety of problems with this classification system. Not only does this system focus almost exclusively on the languages spoken within the People’s Republic of China, but it is also not based on specific phonological and lexical innovations and does not take mutual intelligibility into account (Tournadre & Suzuki 2023: 470). Nevertheless, this division is culturally relevant within the Tibetan community, where speakers often identify as either an Ü-Tsang, Khams, or Amdo speaker. If a Khams speaker has extensive knowledge of written

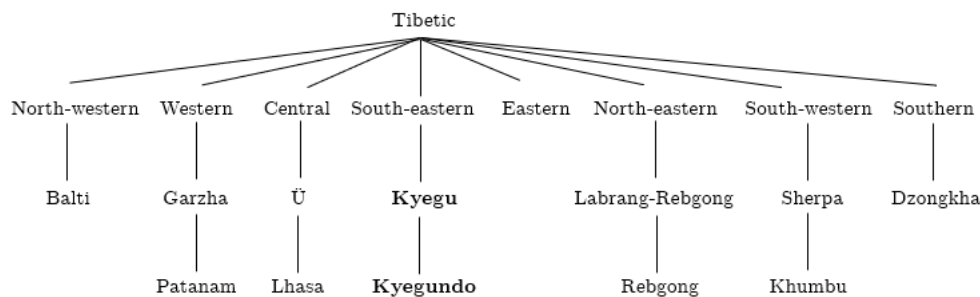
<sup>1</sup>This is sometimes referred to as Central or Standard Tibetan

<sup>2</sup>This region/dialect group is spelled variably in the literature. The written Tibetan spelling of the word is ཁམས, transliterated using the Wylie system as *Khams*. However, the final ས/s is unpronounced in modern varieties. Therefore, some authors including Tournadre and Suzuki (2023) often use the transliteration *Kham* when referring to this region. Not to be confused with the more distantly related Tibeto-Burman languages Gamal Kham (kgj), Eastern Parbate Kham (kif), Sheshi Kham (kip), and Western Parbate Kham (kjl), which are spoken in Nepal.

and Standard Spoken Tibetan, they may be able to communicate with a similarly educated Ü-Tsang or Amdo speaker. However, the three traditional dialect groups are not mutually intelligible .

Recent work has reclassified the Tibetic languages using more precise linguistic methodology. Tournadre and Suzuki (2023: 483) refer to Gyegu Tibetan as Kye-gundo<sup>3</sup> and place it within the Southeastern section<sup>4</sup> and Kyegu-Kyegundo subgroup as seen in (2).

(2) Gyegu Language Classification (Tournadre & Suzuki 2023)



In addition to the Kyegu subgroup, the Southeastern section also includes the following thirteen groups: Nagchu, Drachen/Bachen, Pämbar, Khyungpo, Northern route (Chamdo, Derge, Kandze), Rongdrak, Minyak Rabgang, Southern route (Markham, Bathang<sup>5</sup>, Lithang), Dzayül, Derong-nJol, Chagthreng, Pomborgang, and Semkyi Nyida (Tournadre & Suzuki 2023: 483).

Within the Kyegu subgroup itself, Tournadre and Suzuki (2023) also place the

<sup>3</sup>The most widely used transliteration for the area is ‘Gyegu’, and I therefore adopt this transliteration for the purposes of this dissertation. However, alternative transliterations including Jiegu and Kyegu or Kyegundo are occasionally used by a variety of scholarly and non-scholarly sources.

<sup>4</sup>Tournadre and Suzuki (2023) refer to their second tier subgroupings as “sections” rather than “branches”.

<sup>5</sup>This is distinct from the Batang Township (巴塘乡)(དཔལ་ཐང་ཡུལ་ཁོངས་) near Yushu City.

Nangqian County dialect, Chumarlep-Kham<sup>6</sup>, Thrindu-Kham<sup>7</sup>, Dzatö, Dritö, Gertse Kham, and Gegyā Kham in addition to Gyegu Tibetan. It is still unclear how distinct these varieties are from one another. According to speakers of Gyegu Tibetan, the variety spoken in Nangqian County is quite divergent, and not entirely mutually intelligible. The Chumarlep-Kham variety also displays appreciable differences to Gyegu Tibetan. However, Gyegu Tibetan speakers familiar with the Nangqian and Chumarlep-Kham varieties can communicate effectively. Conversely, the Thrindu-Kham variety is certainly mutually intelligible with Gyegu Tibetan, although they do have noticeable differences in their phonology and syntax. Of these varieties, the most well-documented is Thrindu-Kham, which is described in Sun’s (2019) dissertation. More work needs to be done to determine the grammatical distinctions between these varieties.

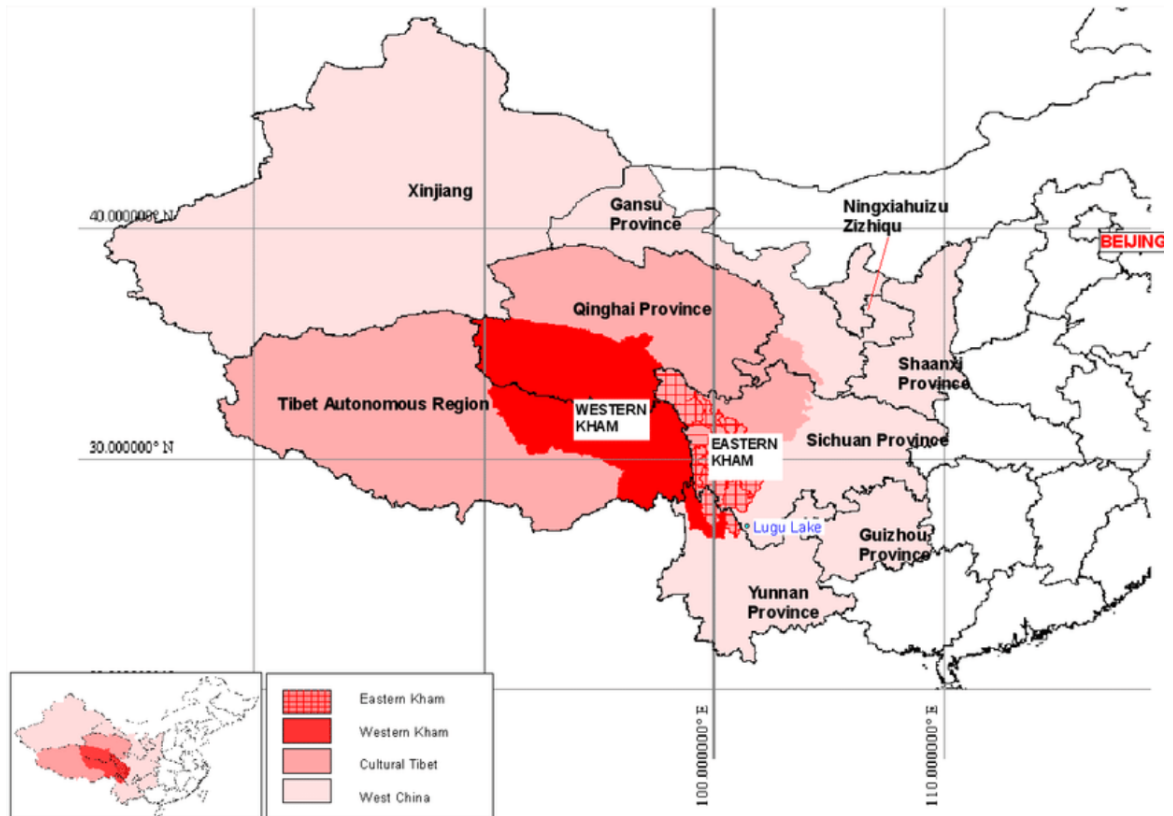
Although the “Khams” classification is problematic from a linguistic standpoint, it continues to be widely used in the literature on Tibetic languages and is widely known in Tibetan culture. Therefore, this dissertation will occasionally reference materials which make use of the “Khams” label or refer to Gyegu Tibetan or “Yushu Tibetan” as a variety of “Khams”. The traditional Khams area can be seen in (3).

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<sup>6</sup>This is also transliterated as Qumalai in some sources.

<sup>7</sup>The Lab dialect falls into this classification.

(3) Khams area from Studley (2010: 109)



Today, the Khams region belongs to parts of various provinces, including the Tibetan Autonomous Region, Qinghai, Sichuan, and Yunnan.

When reading the literature on Tibetic languages, or in casual discussion with Tibetan speakers or researchers, the term “Tibetan dialects” is often encountered. However, as described by Tournadre (2014: 106), the use of the term “Tibetan dialects” implies that there is a single Tibetan language. In terms of linguistic concepts such as mutual intelligibility, there is no such thing (Tournadre & Suzuki 2023). This does not, however, mean that the idea of a single Tibetan language does not exist as a cultural concept in the minds of many Tibetans. The same

script, spelling, and grammar conventions are used to write a standardized version of Tibetan throughout the People’s Republic of China, although this standardized variety is pronounced differently depending on the phonology of the local variety. However, Western linguists have long considered the different varieties of Tibetan to be individual languages in their own right, with diverse systems of phonology, syntax, and semantics. Tournadre and Suzuki (2023) discuss this diversity at length and argue that the “Tibetan language” is in fact a large and varied language family, which they refer to as “Tibetic languages”. The term “Tibetic languages” is adopted and used throughout this dissertation.

In terms of Gyegu Tibetan, many community members and language consultants disagree that it should be considered a language separate from Lhasa or Rebgong Tibetan, even though the three languages are not mutually intelligible. All three varieties stem from Old Tibetan and have a shared history, culture, and written form. Therefore, in the minds of many, these varieties represent dialects of the same language. However, on the basis of mutual intelligibility, I refer to Gyegu Tibetan as a distinct language throughout the dissertation. It is distinct from other varieties of Tibetan, including other “Kham” varieties, and contains its own discrete phonology and syntax. It is also distinct from other varieties spoken in Yushu Prefecture, as previously discussed. However, in certain contexts the terms “dialect” or “variety” may be used to describe the language.

Gyegu Tibetan does not have its own ISO code, and is not listed as a distinct language in Ethnologue (Eberhard et al. 2025). There, the language is considered to be a variety of Kham Tibetan (ISO 639-3: khg). There, the language is classified as a Tibeto-Burman language under the Western Tibeto-Burman, Bodish, Central Bodish branch. It is my opinion that this classification should be revised to align more closely with Tournadre and Suzuki’s (2023) classification of the Tibetic languages, and that the single classification of “Kham” should be further divided into the distinct varieties which are grouped together under this designation. This would more accurately reflect the observed linguistic variation in the region, and provide

researchers with a more empirically grounded view of Tibetic languages.

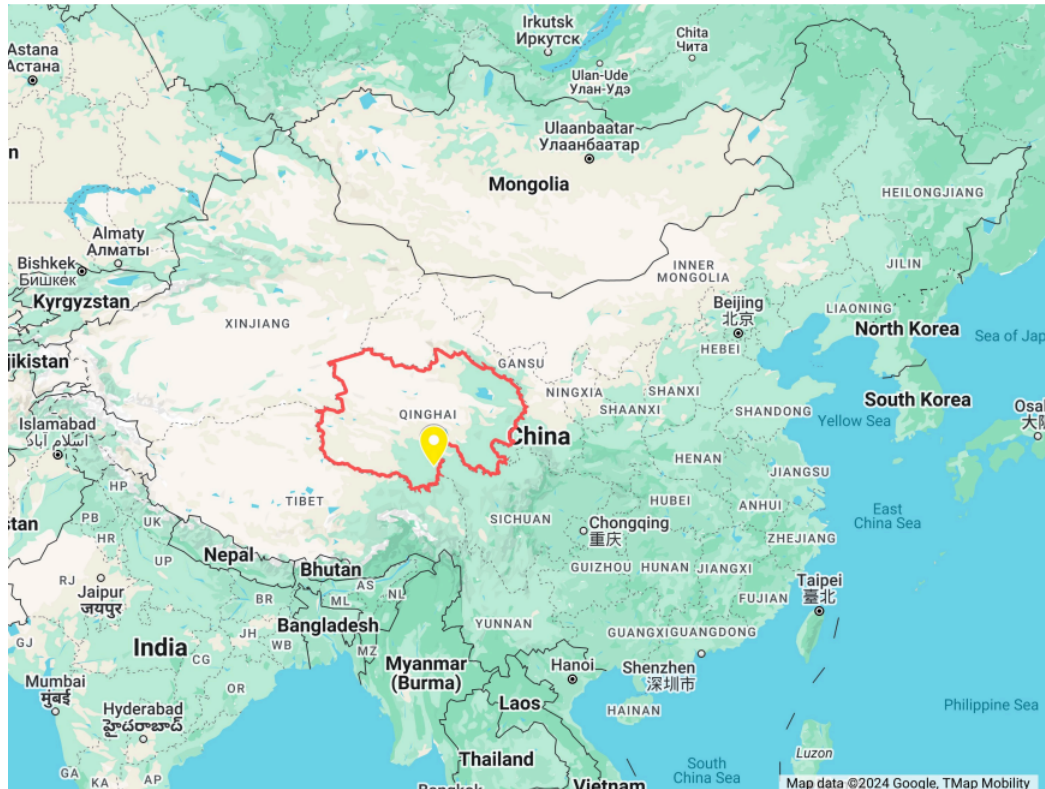
## 1.4 Gyegu Tibetan Language Area

Yushu City is located in Yushu Tibetan Autonomous Prefecture, Qinghai Province, People’s Republic of China. The city is located in southern Qinghai Province, roughly 40 miles from the border of the Tibetan Autonomous Region. An autonomous prefecture is a special administrative division within China. Autonomous administrative divisions exist when more than 50% of the population of an area is an ethnic minority<sup>8</sup>. A prefecture is a second level administrative division directly below the level of province. Yushu Prefecture is comprised of six counties: Yushu City (玉树市) (ཡུལ་ཤུལ་གྲོང་ཁྱེར), Zado County (杂多县) (རྩ་ལྷོད་རྫོང), Chenduo County (称多县) (ཁྲི་འདུ་རྫོང), Zhiduo County (治多县) (འབྲི་ལྷོད་རྫོང), Nangqian County (囊谦县) (ནང་ཆེན་རྫོང), and Qumalai County (曲麻莱县) (རྩུ་དམར་ལེབ་རྫོང). The location of Yushu City within China and Qinghai province can be seen in (4). The borders of Qinghai province have been highlighted in red.

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<sup>8</sup>Under this administrative system, all non-Han ethnic groups are classified as minorities.

(4) Map of Yushu City in China



After discussion with language consultants and other community members, I chose to use the name “Gyegu Tibetan” for the variety described in this dissertation. Gyegu is a transliteration of /tʰɛkə/ རྩེ་དགུ, which is the traditional Tibetan name for the city. As previously discussed, past literature (Sun 2019; Li & Li 2022a) often uses the name Yushu or Yulshul (ཡུལ་ཤུལ) Tibetan in order to refer to the Tibetan spoken in Yushu Prefecture. However, in order to differentiate the variety spoken specifically in and immediately around Yushu City, this dissertation will refer to the language as Gyegu Tibetan. Gyegu Tibetan is spoken in and around the yellow highlighted area in (5). The map inlay shows the location of Yushu City in relation to Qinghai province, which is outlined in red.

(5) Map of Yushu City including the area where Gyegu Tibetan is spoken

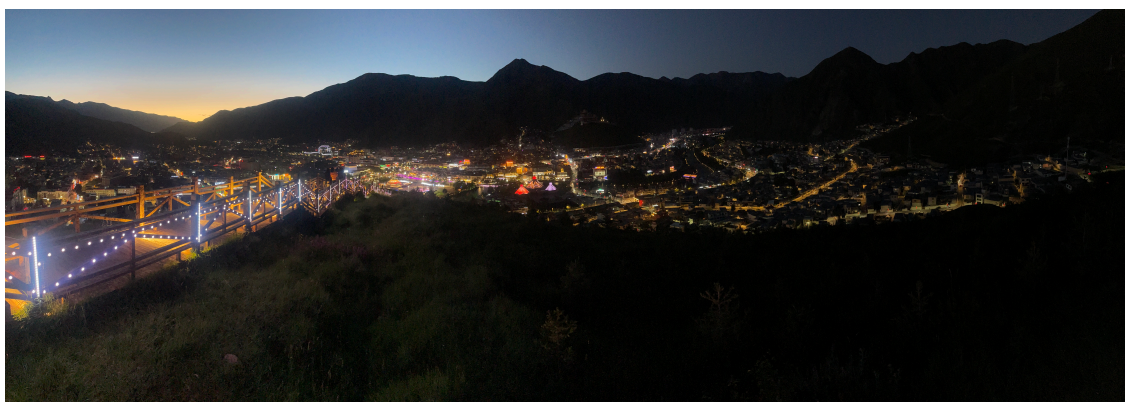


According to the National Bureau of Statistics of China, Yushu City is a county level city consisting of four subdistricts, two towns, and six townships. Subdistricts, towns, and townships are all fourth level administrative divisions in China which fall below the level of county (third level), prefecture (second level), and province (first level). Subdistricts and towns are considered urban classifications, while townships are rural classifications. The fourth level administrative divisions in Yushu City include Gyegu Subdistrict (结古街道)(སྐུ་རྒྱ་སངས་ལམ་), Zhaxike Subdistrict

(扎西科街道)(བྱ་ལུ་ཁོག་སྐང་ལམ), Xihang Subdistrict (西杭街道)(ཞེལ་དཀར་སྐང་ལམ), Senzi Subdistrict (新寨街道)(སེང་ཟེ་སྐང་ལམ), Longbao town (隆宝镇)(རྫོང་པོ་ཁྲོད་རྫོང), Xialaxiu town (下拉秀镇)(རྒྱལ་སྐད་ཁྲོད་རྫོང), Zhongda Township (仲达乡)(འབྲོང་མདའ་ཡུལ་ཚོ), Batang Township (巴塘乡)(དཔལ་ཐང་ཡུལ་ཚོ), Xiaosumang Township (小苏莽乡)(ལྗུར་མང་ཡུལ་ཚོ), Shanglaxiu Township (上拉秀乡)(རྒྱལ་སྐད་ཡུལ་ཚོ), Anchong Township (安冲乡)(ཨ་ཁྲོ་ཡུལ་ཚོ), and Haxiu Township (哈秀乡)(ཧ་ལུ་ཡུལ་ཚོ). Some level of linguistic variation exists within the county itself. However, the variation appears to be relatively minor, and I am not aware of any variety native to the county that is not mutually intelligible with the variety spoken within the Gyegu subdistrict.

Yushu City is located in the Batang river (巴塘河) valley and surrounded by mountains. Yushu City itself is roughly 12,000ft above sea level. The mountains immediately surrounding the city reach heights exceeding 14,000ft. In the valleys and grasslands near the city, some residents still herd yaks and practice a nomadic lifestyle. Although the government has provided permanent housing within the city, many nomads can still be seen in the summer months living in traditional tents and tending to their herds. However, the city itself is very modern and interconnected with the rest of China. There is a river walk, many shopping areas, coffee shops, a museum, and many hotels. Just above the city, there is a scenic overlook which is a popular area for locals and tourists to take photos, which can be seen in (6).

(6) Panorama of Yushu City at night



## 1.5 Previous Research

There is an extensive collection of research involving Tibetic languages from fields including Tibetan studies, Buddhist studies, Anthropology, and Linguistics. However, according to Matisoff (1991: 469), the modern field of Sino-Tibetan linguistics only started around the 1940's. There is great diversity in the focus and frameworks used in Tibetan language research. This section provides a brief overview of relevant linguistic literature dealing with Yushu and Gyegu Tibetan, as well as an overview of collective volumes covering a wide variety of Tibetic languages and important linguistic phenomena observed in those languages. More detailed descriptions of previous research on the phonology, morphology, syntax, and semantics of Tibetic languages, and dialects of Yushu Prefecture in particular, will be provided in the relevant chapters.

### 1.5.1 Recent Anthologies on Tibetic Languages

Gawne and Hill (2017) is a collection of works from various authors describing evidentiality in a variety of Tibetic languages. It describes the typology and history of evidentiality in the language family before moving on to case studies of individual languages.

Tournadre and Suzuki (2023) provide a detailed overview of the entire language family. This book describes the Tibetan script, origins of the language family, the diachronic and synchronic phonology, morphology, and syntax of various Tibetic languages. As mentioned in section 1.3, it also provides the most up-to-date classification of the Tibetic languages. Although the book takes a broad, macro-level view of these languages, it is nevertheless extremely detailed. As far as I am aware it represents the most complete description of the language family available.

Thurgood and LaPolla (2017) is a collection of works dealing with the broader Sino-Tibetan language family. Although the focus is broad, and not all chapters are

dedicated to Tibetic languages, this volume contains many descriptions and analyses of both historical and modern varieties of Tibetan.

### 1.5.2 Yushu Dialect Research

Although papers and dissertations describing related dialects of the Kyegu subgroup have been published, very little has been published to date on the variety of Tibetan spoken in Yushu City and the surrounding grassland. The majority of these sources are written in Chinese. Of the available sources, publications generally discuss what they call the “Yushu dialect”, without making reference to the linguistic diversity within Yushu Prefecture and the surrounding areas. While some sources make specific reference to the area within Yushu Prefecture on which their descriptions are based, others simply refer to “Yushu Tibetan” more generally. Available sources include Huang et al. (1994), Huang (1995), Denzhenwengmu (2015), Anseraga (2018), Sun (2019), Li and Li (2022a; 2022b), and Ou et al. (2022). The majority of these works focus on establishing phonemic inventories and phonetic analysis of the language(s).

Huang et al. (1994) is a detailed description of the phonology, phonetics, and historical evolution of the variety of Yushu Tibetan spoken in Zado County. The authors do not recognize any linguistic diversity within Yushu Prefecture, and state that according to local people, this variety “is spread to Gyegu in the east, Nangqian in the south, and Dingqing, Baqing, and Suoxian in the Tibetan Autonomous Region” (Huang et al. 1994: 1). Huang (1995) also briefly covers the phonology and tonemic inventory of “Yushu Tibetan”, and compares it to that of other Tibetic languages.

Denzhenwengmu (2015) is a short, one page article focused mainly on the consonant inventory of Yushu Tibetan. However, unlike many other articles, the author does mention that there is great dialectal variation within the Khams region, and that there are gaps in the literature and understanding of local phonetic/phonological features.

Anseraga (2018) is a detailed description of the phoneme inventory and  $f_0$  phenomena in the variety spoken in Chenduo County, Lab Village(称多县拉布乡).

Sun's (2019) dissertation also describes the variety spoken in Lab Village, and represents the most complete and detailed description of a closely related dialect. Sun's dissertation is written in Chinese<sup>9</sup> and focuses on the phonology and morpho-syntax of the Lab dialect. While this dialect is similar to and mutually intelligible with Gyegu Tibetan, the two varieties are nevertheless phonologically and syntactically distinct. As a result of the similarities between Gyegu and Lab dialects, Sun (2019) is cited frequently throughout the current study, particularly in Chapter 2.

Li and Li (2022a) is an acoustic experimental analysis of affricates in Yushu Tibetan. Li and Li (2022b) is an acoustic experimental analysis of plosives in Yushu Tibetan.

Ou et al. (2022) analyzes the nasal consonants of Yushu Tibetan using the Nasalance Visualization System.

In addition to linguistic research, folklore research is currently being conducted in the area. Thurston (2019) focuses on the Gesar epic<sup>10</sup> and the sustainability of traditional cultural practices in the area. Although this study is not explicitly focused on linguistic analysis, it does inherently involve language and touches on issues such as language attitudes, maintenance, and education. Additionally, recordings of the Gesar epic can be used for linguistic analysis and provide a glimpse into a unique register of the language.

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<sup>9</sup>No English translation of the dissertation is available, although the abstract is provided in both Chinese and English.

<sup>10</sup>This is a traditional folkstory about the life of King Gesar, who may or may not have been a historical figure. The story is extremely well known in Yushu, and the bards who tell the story are said to be divinely inspired.

## 1.6 Speaker Demographics and Vitality

The majority of Yushu City’s residents are ethnically Tibetan, although ethnic and cultural diversity in the area is increasing (Shen et al. 2019). Although Tibetan<sup>11</sup> is the primary language of the home, Mandarin Chinese is the predominant language of schools, government offices, and many places of business. This has led to a situation where many young speakers feel more comfortable speaking Chinese than Tibetan. As will be explained in more detail below, many children leave Yushu City to attend middle and high school in larger cities including Xining, Chengdu, and Beijing. In these environments, children are often placed with other students who are either not Tibetan, or who do not speak mutually intelligible varieties of Tibetan. As a result, Mandarin becomes the main language used both in the classroom and during free time with fellow students.

Although there are an estimated 1,380,000 total speakers of “Khams” Tibetan (Eberhard et al. 2025), no estimates exist for the number of speakers of Gyegu Tibetan. According to the 2020 Chinese national census, the population of Yushu City is 141,308. Although the majority of the population is Tibetan, many Tibetans have come from other areas of Yushu prefecture, Qinghai province, and Sichuan. Based on this, I estimate that there are between 100,000-120,000 speakers of Gyegu Tibetan.

The Expanded Graded Intergenerational Disruption Scale (EGIDS) is a framework used to determine a language’s level of endangerment based on Fishman’s (1991) earlier Intergenerational Disruption scale (Lewis & Simons 2010). This framework puts a large emphasis on the level of disruption to intergenerational transmission of the language. The levels and their accompanying criteria are shown in (7).

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<sup>11</sup>Gyegu Tibetan is the most common variety of Tibetan spoken in the home, but as the city grows and more families move from other Tibetan speaking areas, it is not uncommon to have other varieties of Tibetan spoken at home between family members.

(7) EGIDS Table (Lewis & Simons 2010: 8)

<b>Expanded Graded Intergenerational Disruption Scale (adapted from Fishman 1991)</b>			
<b>Level</b>	<b>Label</b>	<b>Description</b>	<b>UNESCO</b>
0	International	The language is used internationally for a broad range of functions.	Safe
1	National	The language is used in education, work, mass media, government at the nationwide level.	Safe
2	Regional	The language is used for local and regional mass media and governmental services.	Safe
3	Trade	The language is used for local and regional work by both insiders and outsiders.	Safe
4	Educational	Literacy in the language is being transmitted through a system of public education	Safe
5	Written	The language is used orally by all generations and is effectively used in written form in parts of the community.	Safe
6a	Vigorous	The language is used orally by all generations and is being learned by children as their first language.	Safe
6b	Threatened	The language is used orally by all generations but only some of the child-bearing generation are transmitting it to their children.	Vulnerable
7	Shifting	The child-bearing generation knows the language well enough to use it among themselves but none are transmitting it to their children.	Definitely Endangered
8a	Moribund	The only remaining active speakers of the language are members of the grandparent generation.	Severely Endangered
8b	Nearly Extinct	The only remaining speakers of the language are members of the grandparent generation or older who have little opportunity to use the language.	Critically Endangered
9	Dormant	The language serves as a reminder of heritage identity for an ethnic community. No one has more than symbolic proficiency.	Extinct
10	Extinct	No one retains a sense of ethnic identity associated with the language, even for symbolic purposes.	Extinct

However, the social situation of Gyegu Tibetan is complex and there are a number of complicating factors that make it difficult to place the language within a single EGIDS category. These factors include different educational paths available to young community members, different levels of fluency between generations, social and economic diversity within the community, and the social attitudes of young members of the community.

Educational background plays a large role in determining an individual's literacy

in the Tibetan script and attitude towards Gyegu Tibetan. Within Qinghai's current education system, most Tibetans have the choice between focusing their studies on either English or Tibetan in high school. The Tibetan taught in local schools is based on a slightly modified standard version of written Tibetan<sup>12</sup> pronounced with the local phonology (Gelek 2017). The Tibetan script is traditionally said to have been developed in the 7th century by Thon-mi Sambhota (Bacot 1928). It remains in use today and is largely unchanged since that time. The orthography therefore reflects the phonology of that time period (DeLancey 2003: 255). This same written system forms the basis of the standardized Tibetan used to write Gyegu Tibetan today. When reading in Gyegu Tibetan, speakers use the modern phonology to pronounce words which are written as representations of Old Tibetan phonology. This standardized version of Tibetan is useful for disseminating information across the various non-mutually intelligible Tibetic languages and reading literature in the language, but it is quite distinct from local spoken varieties. There are also many colloquial and local words which have no standardized written form within this system.

Many students feel that selecting English gives them an advantage when searching for future employment opportunities. Additionally, many parents pressure their children to study English, which is seen as a prestigious language used in international communication and commerce. Many students who choose to study English graduate with a poor comprehension of written Tibetan. As a result, many community members under the age of 35 have a limited ability to read and write their native language. Students who choose to study Tibetan are taught traditional grammar rules for standardized written Tibetan based on grammatical treatises written hundreds of years ago. These students generally have a high knowledge of this register of Tibetan, which is considered more prestigious than colloquial spoken forms.

In 2010, Yushu City was the epicenter of a devastating earthquake. Most structures in the town were destroyed, leaving over 2,000 people dead and over 12,000 injured (Xu 2023). After the earthquake, the central government provided large

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<sup>12</sup>This is a literary form of the language that is not spoken natively by any group.

amounts of aid to the local community. This resulted in an influx of Han and other nationalities. Some of these people who came to help or set up businesses after the earthquake ended up staying. This trend may also affect the long term ethnic, cultural, and linguistic makeup of the area. After the earthquake, local schools were unable to operate. As another result of the earthquake, the Chinese government sent a large number of students from Yushu City to boarding schools in places like Xining, Chengdu, and Beijing. In some cases, these groups of students were the only Tibetans in their high school. Not only did they have to use Mandarin as the primary language of communication with other students, but school regulations also required them to speak Mandarin. As a result, the primary language of communication during their formative middle and high school years was Mandarin rather than Tibetan. Through large amounts of government aid, the effects of the earthquake have now been alleviated. However, top students in the prefecture still compete for places in these boarding schools, which are considered to provide a higher level of education than local middle and high schools.

Based on these facts, Gyegu Tibetan is at level 4, Educational, on the EGIDS scale. It is true that “literacy in the language is being transmitted through a system of public education, with institutional support for education in the minority language.” Although the language is not used as the primary language of instruction, it is being used orally by all generations, is effectively used in written form in parts of the community, and does receive institutional support. Lee and Mclaughlin (2001) distinguish between educational institutions and policies that are controlled directly by the community, designated as level 4a, and institutions that are not controlled directly by the community, designated as level 4b. This distinction is relevant in this case, as provincial and national level policies affect local education. Under Lee and Mclaughlin’s (2001) subcategories, Gyegu Tibetan would be classified as level 4b.

Generally, older speakers prefer to speak Tibetan, while younger speakers prefer to code-switch between Tibetan and Mandarin, or exclusively speak Mandarin. This tendency towards Mandarin is increasing in younger speakers. Often, parents speak

Tibetan to their children, and the children respond in Mandarin. The children are able understand spoken Gyegu Tibetan, but may not feel that they are able to fully communicate exclusively in the language. When asked about their Tibetan language ability, such speakers often respond along the lines of “My Tibetan is not very good.” or “I can understand most of what is being said, but don’t understand everything.” There are also an increasing number of community members who have parents of Han<sup>13</sup> descent, or are from other Tibetan regions. These speakers tend to have a more difficult time communicating in Gyegu Tibetan, and this indicates that oral use of the language is on a downward trajectory and not stable or gaining strength. Based on these criteria, the language is either 6a or 6b on the EGIDS scale, with the declining trajectory indicating 6b. This contrasts with the educational support for the language and complicates the classification of Gyegu Tibetan at a single level on the EGIDS scale.

Social and economic diversity also play a large role in an individual’s daily use of Gyegu Tibetan. For example, some community members with high levels of education may have jobs within the local or provincial government, with companies outside of Yushu City, or with companies that require them to frequently travel within China. In these domains, Mandarin Chinese is the primary spoken language. Therefore, speakers will spend the majority of their day speaking exclusively in Mandarin, or code-switching between Mandarin and Tibetan. However, community members with lower-income jobs may work for a small local company, in a family owned store or restaurant, or as a traditional pastoralist. In these domains, Gyegu Tibetan is the primary spoken language. In such a scenario, it is possible to speak almost exclusively in Tibetan.

Social attitudes towards the Tibetan language also vary in the community, especially among younger generations. Many view Tibetan, especially the Lhasa dialect and written Tibetan, as prestigious and as a connection to their heritage and cul-

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<sup>13</sup>Han 汉 is the term used in China for the ethnically Chinese majority, making up roughly 92% of the population of mainland China (Xu et al. 2009).

ture. However, some younger speakers view Mandarin Chinese with more prestige and identify more strongly with being Chinese citizens rather than being ethnically Tibetan. This affects how speakers use and view the language, in addition to how likely they are to transmit it to their children.

Based on these facts, Gyegu Tibetan's unique social context makes it difficult to place within a single EGIDS level. While the language may be used as a subject of instruction and is institutionally supported, not all students receive instruction in the language, and control of language policies is largely outside of the community. The language is used orally by all generations, but there is an observable decline in use among younger speakers, indicating that oral use of the language is on a downward trajectory. Therefore, I place Gyegu Tibetan between level 4b and 6b on the EGIDS scale, depending on the factors mentioned above.

## **1.7 Ethnographic Notes**

In this section I present brief ethnographic notes describing important cultural features of the community in Yushu City. Important concepts related to religion and food are briefly described, particularly as they pertain to language use and this dissertation.

### **1.7.1 Religion**

Tibetan Buddhism remains an important part of daily life in Yushu City. Many people regularly chant mantras, and most families have a home altar that must be tended to daily. Additionally, Buddhism is intimately linked with the written Tibetan language and therefore exerts a large influence on local language attitudes. Written Tibetan played an important role in the historical spread of Buddhism in the area, and many early Buddhist monks and scholars were heavily involved in the translation and dissemination of religious texts from Sanskrit to Tibetan (Graf 2019:

23). Many of the traditional works concerning Tibetan grammar were written by Buddhist clergy and intended as a way to better understand scripture (Tournadre 2010). These early works are still used in modern times as a way of teaching written Tibetan grammar.

The Gyegu Monastery is located on a hillside within the city. During holidays it is an important site for religious and community activities including traditional song and dance performances. Community members often circumambulate, or walk around, the monastery. This act is known as a *skor ra* སྐོར་ར་ meaning “circumambulation” or “circuit” in Tibetan. According to Shao (2014: ii) the “two core elements of circumambulation are... a center of sacredness, and circular movement around this center.” Shao (2014: 27) states that circumambulation is the most widespread religious and cultural practice in Tibetan areas. Circumambulation is a means of accumulating merit and purifying physical and mental pollution. The number of times a given center of sacredness is circled is considered significant. 108 is an important number in Tibetan Buddhism and often evoked in Tibetan culture. For example, a Tibetan rosary contains 108 beads (Radha 2021). Circumambulating a sacred site 108 times, either all at once or during one’s lifetime, is considered auspicious. Circumambulation is also tied to the Buddhist idea of pilgrimage and can be accomplished by either walking or prostration. When circumambulating via prostration, worshipers will perform a prostration, take a few steps forward, and perform another prostration. They will continue like this until the site is circumambulated. Sometimes, entire pilgrimages are undertaken via prostration. These pilgrimages can cover large distances, in some cases over 2,000km.

In addition to the Gyegu Monastery, the Gyanak Mani Stone pile is located in the Senzi district. This is the largest Mani Stone pile in the world (Peng et al. 2021). Mani stones are a “form of Tibetan folk art and a physical means of visual communication in Tibetan Buddhism and culture” (Sun et al. 2019). Each stone is inscribed with the mantra *Om mani padme hum* ཨོཾ་མ་ཎི་པདྨེ་ཧུམྱ། literally meaning “The jewel in the heart of the lotus.” This mantra is associated with the Buddha of Compassion. Sim-

ilar stones can be found throughout Yushu prefecture. The mantra is often carved on mountain walls, large boulders, loose rocks, and on rocks lying within rivers.

The Thrangu and Domkar Monasteries are also in close proximity to the city. The Princess Wencheng Temple is located near Yushu City and serves as an important religious and cultural site.

## 1.7.2 Food

Many example sentences in this dissertation make reference to traditional Tibetan foods. Due to the high altitude of Tibetan areas, agriculture is difficult. Therefore, Tibetans historically relied on varieties of hull-less barley (Tashi et al. 2013), and yak herding (Rhode et al. 2007). Tibetan areas were also connected to Han areas and India through extensive trade networks where tea was exchanged for Tibetan horses (Yang 2004).

After harvesting, barley is roasted and ground into a flour known as *tsampa* ལྷ་མ་པ་. Tsampa plays an important role in the traditional Tibetan diet, and is still prevalent in Tibetan households where it is a particularly popular breakfast item. Tsampa is typically combined with tea, butter, and cheese, then mixed together into a dough by hand. The dough is then consumed without being baked.

All parts of the yak are traditionally used in some way, whether for food, fuel, clothing, or building material. Milk is drunk on its own, mixed with tea, and used to make butter, cheese, and yogurt. Yogurt or butter are also mixed with *droma* ལྷོ་མ་, the root of *Potentilla anserina*. Droma mixed with butter is often eaten as the first meal of the new year. Yak meat is cooked, dried to make jerky, used to make sausage, and is an ingredient in dumplings known as *momo* མོ་མོ་. Yak dung is used to create fires for cooking, boiling tea, heating houses/tents, and keeping away insects. Yak hides and hair are used to make clothing, carpets, and tents.

Milk tea and butter tea also traditionally formed an important part of the Tibetan

diet, and remain important today (Wang et al. 2010). A kettle is often brewed early in the morning, with fresh kettles being brewed throughout the day. Brick tea is most commonly used, with families sometimes making their own specific alterations.

Nowadays, most Tibetans eat a mixture of traditional foods and Chinese foods. Since 1959, the area has become increasingly connected with other parts of China, and it is easier than ever to bring in foods grown in other regions. Fresh vegetables and fruits that are difficult or impossible to grow naturally in the region are now readily available in every supermarket.

## 1.8 File Naming Convention and Example Labeling

All examples presented in this dissertation are taken from the previously mentioned corpus. When possible, the recording in which the example appears is cited. File names adhere to the format in (8).

(8) Language abbreviation - Session number - Type - Speaker initials

As all examples from the corpus in this dissertation are of Gyegu Tibetan, the language abbreviation is always Gyg. All recording sessions are labeled in chronological order; for example, the 56th session receives the number 056. Recording sessions are also separated by “type”. The “type” categories are: dialogue (D), phonological elicitation (PH), morphology (Morph), narrative (Nar), syntax (Syn), and word lists (WL). Finally, the speakers initials are listed. An example file name is seen in (9).

(9) Gyg-056-Syn-D

A full list of speaker names and the corresponding initials can be found in appendix

C.

When an example sentence or spectrogram is provided, the source recording file name will appear to the right of the example label in parentheses as seen in (10). If an example is not accompanied by a file name, then it either comes from recordings made during the Spring 2021 field methods course, personal correspondence with consultants which was not recorded, or notebook entries which are not associated with a recording.

- (10) Past tense /s<sup>fi</sup>u/ ‘ate’ with perfective aspect marker /t<sup>hi</sup>/ VIS.PFV (Gyg-002-WL-M)

moʔ      s<sup>fi</sup>ama s<sup>fi</sup>u      t<sup>hi</sup>  
3SG.FEM food    ate.PST VIS.PFV  
‘She ate food.’ (And I saw it.)

## 1.9 Structure of the Dissertation

Chapter 2 describes the basic phonetics and phonology of Gyegu Tibetan. I provide a phoneme inventory and a list of example words containing these phonemes. Important contrasts within the phoneme inventory are then discussed. Then, I discuss the language’s syllable structure and describe how this structure fits into the broader typology of Tibetic languages. Some of the major topics in this chapter are the tense versus breathy distinction in stops, affricates, and fricatives, and their relationship to  $f_0$ . The Tibetan language family contains great diversity in terms of the phonological role of tone. While some languages are completely atonal, others contain more complex toneme inventories. I describe the observed  $f_0$  patterns in Gyegu Tibetan and once again place the language within the broader typology of Tibetic languages.

Chapter 3 describes the lexical and phrasal categories of Gyegu Tibetan. First, the chapter outlines nominal morphology. Lexical nouns, proper nouns, and processes

related to nominalization and case marking are discussed. Next, the morphology of pronouns, adjectives, adverbs, negation, and possession are described in detail. Finally, verbal morphology is laid out in detail. Transitivity, tense, and aspect all play an important role in the language's verbal morphology, and these topics receive special attention. The morphology of sentence final copulas and auxiliaries are also briefly covered, although these receive more detailed attention in chapter 4.

Chapter 4 introduces the basics of Gyegu syntax. Basic word order and the structure of intransitive, transitive, ditransitive, and relative clauses are all discussed in detail. Next, coordination and multi-clause constructions are illustrated. Then, tense, aspect, and modality are described before moving on to evidentiality and egophoricity are outlined. Finally, I describe Wh-questions, focus, and topic constructions. Both Wh- phrases and focused elements remain in-situ, and the language exhibits no focus specific position. This indicates that focus prominence is achieved using prosody. Unlike Wh-phrases and focused elements, arguments are displaced from their canonical sentence position in contrastive topic constructions.

The appendices contain narrative texts. The texts are transcribed, glossed, and translated. Although many of these stories are traditionally Chinese, community members chose to record these because they convey important lessons that are relevant to modern Tibetan morality.

## Chapter 2

# Phonetics & Phonology

This chapter describes the phonology of Gyegu Tibetan and the phonetics of certain phonemes and acoustic features. In 2.1, previous work on the phonetics and phonology of “Yushu Tibetan” is discussed. In 2.2, I provide a description of the consonant inventory of Gyegu Tibetan. This inventory is followed by descriptions of the phonetics and phonology of each manner and place of articulation, including lists of example words containing these consonants and waveforms and spectrograms of each phoneme. In 2.3, the vowel inventory of the Gyegu Tibetan is presented, along with a list of example words containing the phonemic vowels. The categories of monophthongs, diphthongs, and nasal vowels are laid out. In 2.4, syllable structure is described. The unique role of prenasalized and preglottalized phonemes in the syllable structure is illustrated. In 2.5, I discuss  $f_0$  phenomena in the language. In 2.6, I discuss the transcription system that is used in the remainder of the dissertation.

### 2.1 Research on Related Varieties

As mentioned in 1.5.2, Huang et al. (1994) is the first source describing a closely related dialect, the variety of Tibetan spoken in Zaduo County, Yushu Prefecture.

This variety is referred to as Dzatö by Tournadre and Suzuki (2023: 488). They provide a phonemic and tonemic inventory for the language, and discuss the historical evolution of the modern phonemic inventory from Old Tibetan. They are the first to propose a three way laryngeal contrast in the voiceless stops, affricates, fricatives, and nasals, as well as a contrast between preglottalized and plain approximants. Their description has been influential on later work on related languages, with Sun (2019) (below) adopting a similar phonemic inventory. Huang et al. (1994) observed nine distinct tonal patterns in the language, which they state can be reduced to either 6 or 4 tonemic categories. Huang (1995) repeats the observation of nine distinct tonal patterns, but proposes that this can be simplified to a high versus low register contrast.

Sun (2019), a dissertation, contains a thorough description of the Tibetan variety spoken in Lab Village, including a phonemic inventory,  $f_0$  phenomena, syllable structure, and sound changes from Old Tibetan to the modern Lab variety. This variety falls under Tournadre and Suzuki's (2023: 483) Thrindu-Kham branch of Kyegu. According to Sun (2019), voiceless unaspirated consonants, voiceless aspirated consonants, and preglottalized sonorants have a predictably high  $f_0$ , while voiced consonants, breathy consonants, and voiced prenasalized obstruents have predictably low  $f_0$ . Sun (2019) proposes that the only syllable coda in the Lab variety is the glottal stop. In open syllables,  $f_0$  tends to fall. In closed high tone syllables, there is a high and flat  $f_0$ . In closed low tone syllables, there is a slight rise in the  $f_0$ .

## 2.2 Consonants

This section describes the consonant inventory of Gyegu Tibetan. First, the proposed phoneme inventory of related varieties of Yushu Tibetan are presented. Next, a consonant chart for Gyegu Tibetan is presented. In the remainder of this section, I provide instrumental phonetic evidence for these transcriptions, beginning

with the sonorants. Obstruents present some complications and are discussed after the sonorants.

### **2.2.1 Previous Analyses**

Huang et al. (1994) breaks down their phoneme inventory for the Zaduo variety of Yushu Tibetan into “simple consonants” and “complex consonants”. The “simple consonant” inventory can be seen in (1).

(1) Simple consonant inventory Huang et al. (1994)

	Bilabial		Labiodental	Alveolar		Retroflex		Palatal		Velar		Glottal	
	p	p <sup>h</sup>		b	t	t <sup>h</sup>	d			k	k <sup>h</sup>	g	ʔ
Stop													
Breathly Stop	p <sup>h</sup>				t <sup>h</sup>								
Nasal	m		m	n̥	n			ɲ					
Trill					r								
Fricative			f v	s	s <sup>h</sup>	z	s	ç <sup>h</sup>	z				h fi
Breathly fricative				s <sup>h</sup>				ç <sup>h</sup>					
Lateral fricative				ɬ									
Affricate				ts	ts <sup>h</sup>	dz	tɕ	tɕ <sup>h</sup>	ɕç	ɕç <sup>h</sup>	ʃj		
Breathly affricate				ts <sup>h</sup>			tɕ <sup>h</sup>		ɕç <sup>h</sup>				
Approximant			w							j			
Lateral approximant						l							

The “complex consonant” inventory proposed by Huang et al. (1994) is seen in (2).

(2) Complex consonant inventory Huang et al. (1994)

ʔ-	ʔm	ʔn	ʔɲ	ʔŋ	ʔw	ʔl	ʔj	
p-	pts	ps <sup>h</sup>	pcç	pç				
b-	bz	bd	bl	bdz̥	bjj	bz	bj	bg
m̥-	m̥p	m̥t	m̥tʂ	m̥cç	m̥k			
m-	mb	mdz	md	mdz̥	mɲ	mg		
n̥-	n̥ts	n̥t	n̥tʂ	n̥cç				
n-	ndz	nd	ndz̥	nɲj				
ŋ̥-	ŋ̥k							
ŋ-	ŋg							

Sun’s (2019) proposed consonant inventory for the Lab variety is shown in (3).

(3) Sun's (2019: 19) phoneme inventory of Lab Tibetan

	Stops			Affricates			Fricatives		Nasals		Laterals	Approximants	
	p	p <sup>h</sup>	b	ḻ	ḻ <sup>h</sup>	dz	tš	s	s <sup>h</sup>	z			š
Bilabial								(ɸ)	(β)				w
Labiodental								(f)	(v)				
Alveolar	t	t <sup>h</sup>	d	ṭ	ṭ <sup>h</sup>	dz	tš	s	s <sup>h</sup>	z	š	n	l
Alveo-palatal					tɕ	dz	tɕ	ɕ	ɕ <sup>h</sup>		ç	ɲ	
Retroflex					tʂ	dz <sub>ɻ</sub>	tʂ	ʂ		z <sub>ɻ</sub>			
Velar	k	k <sup>h</sup>	g	k̠								ŋ	ŋ
Uvular									(ʁ)				
Glottal	ʔ							h		f			

Sun (2019: 19) also provides a list of ‘complex consonant initials’, seen in (4).

(4) Sun’s (2019: 19) complex consonant initial inventory of Lab Tibetan

Preglottalized sonorants	<sup>ʔ</sup> m	<sup>ʔ</sup> n	<sup>ʔ</sup> ɲ	<sup>ʔ</sup> ŋ	<sup>ʔ</sup> l	<sup>ʔ</sup> j	<sup>ʔ</sup> z̥
Prenasalized obstruents	mb	ndz	nd	ndz̥	ndz̥	ŋg	
Voiceless prenasalized obstruents	(m̥p <sup>h</sup> )	(n̥t <sup>h</sup> )	(n̥ts <sup>h</sup> )	(n̥tɕ <sup>h</sup> )	(n̥tʂ <sup>h</sup> )	(ŋ̥k <sup>h</sup> )	

I return to these consonant inventories in section 2.2.2 and compare them to my proposed consonant inventory for Gyegu Tibetan.

## 2.2.2 Gyegu Tibetan Consonant Inventory

Gyegu Tibetan has a consonant inventory consisting of 55 phonemes. This is classified by Maddieson (2013) as a large inventory, which is any language with 34 or more consonant phonemes. Gyegu Tibetan’s consonant inventory is shown below in Table (5).

(5) Gyegu Tibetan Consonant Inventory

	Bilabial		Alveolar		Retroflex		Alveo-palatal		Palatal		Velar		Glottal	
	p	p <sup>h</sup>	t	t <sup>h</sup>	d						k	k <sup>h</sup>		g
Stops														
Breathy stops	p <sup>ʰ</sup>		t <sup>ʰ</sup>								k <sup>ʰ</sup>			
Prenasalized stops					nd								ŋg	
Nasals					n								ŋ	
Preglottalized nasals		ʔm			ʔn						ʔp		ʔŋ	
Trill					r									
Fricatives			s	s <sup>h</sup>	z					ç	ç <sup>h</sup>	j		h
Breathy fricatives														
Breathy fricatives			s <sup>ʰ</sup>											
Affricates			ts	ts <sup>h</sup>	dz	ts	ts <sup>h</sup>	dz	ts <sup>h</sup>	dz	ts <sup>h</sup>	dz		
Breathy affricates			ts <sup>ʰ</sup>			ts <sup>ʰ</sup>			ts <sup>ʰ</sup>		ts <sup>ʰ</sup>			
Prenasalized affricates					ndz			ndz					ndz	
Approximants				l	l							j	w	
Preglottalized approximants					ʔl							ʔj		

I have labeled a subset of the voiceless obstruents as breathy. Voiceless obstruents themselves cannot be breathy, as breathy voice inherently involves voicing and is distinguished from modal voicing by “less vocal fold approximation” (Garellek 2019: 6). In Gyegu Tibetan, the breathiness of obstruents such as /s<sup>h</sup>/, /ts<sup>h</sup>/, and /p<sup>h</sup>/ is realized on the following vowel. Therefore, my notation indicates s<sup>h</sup> → [s̥̤]. Similarly, voiceless unaspirated obstruents which are unmarked are realized with creakier phonation on the following vowel, meaning s → [s̥̤]. There is some variation in the level of breathiness and creakiness on the following vowel. The distinction in Gyegu Tibetan can also be classified as fortis-lenis, which has been used to describe languages including Jingpho, Haoni, Wa, and Yi (Gordon & Ladefoged 2001: 398). Fortis (tense) and lenis (lax) are defined by Kuang and Keating (2014: 2785) as occupying an intermediate space between between creaky and breathy voice, with tense being closer to creaky voice and lax closer to breathy voice. In my notation system, the unmarked obstruents are tense and the breathy obstruents are lax. In Gyegu Tibetan, lax consonants are always breathier than their tense counterparts, although they are not fully breathy. Likewise, tense consonants are always creakier than their lax counterparts. This is similar to the tense-lax distinction in Korean. In Korean, tense and lax stops are differentiated by a variety of measures including the  $f_0$  of the following vowel, VOT, and breathiness (Kim & Duanmu 2004). Korean lax stops have a lower  $f_0$  on the following vowel, a longer VOT, and larger spectral tilt as measured by the first harmonic minus the second harmonic (H1-H2) than their tense counterparts. As explained in 2.2.6 through 2.2.8, breathy obstruents in Gyegu Tibetan also have a lower  $f_0$  on the following vowel and a larger H1-H2 than their tense counterparts. The prominence of H1 and greater H1-H2 is indicative of breathy voice (Hillenbrand & Houde 1996). Lax obstruents<sup>1</sup> can therefore be distinguished from their tense counterparts using the H1-H2 distinction. This distinction is discussed further in 2.2.6.

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<sup>1</sup>The acoustic features indicate that lax obstruents are articulated with fairly abducted vocal folds with less longitudinal tension on the onset of the following vowel, typical of breathy voice (Gordon & Ladefoged 2001).

The phoneme inventory of Gyegu Tibetan differs from those proposed for “Yushu Tibetan” by Huang et al. (1994) and Sun (2019) in several ways. First, while both Huang et al. and Sun choose to list the complex consonants in separate inventories, I have included them with the simplex consonants in my phoneme inventory chart and analyze them as unary segments, as discussed in 2.2.9 and 2.4. Unlike Huang et al. (1994), I did not find any palatal affricates in Gyegu Tibetan. Although Gyegu Tibetan does contain preglottalized nasals, prenasalized stops, and prenasalized affricates, the complex consonants beginning with [p], [b], and voiceless nasals proposed by Huang et al. are not present in the Gyegu Tibetan corpus.

Sun’s (2019) phonemic inventory is quite similar to my proposed inventory for Gyegu Tibetan and reflects the similarities between the Lab variety and Gyegu Tibetan discussed earlier in 1.5.2. However, there are some small phonological differences. Sun lists /ϕ/ and /β/ as phonemes, and notes that they have a limited distribution. However, no examples of bilabial fricatives are present in the Gyegu Tibetan corpus. Sun also lists a series of voiceless prenasalized obstruents which are not observed in Gyegu Tibetan. Just like Huang et al. (1994), Sun (2019) also proposes a series of breathy voiceless stops, fricatives, and affricates.

### 2.2.3 Nasals

Nasals in Gyegu Tibetan display a contrast between preglottalized and plain varieties. This contrast is accompanied by a difference in  $f_0$  on the following vowel, where the preglottalized nasals have a higher  $f_0$  than their non-preglottalized counterparts.

#### 2.2.3.1 Bilabial Nasals

There are two bilabial nasals in Gyegu Tibetan, /m/ and /<sup>h</sup>m/ in addition to a voiceless [m̥]<sup>2</sup>, the phonemic nature of which is undetermined. A word list with

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<sup>2</sup>There is significant interspeaker and intraspeaker variation in the pronunciation of voiceless nasals, which is discussed in greater detail in 2.2.3.4.

examples containing these phonemes is seen in (6). Although word final bilabial nasal stops occur as the result of coarticulation with a following word, I analyze all word final nasals as underlyingly /n/, as described in 2.3.3.

(6) Table of bilabial nasal phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
m	muo ‘face’ mi ‘lower part’	ama ‘mother’ ŋ̄amo ‘morning’
ʔm	ʔmi ‘wound’	t <sup>h</sup> oʔmin ‘height’
m̥	m̥i ‘medicine’	

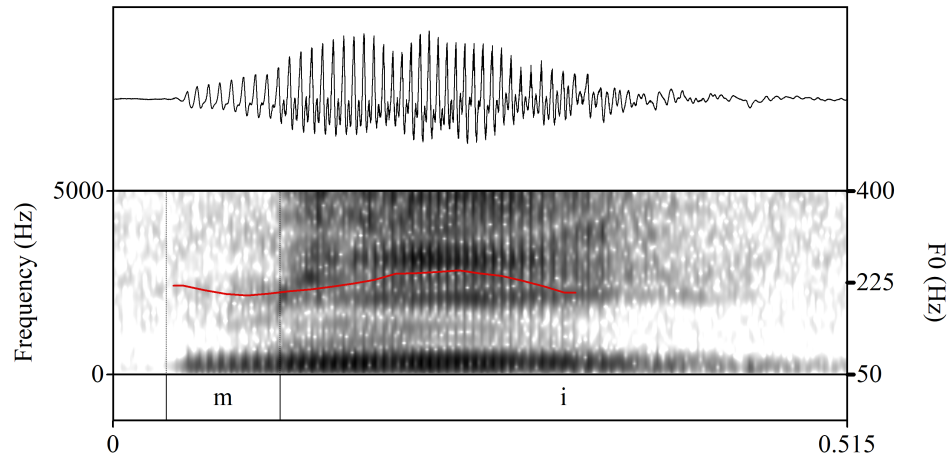
As previously described in 1.6, the Tibetan script, which Bacot (1928) asserts was developed in the 7th century, remains in use today and is largely unchanged since that time. When reading in Gyegu Tibetan, speakers use the modern phonology to pronounce words which are written as representations of Old Tibetan phonology. Therefore, it is relatively straightforward to trace the historical development of modern phonemes to their Old Tibetan counterparts. Additionally, Sun (2019) has traced the development of the modern Lab phonology from Old Tibetan. As a result of the close similarities between the Lab variety and Gyegu Tibetan, the sound changes from Old Tibetan to Gyegu Tibetan presented in this dissertation are based primarily on Sun’s (2019) work.

The Gyegu Tibetan phoneme /m/ is represented by  $\mathfrak{m}$  <ma> in the orthography, and is unchanged from Old Tibetan. However, /ʔm/ developed from <Cm> consonant clusters in Old Tibetan such as  $\mathfrak{m}$  <rma>. These changes are also reflected in the Lab variety (Sun 2019: 48).

A waveform and spectrogram showing a typical /m/ is seen in (7). Note the relatively low  $f_0$  of the /m/, where the  $f_0$  at vowel onset rises before falling again.

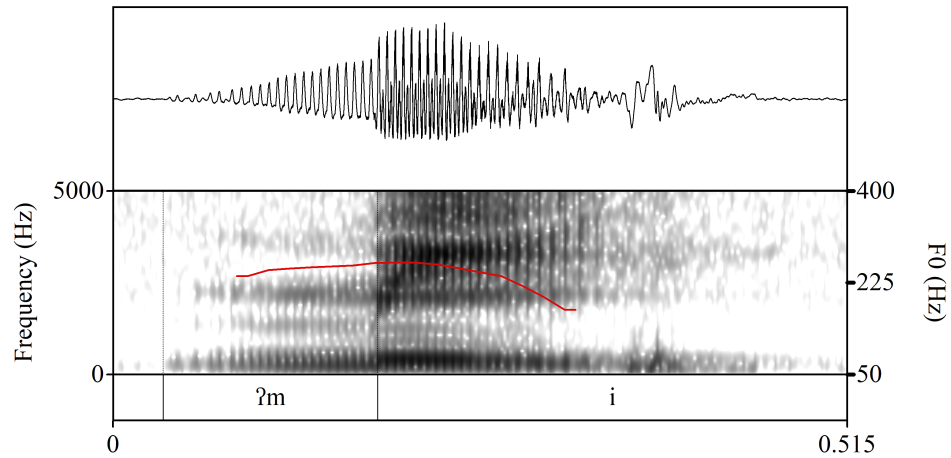
Also note the modal voice throughout the nasal consonant.

- (7) /mi/  $\text{मि}$  'lower part' waveform, spectrogram, and pitch track (male speaker)  
(Gyg-043-PH-WU)



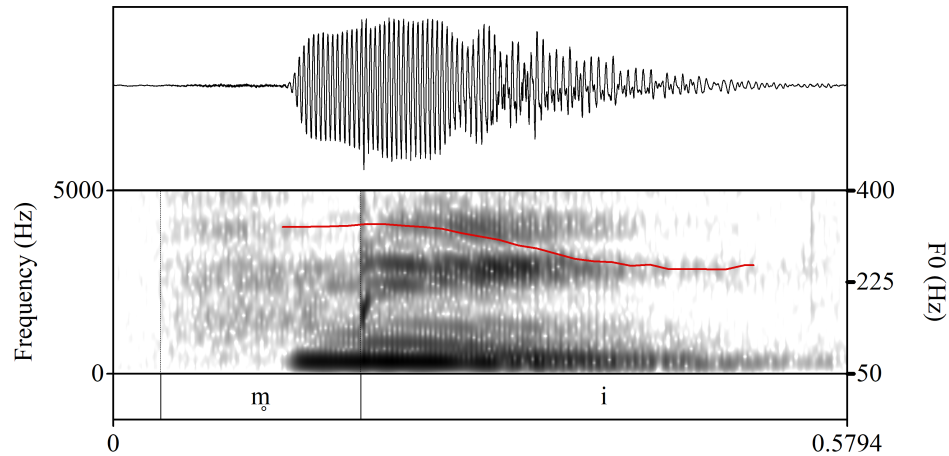
A waveform and spectrogram showing a typical  $/^{\text{r}}\text{m}/$  is seen in (8). Note the relatively high  $f_0$  of the  $/^{\text{r}}\text{m}/$ , which remains at the same level at vowel onset before falling. Also note the irregular glottal pulses visible in the spectrogram at the beginning of  $/^{\text{r}}\text{m}/$  in (8).

- (8) /ʔmi/ 𑄃𑄆𑄆 ‘wound’ waveform, spectrogram, and pitch track (male speaker)  
(Gyg-043-PH-WU)



A waveform and spectrogram showing a voiceless bilabial nasal is shown in (9). It is not phonemic for all speakers. The nature of these voiceless nasals is discussed in more detail in 2.2.3.4. In (9), note the period of voicelessness at the beginning of the nasal, followed by a period of voicing before the vowel onset. The  $f_0$  pattern is similar to that observed on /ʔm/.

- (9) [ṃi] ‘medicine’ waveform, spectrogram, and pitch track (female speaker)  
(Gyg-070-WL-Ts)



These waveforms and spectrograms demonstrate that the primary phonetic differences between /m/, /<sup>2</sup>m/, and [ṃ] are preglottalization, voicing, and  $f_0$ , with glottalization associated with  $f_0$  raising.

### 2.2.3.2 Alveolar Nasals

There are two alveolar nasals in Gyegu Tibetan, /n/ and /<sup>2</sup>n/. Unlike /m/ and /ŋ/, there are no instances of /ṅ/ found in the corpus. A word list with examples containing these phonemes is seen in (10). Only /n/ occurs word finally.

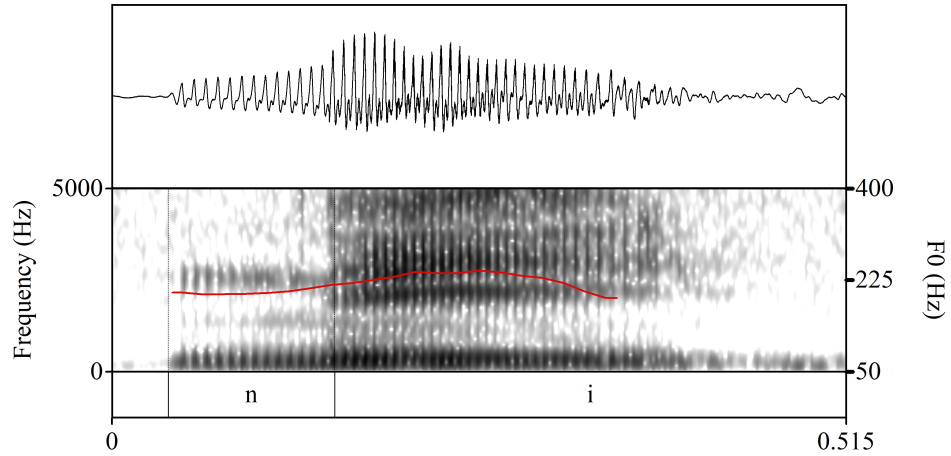
(10) Table of alveolar nasal phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial	Word Final
n	nɪlɪ ‘chin’ ni ‘barley’	ani ‘aunt’	dm ‘seven’
<sup>ʔ</sup> n	<sup>ʔ</sup> ni ‘dwell/reside’	k <sup>h</sup> on <sup>ʔ</sup> ni ‘status’	

The Gyegu Tibetan phoneme /n/ is represented by  $\mathfrak{n}$  <na> in the orthography, and is unchanged from Old Tibetan. However, /<sup>ʔ</sup>n/ developed from <Cn> consonant clusters in Old Tibetan such as  $\mathfrak{r}$  <rna>. These changes are also reflected in the Lab variety (Sun 2019: 48).

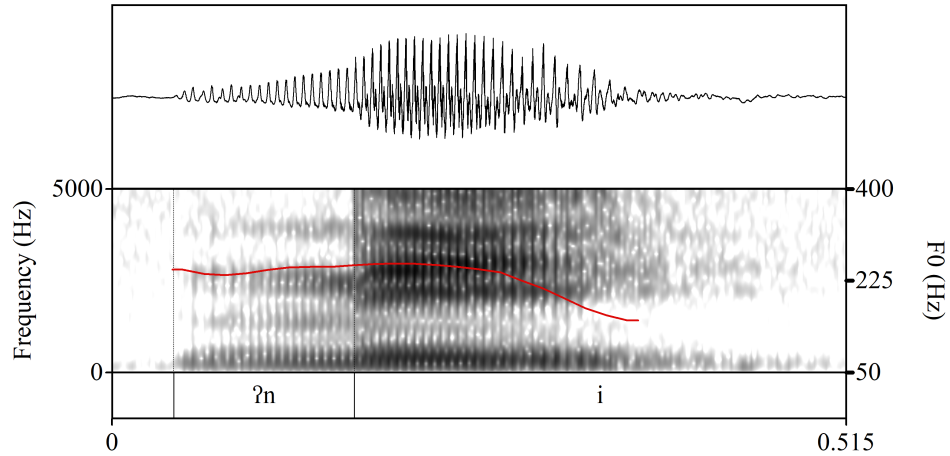
A spectrogram showing a typical /n/ is seen in (11). As with /m/, note that  $f_0$  is relatively low on the nasal itself, then rising and falling during the vowel. Also note the modal voicing throughout /n/.

- (11) /ni/  $\bar{n}$  'barley' waveform, spectrogram, and pitch track (male speaker) (Gyg-043-PH-WU)



A waveform and spectrogram showing a typical /<sup>2</sup>n/ is seen in (12). The  $f_0$  of /<sup>2</sup>ni/ is relatively high and steady at the vowel onset before falling. Additionally, irregular glottal pulses are observed at the beginning of /<sup>2</sup>n/.

- (12) /<sup>ʔ</sup>ni/ གནས་ ‘dwell/reside’ waveform, spectrogram, and pitch track (male speaker) (Gyg-043-PH-WU)



As with /m/ and /<sup>ʔ</sup>m/, the primary distinctions between /n/ and /<sup>ʔ</sup>n/ are pre-glottalization and  $f_0$  on the following vowel.

### 2.2.3.3 Palatal Nasals

A word list with examples containing palatal nasals is seen in (13). As with bilabial and velar nasals, there are no examples of word final palatal nasals.

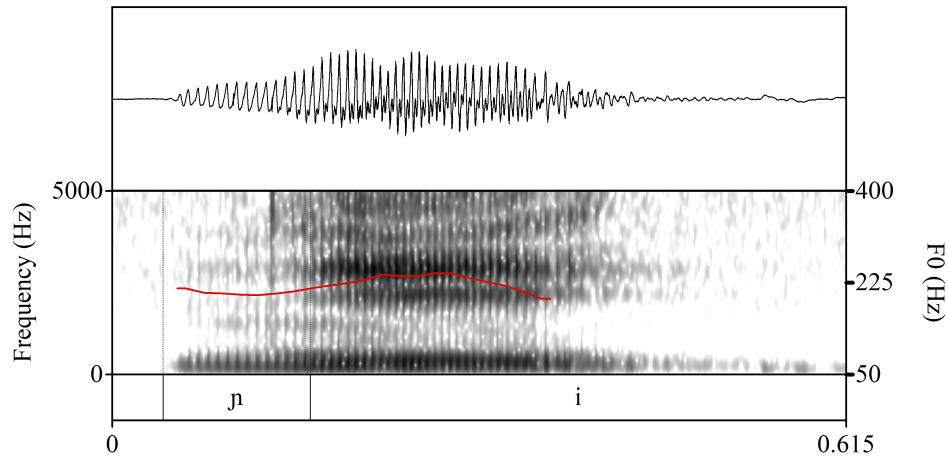
- (13) Table of palatal nasal phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
ɲ	ɲɪ ‘two’	jeɲĩ ‘day after tomorrow’
<sup>ʔ</sup> ɲ	<sup>ʔ</sup> ɲə ‘person’	de <sup>ʔ</sup> ɲiʔ ‘key’

The Gyegu Tibetan phoneme /ɲ/ is represented by  $\mathfrak{N}$  <ɲa> in the orthography, and is unchanged from Old Tibetan. However, /<sup>ʔ</sup>ɲ/ developed from <Cɲ> consonant clusters in Old Tibetan such as  $\mathfrak{N}$  <rɲa>. These changes are also reflected in the Lab variety (Sun 2019: 48).

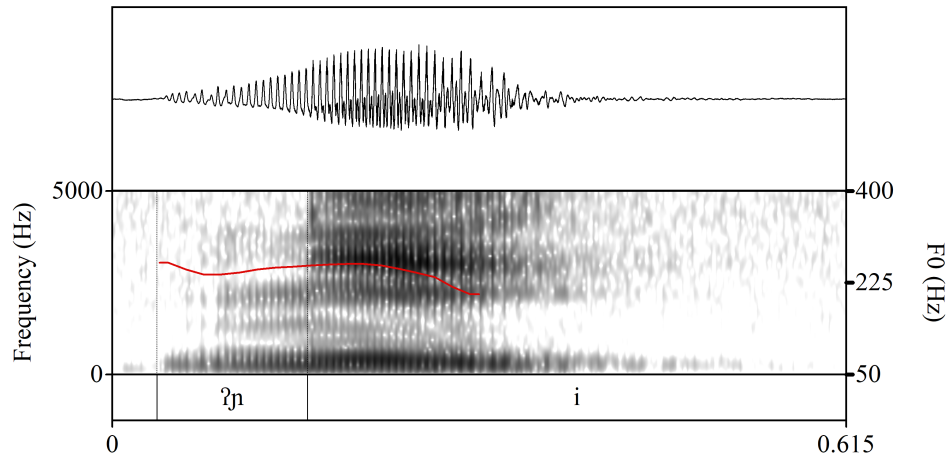
A waveform and spectrogram showing a typical /ɲ/ is seen in (14). Note that the  $f_0$  of /ɲ/ is relatively low at vowel onset before rising and then falling. Also note the modal voicing throughout /ɲ/.

- (14) /ɲi/ ‘sleep’ waveform, spectrogram, and pitch track (male speaker) (Gyg-043-PH-WU)



A waveform and spectrogram showing a typical /<sup>ʔ</sup>ɲ/ is seen in (15). The  $f_0$  of /<sup>ʔ</sup>ɲi/ is relatively high and level at vowel onset before falling. Additionally, irregular glottal pulses can be observed at the beginning of /<sup>ʔ</sup>ɲ/.

- (15) /ʔn/ ་ལྟོས་ ‘contempt/disrespect’ waveform, spectrogram, and pitch track (male speaker) (Gyg-043-PH-WU)



Like the other pairs of preglottalized and plain nasals, the primary distinctions between /n/ and /ʔn/ are preglottalization and  $f_0$  on the following vowel.

#### 2.2.3.4 Velar Nasals

A word list with examples containing velar nasals is seen in (16). There are no examples of phonemic word final velar nasals.

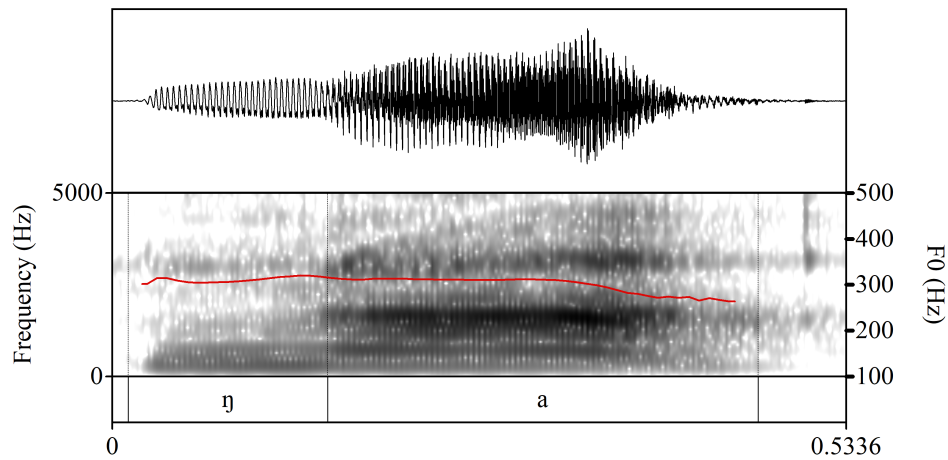
- (16) Table of nasal phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
ŋ	ŋa ‘I’ (abs.)	iŋo ‘on the right’
ʔŋ	ʔŋa ‘drum’	kaʔŋa ‘exhausting’
ɲ	ɲa ‘early’	

The Gyegu Tibetan phoneme /ŋ/ is represented by  $\varepsilon$  <ŋa> in the orthography, and is unchanged from Old Tibetan. However, /<sup>ʔ</sup>ŋ/ developed from <Cŋ> consonant clusters in Old Tibetan such as  $\varepsilon$  <rŋa>. These changes are also reflected in the Lab variety (Sun 2019: 48).

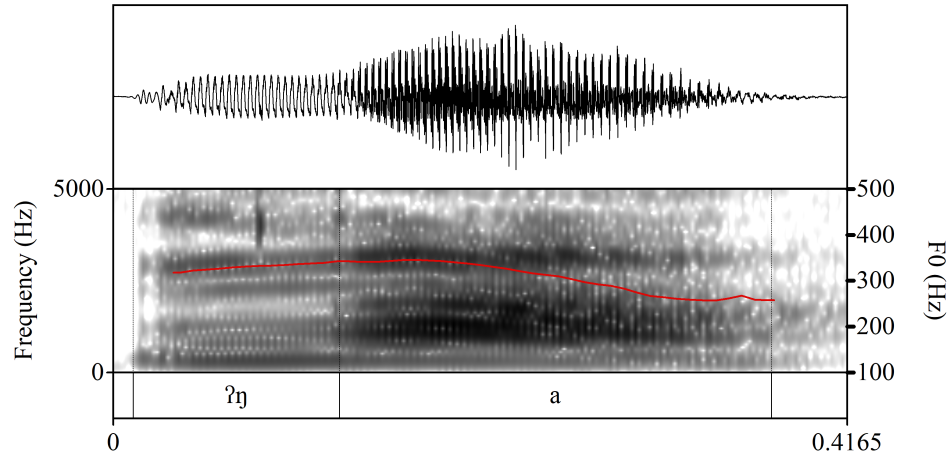
Image (17) shows a waveform and spectrogram for /ŋ/. Note the modal voicing throughout /ŋ/, relatively low and flat  $f_0$  throughout the consonant, falling at the end of the vowel.

(17) /ŋa/ ‘I’ waveform, spectrogram, and pitch track (female speaker) (Tsiren)



(18) shows a waveform and spectrogram for /<sup>ʔ</sup>ŋ/. Note the irregular glottal pulses at the beginning of the consonant. The  $f_0$  of the nasal is higher than its non-preglottalized counterpart in (17), and there is a high falling  $f_0$  on the following vowel.

(18) /ʔŋa/ ‘five’ waveform, spectrogram, and pitch track (female speaker) (Tsiren)

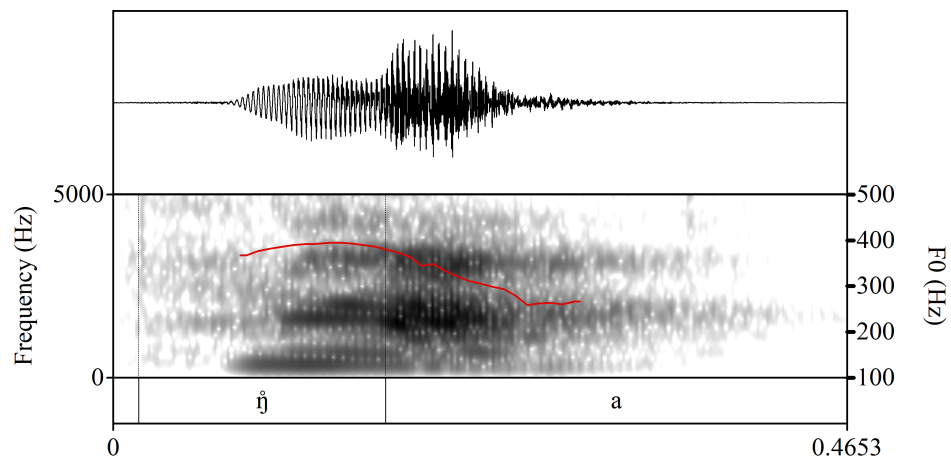


As the pairs of waveforms and spectrograms in this section indicate, the primary differences between preglottalized and non-preglottalized nasal consonants are the irregular glottal pulses at the beginning of the consonant and the  $f_0$  height on the following vowel.

While some speakers consistently pronounce a voiceless nasal in words like [m̥i] ‘medicine’, [ŋ̥a] ‘early’, and [ŋ̥amo] ‘morning’, other speakers occasionally pronounce these words with their voiced counterparts, and some speakers exclusively use voiced nasals in these words. Example waveforms and spectrograms of different speakers pronouncing the words /ŋ̥a/ ‘early’ and /ŋ̥amo/ ‘morning’ are seen in (19), (20), and (21).

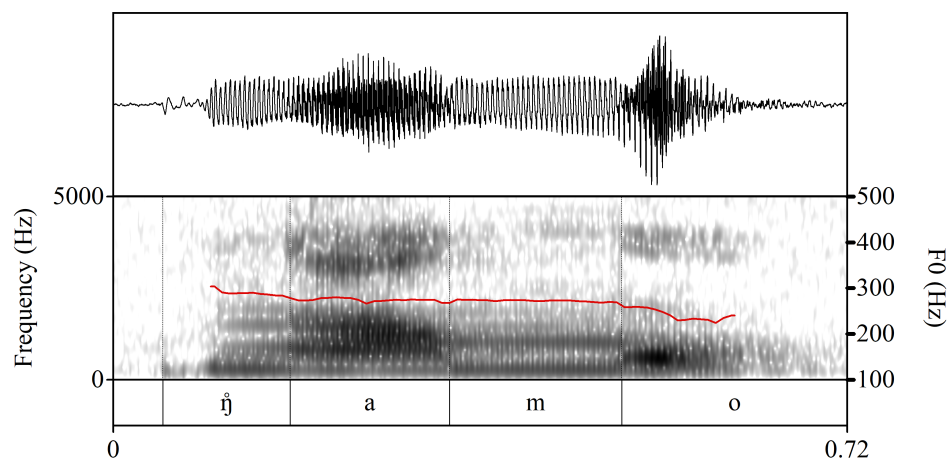
In (19), the nasal starts out voiceless and becomes voiced.

(19) [ɲ̥a] ‘early’ waveform, spectrogram, and pitch track (female speaker) (Tsiren)



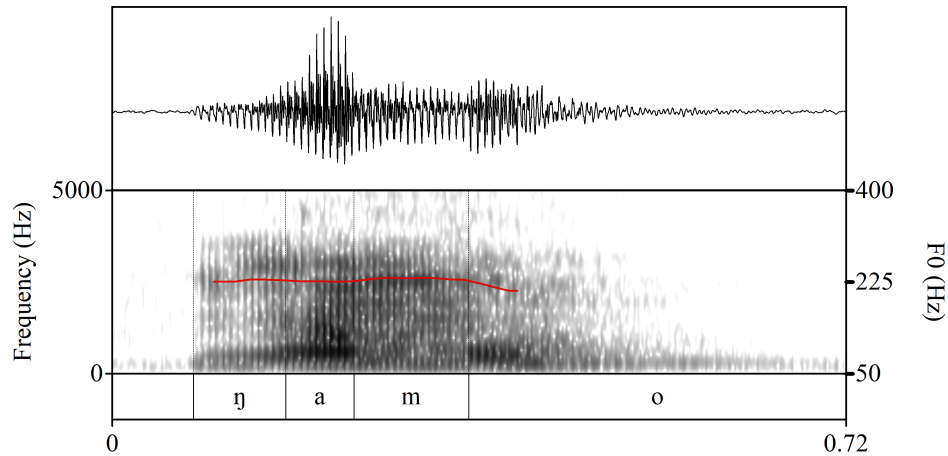
Just as in (19), the nasal in (20) starts out voiceless and becomes voiced.

- (20) [ɨ̃amo] ‘morning’ waveform, spectrogram, and pitch track (female speaker)  
(Gyg-001-WL-M)



The spectrogram in (21) is from a speaker who has no voiceless nasal phonemes.

- (21) [ɲamo] ‘morning’ waveform, spectrogram, and pitch track (male speaker)  
(Gyg-028-WL-WU)



Sun (2019: 19) identifies voiceless nasals as phonemic in the Lab variety, but their phonemic status in Gyegu Tibetan remains uncertain.

## 2.2.4 Approximants

Like nasals, the lateral and palatal approximants display a contrast between pre-glottalized and plain varieties. However, there is no preglottalized counterpart to /w/.

### 2.2.4.1 Lateral Approximants

The lateral approximants found in Gyegu Tibetan are /l̥/, /l/, and /<sup>2</sup>l/. A table of example words containing lateral approximants is seen in (22). Although voiced lateral approximants appear word finally, voiceless and preglottalized approximants

do not occur in word finally<sup>3</sup>.

(22) Table of lateral approximant phoneme examples in Gyegu Tibetan

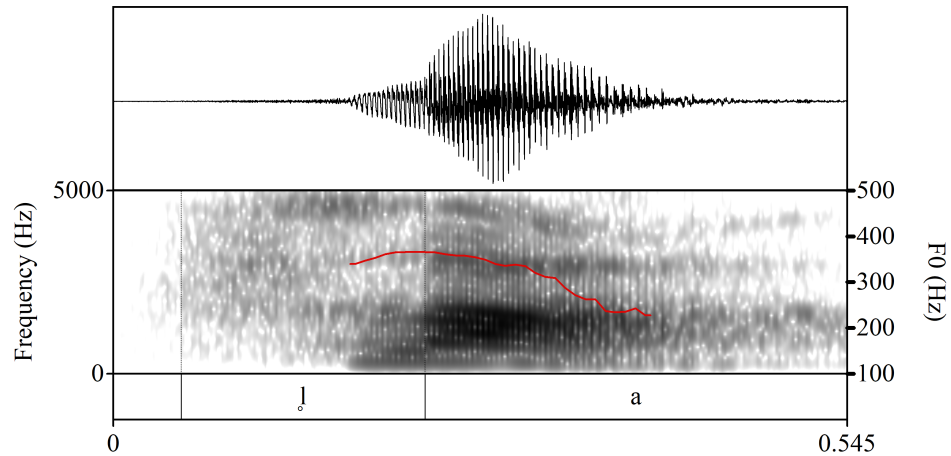
Phoneme:	Word Initial	Word Medial	Word Final
l̥	la ‘Buddha’ las <sup>h</sup> a ‘Lhasa’ lo ‘learn’ lodza ‘school’		
l	loʔ ‘sheep’ li ‘work’	dɪlt ‘wishes’	k <sup>h</sup> il ‘hip’
ʔl	ʔli ‘vast’		

The Gyegu Tibetan phoneme /l̥/ developed from the Old Tibetan ལྷ <sla> and ལྷ <lha>. However, /l/ remains unchanged from its Old Tibetan form ལ <la>. /ʔl/ developed from <Cl> clusters in Old Tibetan including ལྷ <gla> and ལྷ <rla>. These changes are also reflected in the Lab variety (Sun 2019).

A waveform and spectrogram showing a typical /l̥/ is seen in (23). There is a period of voiceless frication lasting approximately half the duration of the /l̥/, followed by modal voicing. Also note that the  $f_0$  begins relatively high, falling near the end of the vowel.

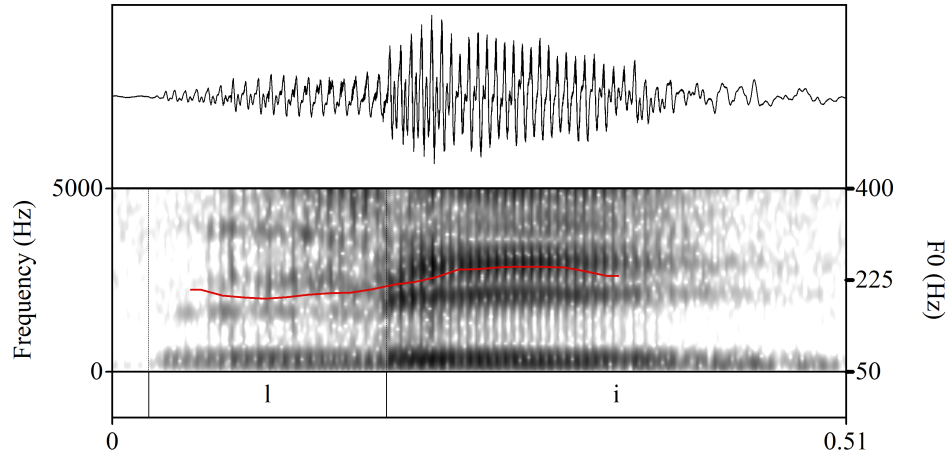
<sup>3</sup>Sun (2019) identifies several instances of word medial /ʔl/. However, these vocabulary items were not collected during my fieldwork, and although I suspect that /ʔl/ does occur word medially in Gyegu Tibetan, there are no examples of this in the corpus.

- (23) /<sub>3</sub>la/ ‘Buddha’ waveform, spectrogram, and pitch track (female speaker)  
(Tsiren)



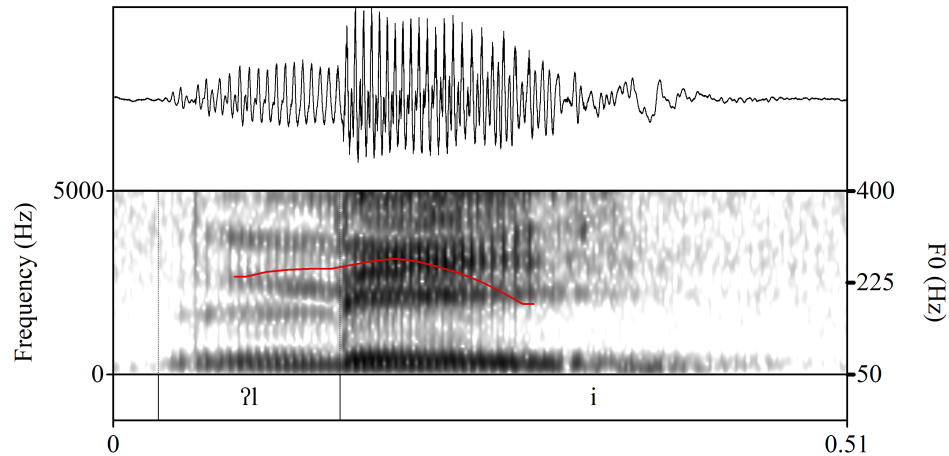
A waveform and spectrogram showing a typical /l/ is seen in (24). Note the voicing throughout the entire duration of /l/ and the lack of irregular glottal pulses. The  $f_0$  is relatively low at the beginning of /i/ before rising and then falling.

- (24) /li/ ‘work’ waveform, spectrogram, and pitch track (male speaker) (Gyg-043-PH-WU)



A waveform and spectrogram showing a typical /<sup>ɹ</sup>l/ is seen in (25). Note the irregular glottal pulses at the beginning of /<sup>ɹ</sup>l/, indicating preglottalization, followed by modal voicing. Additionally, the  $f_0$  is relatively high compared to (24), with a slight rise at vowel onset before falling near the end of the vowel.

- (25) /<sup>2</sup>li/ ‘vast’ waveform, spectrogram, and pitch track (male speaker) (Gyg-043-OH-WU)



These spectrograms and waveforms provide evidence that the contrast between these three phonemes lies primarily in voicing, preglottalization, and  $f_0$  contour. The laryngeal states are what give rise to the  $f_0$  effects.

#### 2.2.4.2 Palatal Approximants

The palatal approximants found in Gyegu Tibetan are /j/ and /<sup>2</sup>j/. A table of example words containing palatal approximants is seen in (26). There are no examples of word final /j/ or /<sup>2</sup>j/.

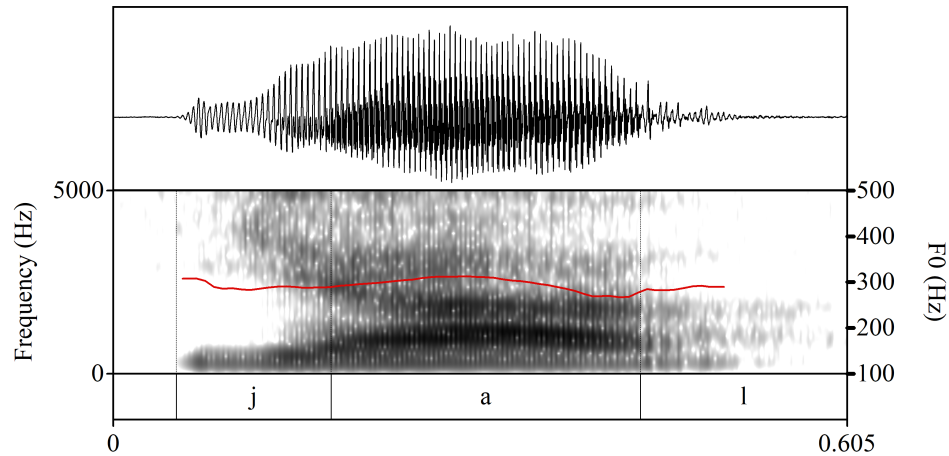
(26) Table of palatal approximant phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
j	jal ‘disappear’	aji ‘old woman’
<sup>?</sup> j	<sup>?</sup> jal ‘yawning/gaping’	

The Gyegu Tibetan phoneme /j/ is represented by ཡ <ja> in the orthography, and is unchanged from Old Tibetan. However, /<sup>?</sup>j/ developed from གཡ <gja> and དབྱ <dbja> consonant clusters. These changes are also reflected in the Lab variety (Sun 2019).

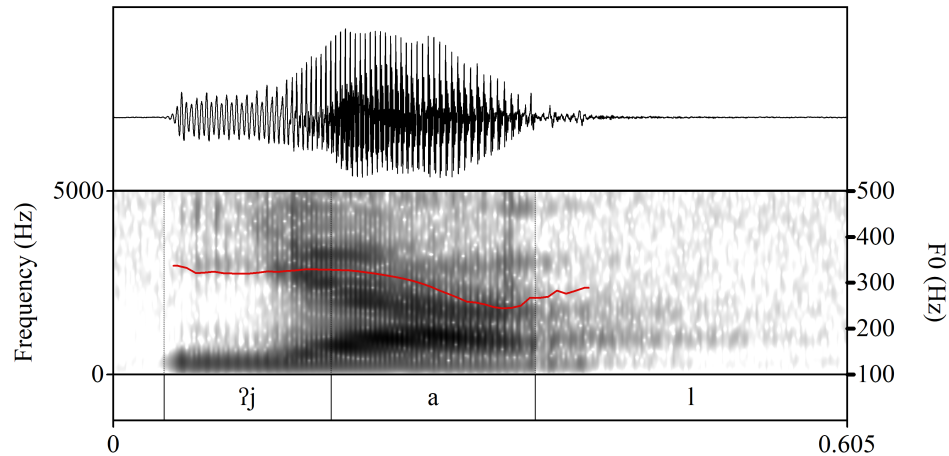
A waveform and spectrogram showing a typical /j/ is seen in (27). The approximant is modally voiced. Also note the relatively low  $f_0$  that stays relatively steady throughout the vowel, with slight lowering before the /l/ coda.

- (27) /jal/ ‘disappear’ waveform, spectrogram, and pitch track (female speaker)  
(Gyg-045-PH-M)



A waveform and spectrogram showing a typical /<sup>ʔ</sup>j/ is seen in (28). Unlike the previous spectrogram, the spectrogram in (28) displays the irregular glottal pulses expected of a preglottalized phoneme. The  $f_0$  of the vowel begins relatively high, with a more distinct fall before the /l/ coda. The  $f_0$  contour of /<sup>ʔ</sup>j/ is typically higher than that of /j/. However, the  $f_0$  contours in (27) and (28) are relatively similar, the most noticeable difference being the fall over the vowel in (28).

- (28) /ʔjal/ ‘yawning/gaping’ waveform, spectrogram, and pitch track (female speaker) (Gyg-045-PH-M)



The spectrograms and waveforms above support that the distinction between these two phonemes lies primarily in preglottalization and  $f_0$  contours. However, the articulation of these two phonemes is highly variable. In some instances, the preglottalized /ʔj/ is pronounced with minimal preglottalization.

#### 2.2.4.3 Labial-Velar Approximant

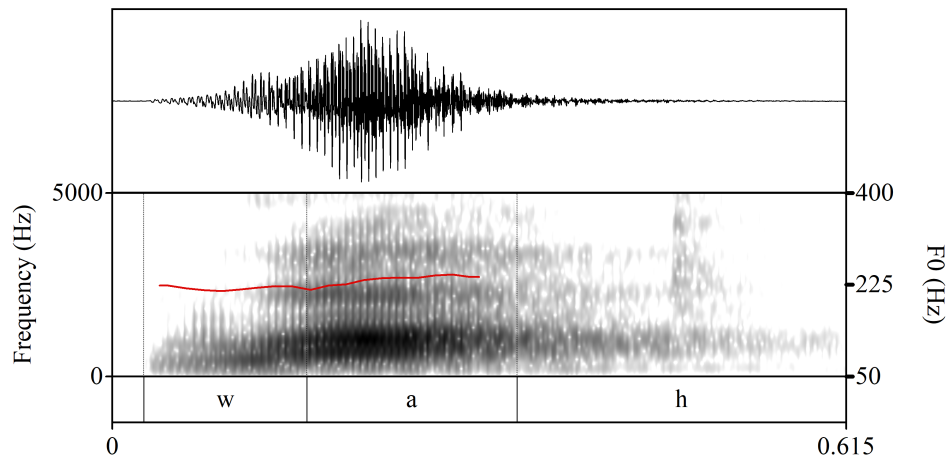
The only labial-velar approximant found in Gyegu Tibetan is modally voiced /w/. A table of example words containing /w/ is seen in (29). In the corpus, /w/ does not occur word finally.

(29) Table of labial-velar approximant /w/ examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
w	wan ‘milk’	rowa ‘tribe’
	wah ‘fox’	dawa ‘moon’

A spectrogram showing a typical /w/ is seen in (30). Note that the  $f_0$  in (30) is relatively low, as expected on a non-preglottalized and voiced approximant.

(30) /wah/ ‘fox’ waveform, spectrogram, and pitch track (male speaker) (Gyg-036-WL-WU)



## 2.2.5 Rhotic

The only rhotic consonant phoneme in Gyegu Tibetan is the alveolar trill /r/, which is in free variation with the voiced retroflex fricative [ʐ]. There is also a

voiceless allophone [r̥] that occurs word finally<sup>4</sup>.

(31) /r/ examples in Gyegu Tibetan

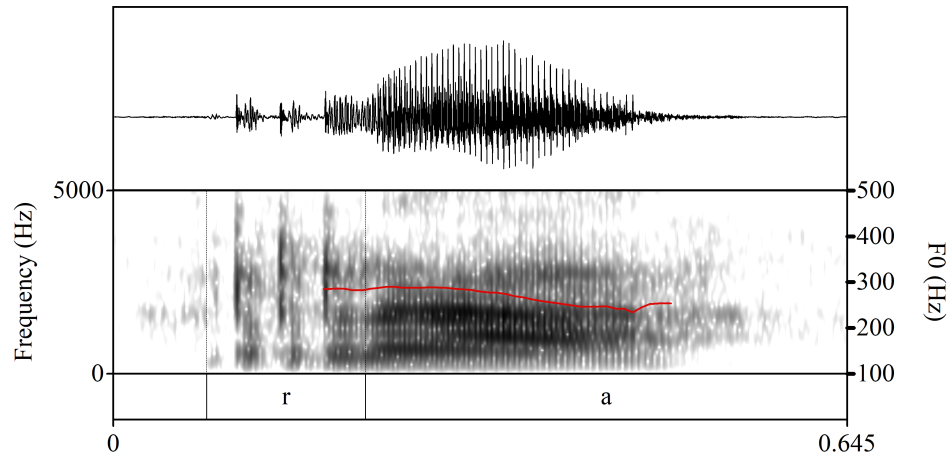
Phoneme:	Word Initial	Word Medial	Word Final
r	ra ‘goat’	ts <sup>h</sup> erim ‘goodbye’	ar ‘America’
	rə ‘mountain’	ərəgə ‘okay’	

The allophones [r] and [z] both occur word initially, and there is no phonetic environment that determines which allophone is used. There is inter-speaker variation, with some speakers preferring [r] and some preferring [z]. The spectrograms and waveforms (32) and (33) show these allophones used in different instances of the word /ra/ ‘goat’. An example of a speaker producing a trill is shown in (32).

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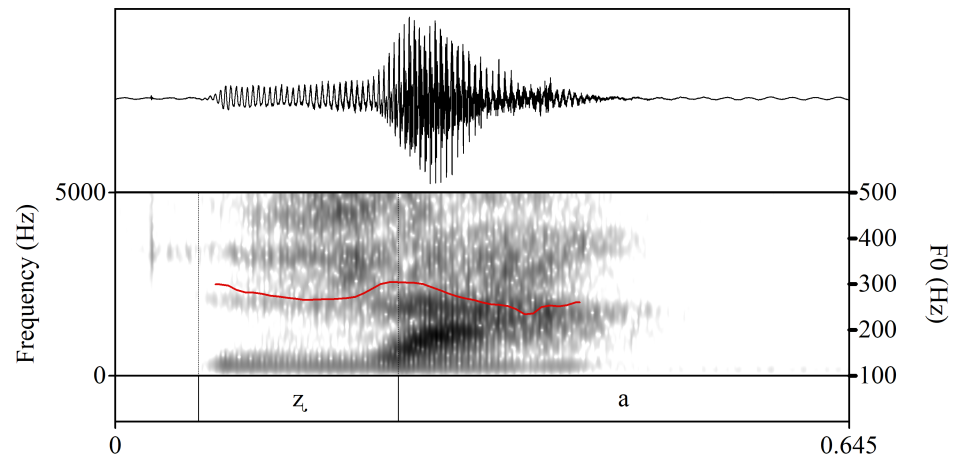
<sup>4</sup>This process of word final devoicing does not only affect /r/, as /ə/ undergoes a similar process. Word final devoicing of /ə/ is discussed in 2.4.2.

- (32) Waveform, spectrogram, and pitch track of trilled [r] in /ra/ ‘goat’ (female speaker) (Tsiren)



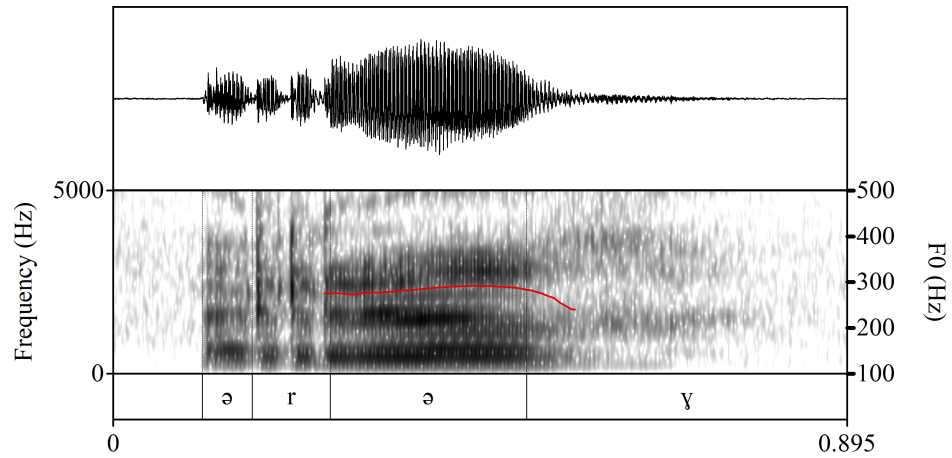
Example (33) shows a different speaker producing a voiced fricative.

- (33) Waveform, spectrogram, and pitch track of fricative [z] in /ra/ ‘goat’ (female speaker) (Gyg-006-WL-M)



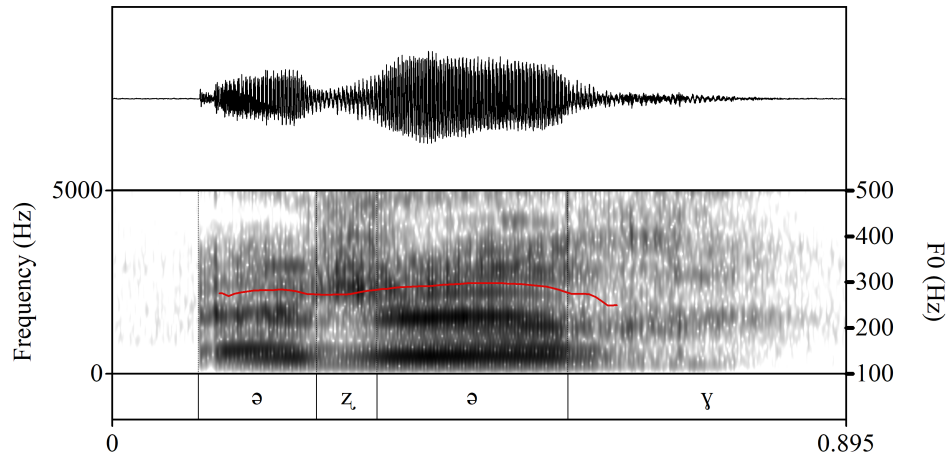
The allophones [r] and [z] also occur word medially. Once again, there is no phonetic environment that conditions the use of one allophone over the other. Example (34) shows a speaker producing a voiced trill word medially in /ərəgə/ ‘okay’.

- (34) Waveform, spectrogram, and pitch track of trilled [r] in /əɾəgə/ [əɾəɣə] ‘okay’  
(female speaker) (Tsiren)



Example (35) shows the same speaker producing a voiced fricative word medially in the same word.

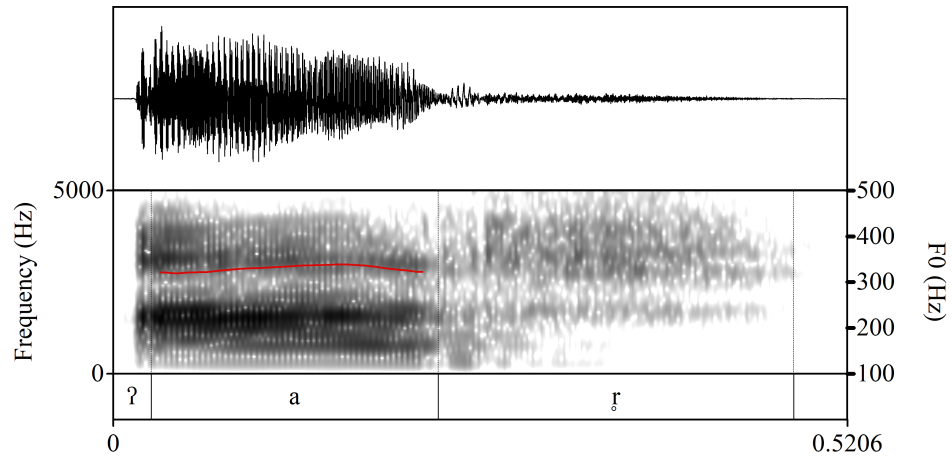
- (35) Waveform, spectrogram, and pitch track of fricative [z] in /ərəgə/ [əzəɣə]  
 ‘okay’ (female speaker) (Tsiren)



Both [r] and [z] also appear in word-final position. Once again, there is no phonetic environment that conditions the use of one allophone over the other. In word final position, both [r] and [z] are devoiced. The spectrograms and waveforms in (36) and (37) show this phonological process of word final devoicing.

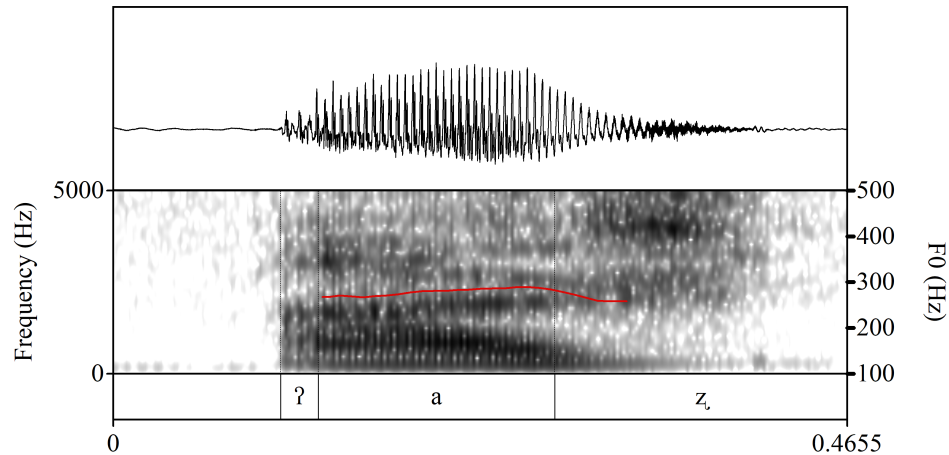
Example (36) demonstrates a speaker producing a devoiced word final [r]. There is very brief voicing of the consonant before becoming voiceless.

(36) Devoiced Word Final [r] (female speaker) (Tsiren)



Example (37) demonstrates a different speaker producing a devoiced word final [z]. Note that there is a longer period of voicing in this example before voicelessness begins.

(37) Devoiced Word Final [z̥] (female speaker) (Gyg-006-WL-M)



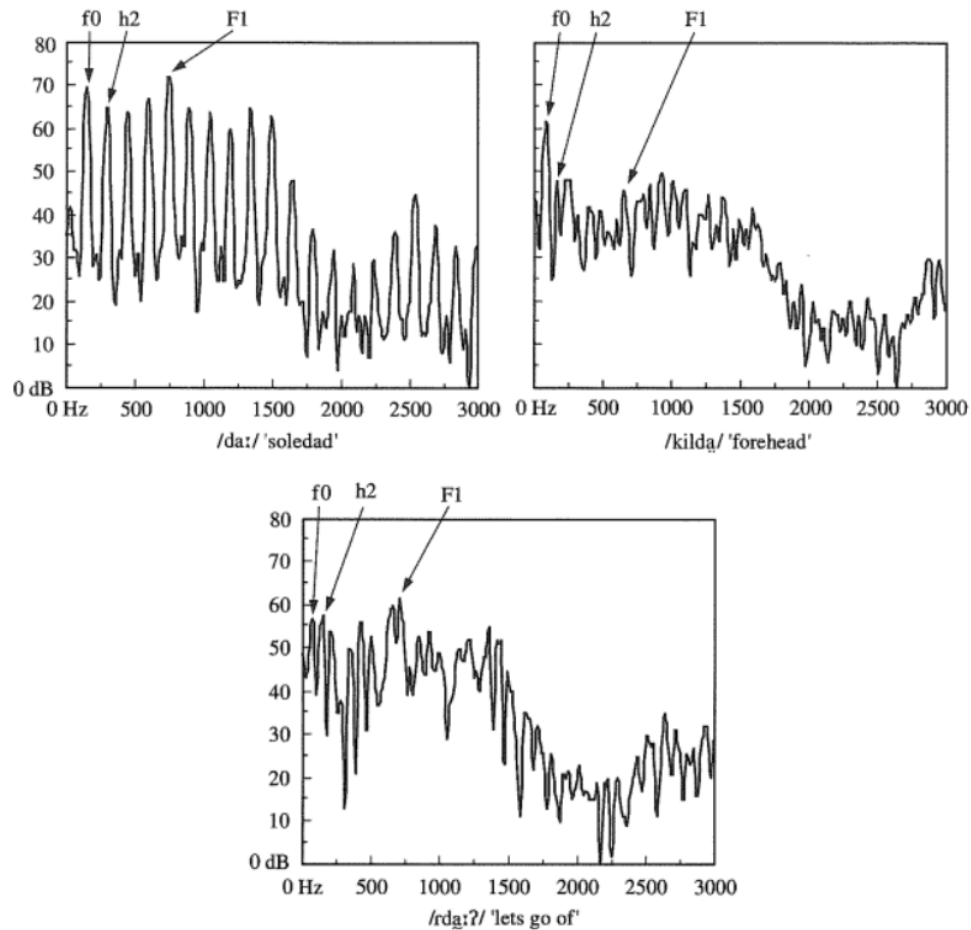
## 2.2.6 Fricatives

There are three places of articulation for fricatives: glottal, alveolar, and palatal. Alveolar and palatal fricatives in Gyegu Tibetan exhibit a four way contrast involving voicing, aspiration, and breathiness. I have changed the maximum frequency of the spectrograms in this section and all sections involving fricatives and affricates to 10,000Hz in order to better illustrate high frequency phenomena related to these phonemes.

In 2.2.6.2 through 2.2.8.4 I introduce spectra to illustrate differences in the relative amplitude height of H1 and H2 on vowels following aspirated, tense, and breathy consonants. However, I do not provide spectra for the voiced obstruents. While the relative amplitude of H1 and H2 on vowels following voiceless obstruents constitute an important phonological contrast, the negative voice onset time (VOT) of voiced obstruents is the most important factor distinguishing them from their voiceless

counterparts. For all spectra, I extracted approximately the first 25% of the vowel. According to Gordon and Ladefoged (2001: 397) “spectral tilt, i.e., the degree to which intensity drops off as frequency increases” can be used to reliably differentiate phonation types in a variety of languages. Spectral tilt can be measured as the difference in amplitude between H1 and H2 (Gordon & Ladefoged 2001: 397). Gordon and Ladefoged (2001: 398) state that a lower H1 (which they label as  $f_0$ ) compared to H2 is associated with creaky vowels, a higher H1 compared to H2 is associated with breathy vowels, and an intermediate value where H1 and H2 are relatively close is associated with modal vowels. Creaky phonation is associated with tightly adducted vocal folds, whereas breathy phonation is associated with vocal folds that are fairly abducted (Ladefoged 1971). These differences are shown in (38).

- (38) Relative spectral tilt values for modal /da:/ ‘soledad’, /kilda/ ‘forehead’, and /rda:ʔ/ ‘lets go of’ in San Lucas Quiavini Zapotec (Gordon & Ladefoged 2001: 398)



Gordon and Ladefoged (2001: 398-399) also mention that spectral tilt can differentiate between “tense” and “lax” phonation in some languages. Although tense consonants in Gyegu Tibetan are followed by vowels with a lower H1 than H2, I hypothesize that this is the result of a tenseness distinction rather than a creakiness distinction.

In Gyegu Tibetan, I hypothesize that  $H1 \geq H2$ <sup>5</sup> and a high  $f_0$  at vowel onset is associated with aspirated fricatives (such as /s<sup>h</sup>/),  $H1 < H2$  and a high  $f_0$  at vowel onset is associated with tense fricatives (such as /s/), and  $H1 > H2$  (a greater difference than that of aspirated consonants) with a low  $f_0$  at vowel onset is associated with breathy fricatives (such as /s/). As described in 2.2.2, this distinction is similar to the fortis vs lenis distinction in Korean. Korean stops display a three-way laryngeal contrast between lenis, aspirated, and fortis (Kang et al. 2022). The fortis stops are characterized by a higher  $f_0$  on the following vowel and “a more pressed or creaky quality, as indicated by low or negative values of  $H1-H2$ ” (Kang et al. 2022: 216). The lenis stops are characterized by a lower  $f_0$  on the following vowel and “lenis and aspirated stops show higher  $H1-H2$  values, indicating breathier voice” (Kang et al. 2022: 216). Although fricatives in Korean lack the three way distinction of stops, there is a two way distinction between fortis and lenis (Iverson 1983). In Korean, vowels following a lenis fricative are breathier and have a higher  $F_0$  than their fortis counterparts. Unlike Korean, fricatives in Gyegu Tibetan display a more complicated four way contrast in voicing, aspirated, and tense vs breathy.

### 2.2.6.1 Glottal Fricative

The only glottal fricative observed in Gyegu Tibetan is /h/. A table of example words containing /h/ is seen in (39).

(39) Table of glottal fricative phoneme examples in Gyegu Tibetan .

Phoneme:	Word Initial	Word Medial	Word Final
h	hoʔ ‘you (sg.)’	ʧ <sup>h</sup> ohə ‘paper’	məpoh ‘brown’

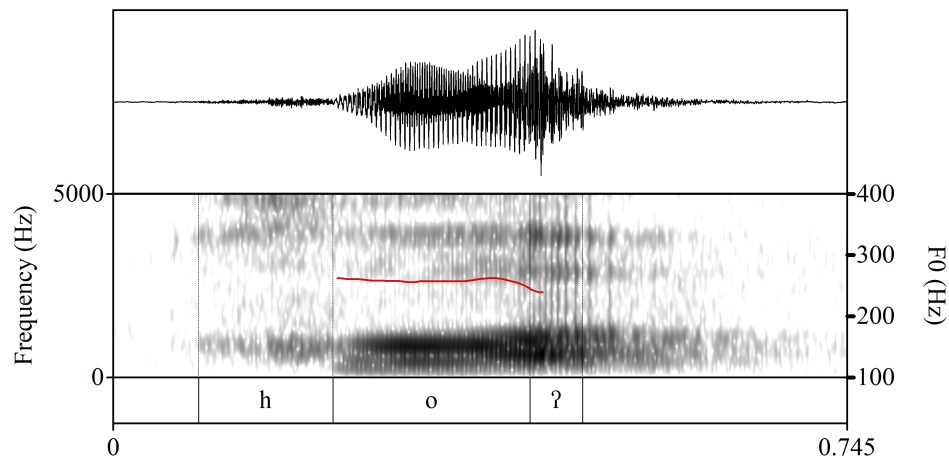
Image (40) shows a waveform and spectrogram for a typical /h/. Note the rela-

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<sup>5</sup>In terms of amplitude.

tively high and level  $f_0$  on the following vowel.

- (40) /hoʔ/ ‘you’ waveform, spectrogram, and pitch track (female speaker) (Gyg-007-WL-M)



Although Sun (2019) identifies /fi/ as a phoneme in the Lab variety, no examples are found in the corpus of Gyegu Tibetan.

### 2.2.6.2 Alveolar Fricatives

The alveolar fricative phonemes observed in Gyegu Tibetan are /z/, /s/, /s<sup>h</sup>/, and /s<sup>fi</sup>/. A table of example words containing these phonemes is seen in (41). Although /z/ occurs word finally, there are no examples of word final /s/, /s<sup>h</sup>/, or /s<sup>fi</sup>/ in the corpus.

(41) Table of alveolar fricative phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial	Word Final
z	zo ‘make/construct’ zə ‘drunk’	izni ‘right now’ liza ‘homework’	iz ‘now’
s	sa ‘hard, firm’	pusa ‘teenage boy’	
s <sup>h</sup>	s <sup>h</sup> opo ‘Mongolian’	ʎas <sup>h</sup> a ‘Lhasa’	
s <sup>fi</sup>	s <sup>fi</sup> ama ‘food’	kəs <sup>fi</sup> e ‘steal’	

The Gyegu Tibetan phoneme /z/ developed from <Cz> consonant clusters in Old Tibetan such as བཟ <bza> and གཟ <gza>. /s/ developed from <Cs> consonant clusters in Old Tibetan, including བས <bsa> and གས <gsa>. /s<sup>h</sup>/ is represented in the orthography by ས <sa>, although it is unclear if this phoneme developed additional aspiration or remains unchanged from Old Tibetan. /s<sup>fi</sup>/ developed from the Old Tibetan voiced alveolar fricative ཟ <za>. These changes are also reflected in the Lab variety (Sun 2019: 46).

Image (42) displays a waveform and spectrogram of /z/. Note that the duration of the fricative is voiced, and the  $f_0$  of the following vowel begins relatively low before rising and then falling.

- (42) /zə/ 'drunk' waveform, spectrogram, and pitch track (female speaker) (Gyg-070-WL-Ts)

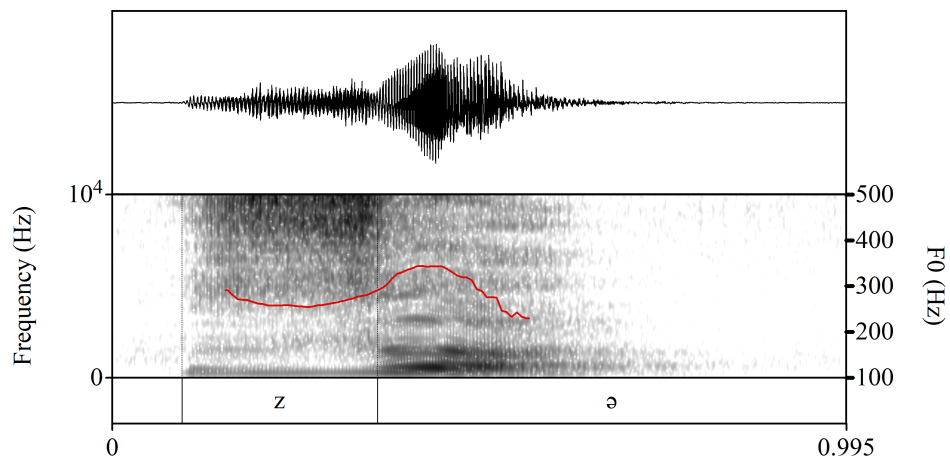


Image (43) displays a waveform and spectrogram of /s/. Note the relatively low and uniform amplitude throughout the fricative. Also note the relatively high  $f_0$  at vowel onset, which drops rapidly.

- (43) /sa/ 'hard' waveform, spectrogram, and pitch track (female speaker) (Gyg-070-WL-Ts)

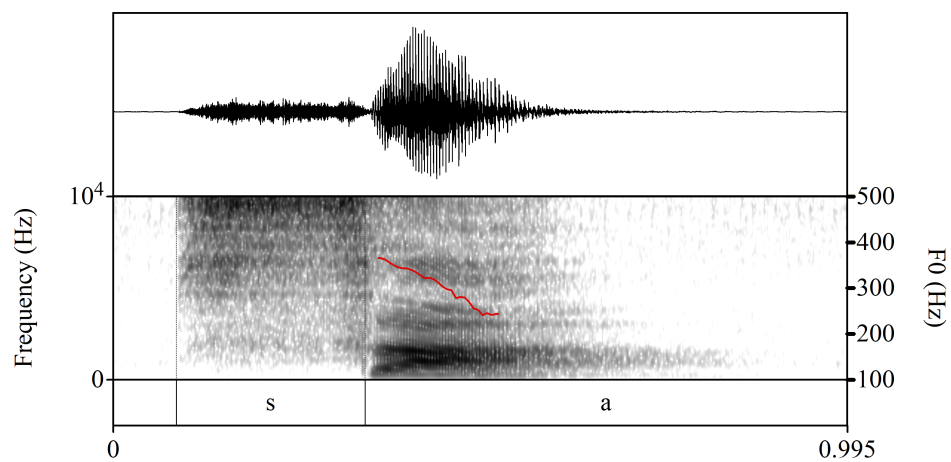


Image (44) shows the spectrum for the first portion of the vowel in /sa/ 'hard'. Note that the H1 is slightly lower than the H2, as is typical for creaky or tense voice.

(44) Spectrum of /sa/ 'hard'

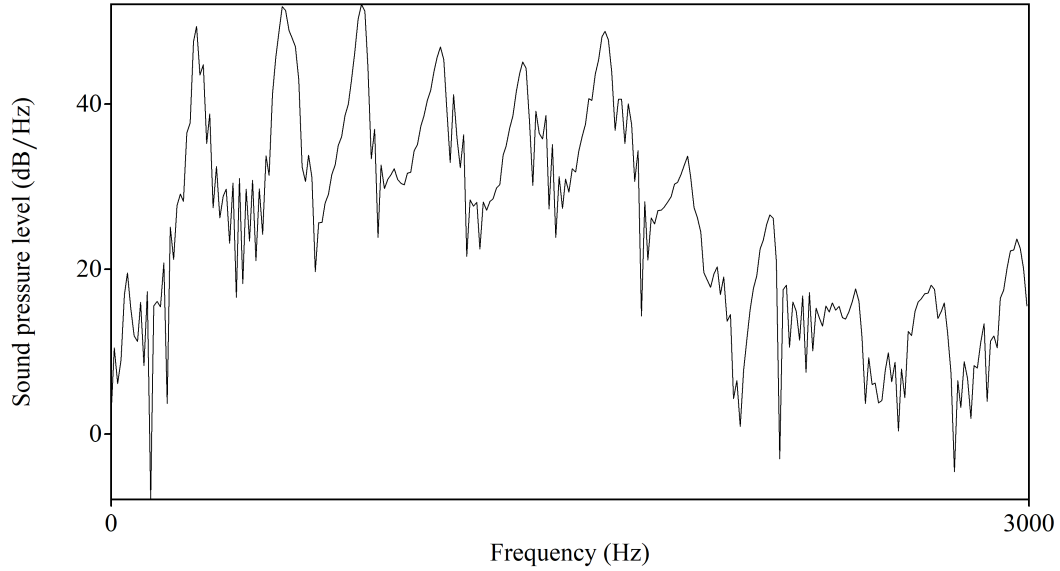


Image (45) displays a waveform and spectrogram of /s<sup>h</sup>/. Note the higher amplitude of the fricative in relation to /s/, and the increased noise at lower frequency beginning shortly before the vowel. Also note the high  $f_0$  at vowel onset.

- (45) /s<sup>h</sup>a/ ‘place’ waveform, spectrogram, and pitch track (female speaker) (Gyg-070-WL-Ts)

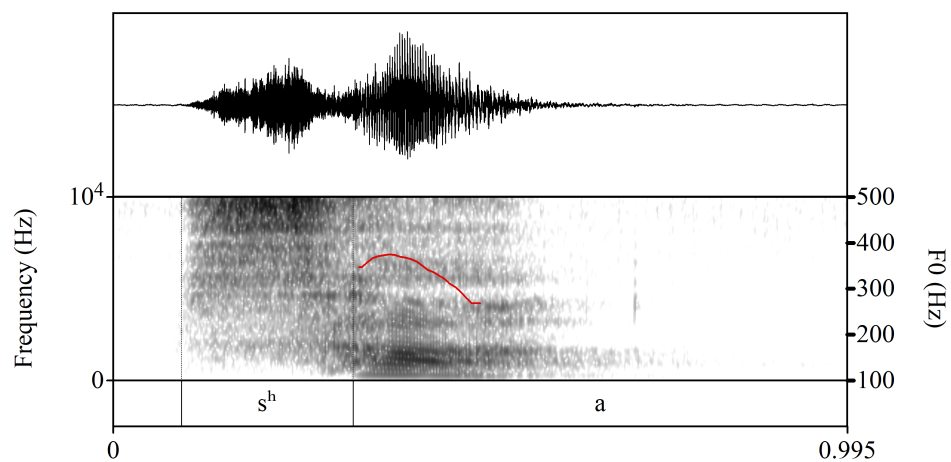


Image (46) shows the spectrum for the first portion of the vowel in /s<sup>h</sup>a/ ‘place’. Note that unlike /sa/ ‘hard’, the H1 is higher than H2.

(46) Spectrum of /s<sup>h</sup>a/ ‘place’

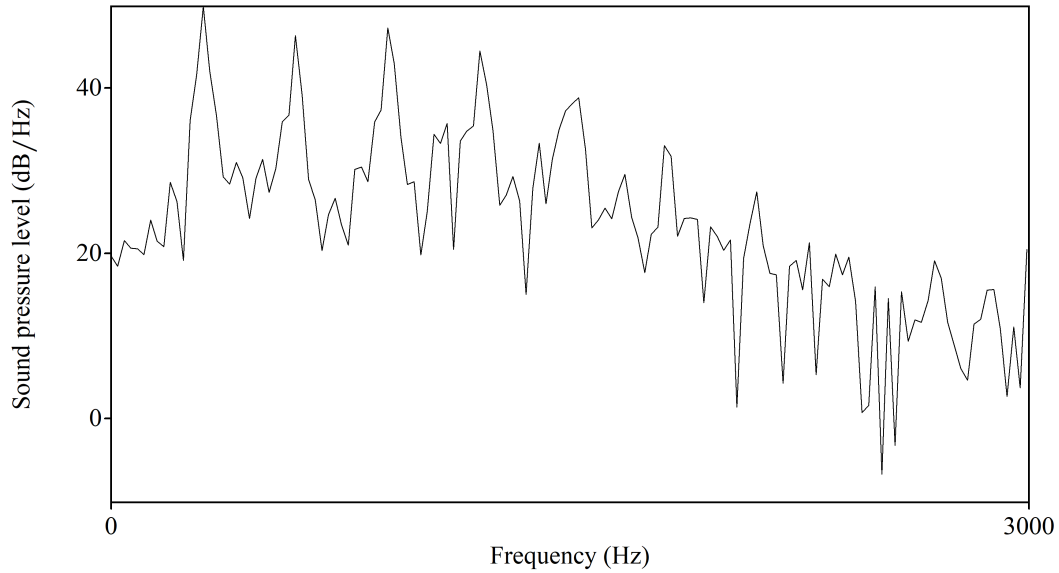


Image (47) displays a waveform and spectrogram of /s<sup>h</sup>/. Note the low energy at lower frequencies when compared to /s/ and /s<sup>h</sup>/ and the higher amplitude throughout the fricative compared to /s/. Also note the lower  $f_0$  at vowel onset, which falls less sharply than the vowels following /s/ and /s<sup>h</sup>/.

- (47) /s<sup>h</sup>a/ 'eat' waveform, spectrogram, and pitch track (female speaker) (Gyg-070-WL-Ts)

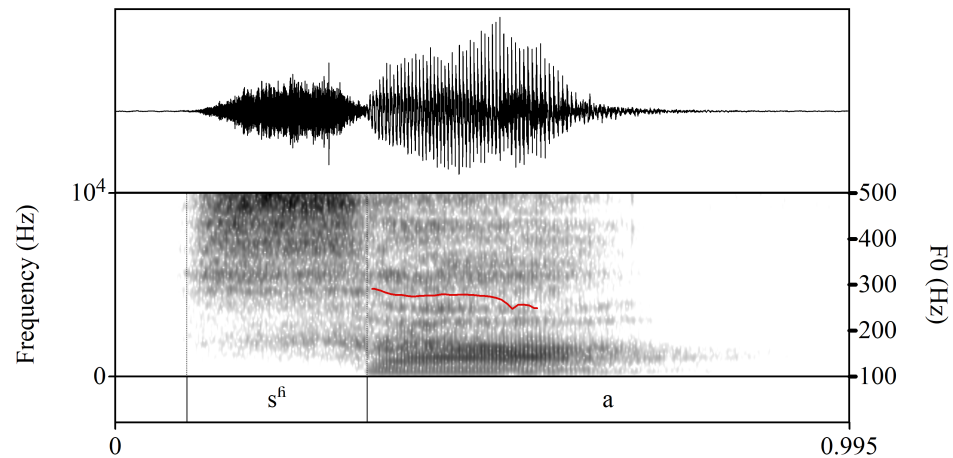
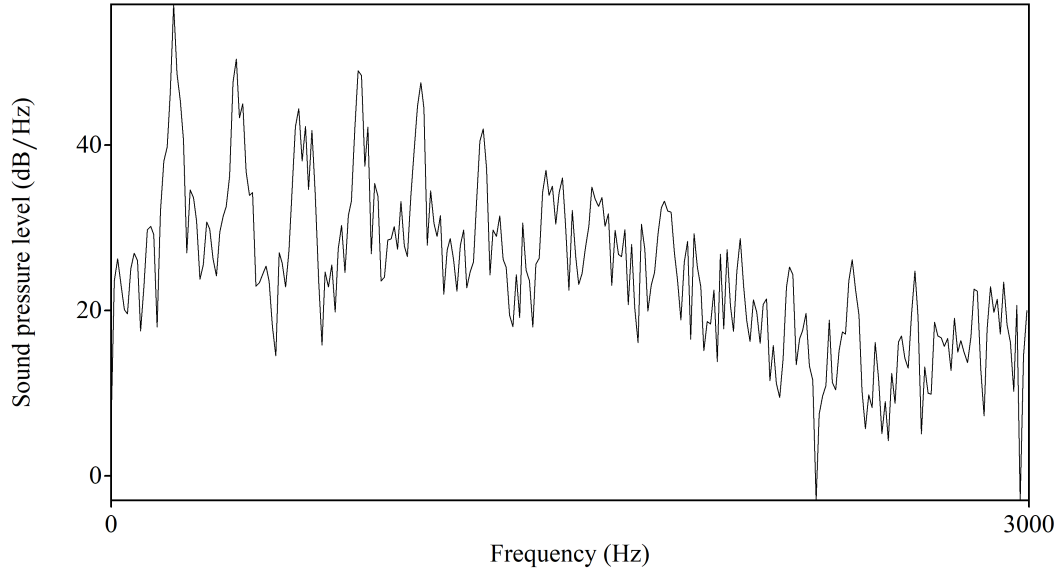


Image (48) shows the spectrum for the first portion of the vowel in /s<sup>h</sup>a/ 'eat'. Note that the H1 is higher than H2, as is typical for breathy or lax voice. The breathy alveolar fricative is relatively less common than its tense and aspirated counterparts, which made collection of minimal pairs difficult.

(48) Spectrum of /s<sup>fi</sup>a/ ‘eat’



These images suggest that the primary distinction between these phonemes is the amplitude of the fricative, the presence or absence of aspiration (which presents as increased energy at lower frequencies before the vowel), the relative H1 and H2 of the following vowel, and the height of  $f_0$  at vowel onset. These differences are summarized in (49).

(49) Table of phonetic differences in alveolar fricatives

	z	s	s <sup>h</sup>	s <sup>fi</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Spectral tilt	NA	H1<H2	H1>H2	H1>H2

### 2.2.6.3 Palatal Fricatives

The palatal fricatives observed in Gyegu Tibetan are /j/, /ç/, /ç<sup>h</sup>/, and /ç<sup>fi</sup>/. A table of example words containing palatal fricatives is seen in (50). None of these phonemes occur word finally.

(50) Table of palatal fricative phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
j	jə ‘four’	
ç	ça ‘butcher’	ndzaçɿ ‘thicket’
ç <sup>h</sup>	ç <sup>h</sup> a ‘meat’	ɲeə ‘twenty’
ç <sup>fi</sup>	ç <sup>fi</sup> a ‘hat’ ç <sup>fi</sup> o ‘yogurt’	

The Gyegu Tibetan phoneme /j/ developed from <Cz> consonant clusters in Old Tibetan such as བཞ <bza> and གཞ <gza>. /ç/ developed from <Cç> consonant clusters in Old Tibetan, including བཅ <bç> and གཅ <gç>. /ç<sup>h</sup>/ is represented in the orthography by ཅ <ç>, which has undergone a change from the Old Tibetan /ç/ to /ç<sup>h</sup>/ (Sun 2019: 46). /ç<sup>fi</sup>/ developed from the Old Tibetan voiced alveo-palatal fricative ཞ <ç<sup>fi</sup>>. These changes are also reflected in the Lab variety (Sun 2019: 46).

Image (51) shows a waveform and spectrogram for /j/. Note voicing throughout the duration of the fricative.

(51) /jə/ 'four' waveform, spectrogram, and pitch track (male speaker) (Gyg-2025-062-Syn-D)

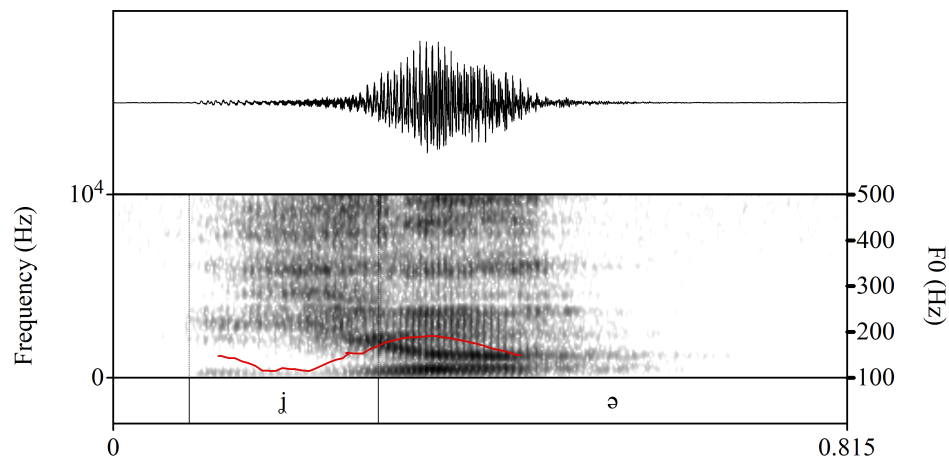


Image (52) shows a waveform and spectrogram for a typical /ç/. Note the relatively consistent level of frication throughout the consonant and the relatively high and falling  $f_0$  on the following vowel.

(52) /ça/ ‘butcher’ waveform, spectrogram, and pitch track (female speaker) (Gyg-048-Syn-M)

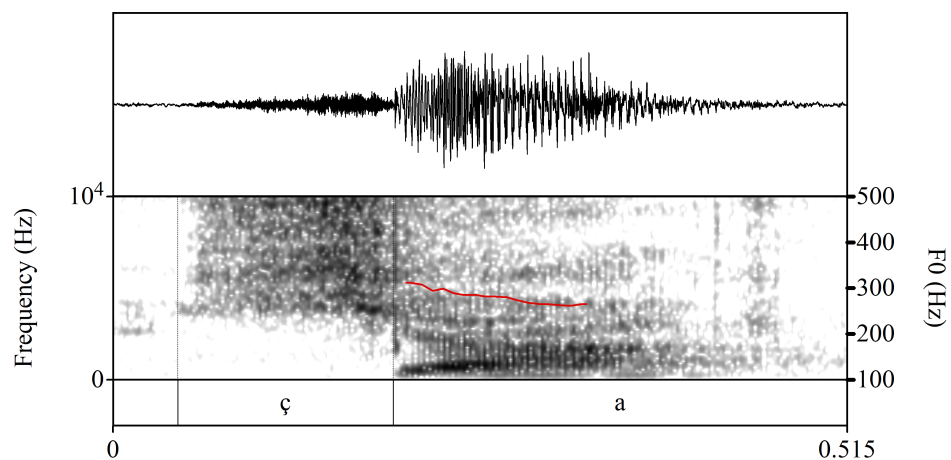


Image (53) shows the spectrum for the first portion of the vowel in /ça/ ‘butcher’ (v.). Note that the H1 is lower than H2, indicating tight vocal fold adduction.

(53) Spectrum of /ça/ 'butcher' (v.)

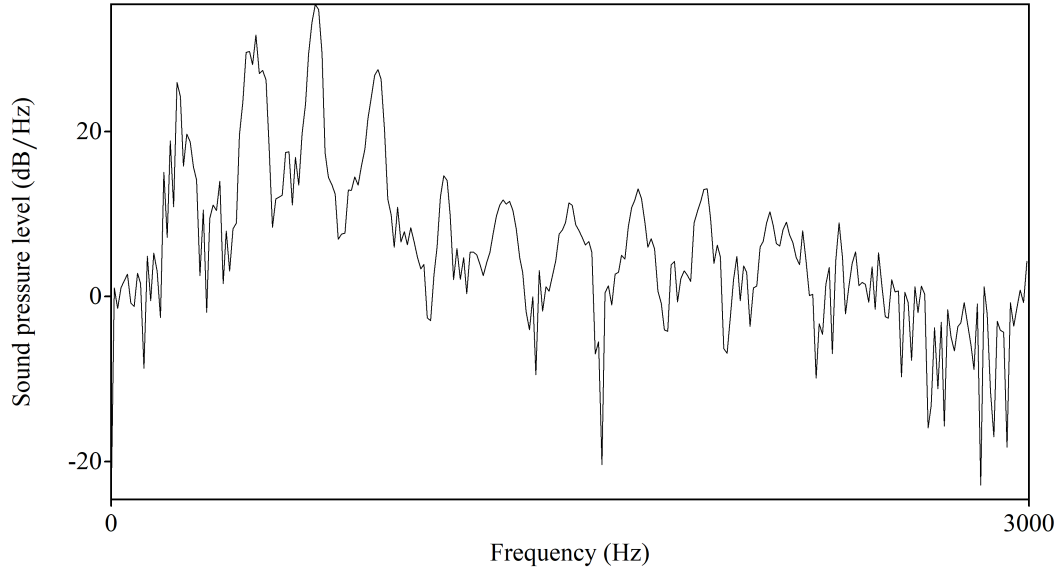


Image (54) shows a waveform and spectrogram for a typical /ç<sup>h</sup>/. Note the increase in intensity at lower frequencies near the end of the fricative, which differentiates /ç<sup>h</sup>/ from /ç/. Also note the relatively high and falling  $f_0$  on the following vowel.

- (54) /ç<sup>h</sup>a/ ‘meat’ waveform, spectrogram, and pitch track (female speaker) (Gyg-007-WL-M)

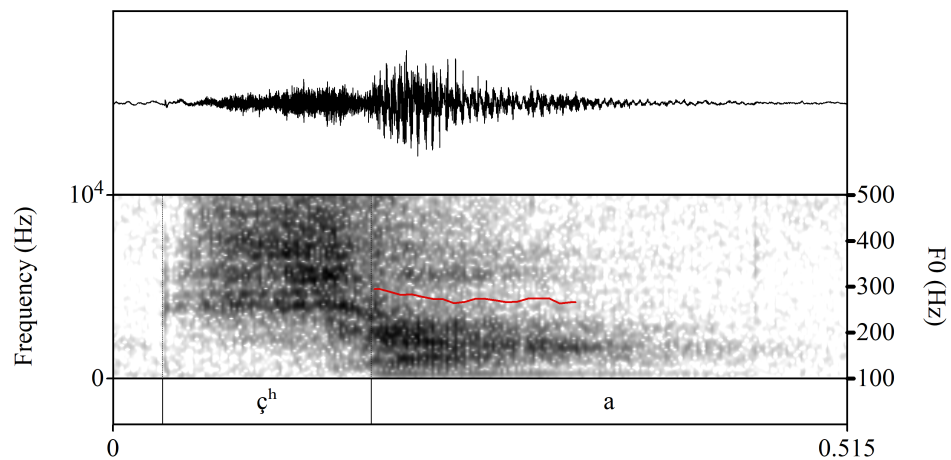


Image (55) shows the spectrum for the first portion of the vowel in /ç<sup>h</sup>a/ ‘meat’. Note that the H1 is higher than H2.

(55) Spectrum of /ç<sup>h</sup>a/ 'meat'

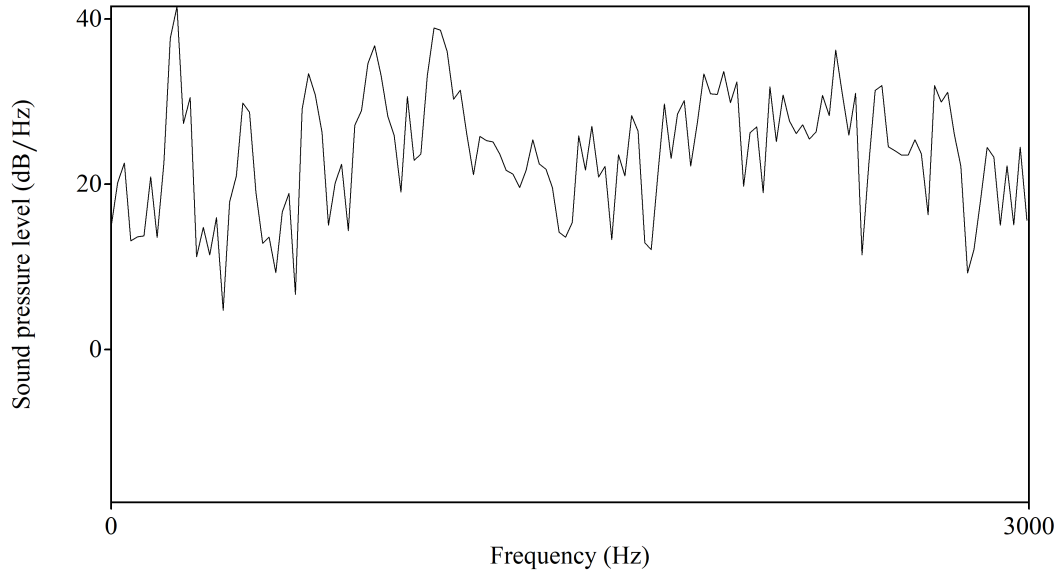


Image (56) shows a waveform and spectrogram for a typical /ç<sup>h</sup>/. Note the relatively consistent level of frication throughout the consonant and the relatively low and slightly falling  $f_0$  on the following vowel.

(56) /ç<sup>h</sup>a/ ‘hat’ waveform, spectrogram, and pitch track (female speaker) (Gyg-007-WL-M)

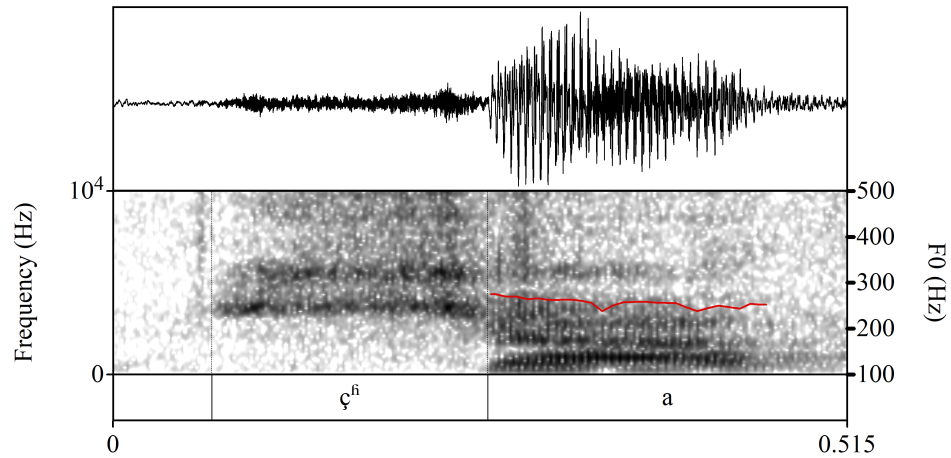
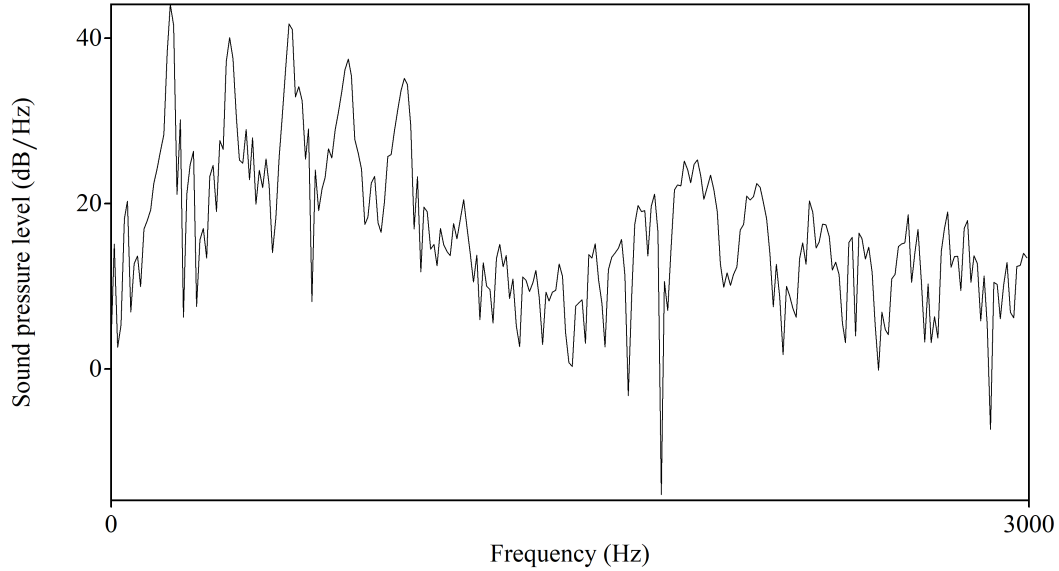


Image (57) shows the spectrum for the first portion of the vowel in /ç<sup>h</sup>a/ ‘hat’. Note that the H1 is higher than H2, indicating a weak closure of the glottis and higher spectral tilt than that observed in image (53) for /ça/ ‘butcher’ (v.).

(57) Spectrum of /ç<sup>fi</sup>a/ ‘hat’



The waveforms, spectrograms, and spectra above indicate that the contrast in these phonemes is voicing, the intensity of frication at various points, the height of  $f_0$  on the following vowel, and the degree of breathiness on the following vowel as measured by H1-H2. A table demonstrating the differences between these phonemes is shown in (58).

(58) Table of palatal fricative features

	j	ç	ç <sup>h</sup>	ç <sup>fi</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Spectral tilt	NA	H1<H2	H1>H2	H1>H2

## 2.2.7 Affricates

The same four-way distinction found in fricatives is also found in affricates. Sun (2019: 19) also found this distinction in the Lab variety. There are differences in the length of the fricative following the stop release, breathiness of the following vowel, and  $f_0$  height at onset of the following vowel.

### 2.2.7.1 Alveolar Affricates

The alveolar affricates observed in Gyegu Tibetan are /dz/, /ts/, /ts<sup>h</sup>/, and /ts<sup>fi</sup>/<sup>6</sup>. A table of example words containing alveolar affricates is seen in (59). Alveolar affricates do not occur word finally.

(59) Table of alveolar affricate phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
dz	dza ‘murky’ dzm ‘lie’	ŋgodzoʔ ‘begin’
ts	tsɪrm ‘goodbye’ tsa ‘grass’	ŋatso ‘we’
ts <sup>h</sup>	ts <sup>h</sup> aʔ ‘fever’	ŋats <sup>h</sup> aʔ ‘a little bit’
ts <sup>fi</sup>	ts <sup>fi</sup> i ‘extrude’	

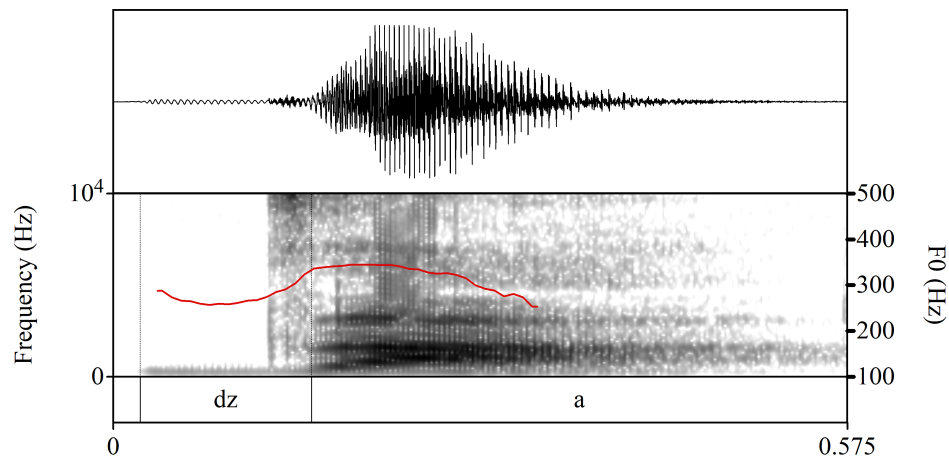
The Gyegu Tibetan phoneme /dz/ developed from <(C)Cdz> consonant clusters in Old Tibetan such as བརྟམ <brdza> and རྟམ <rdza>. /ts/ developed from both <(C)Cts> consonant clusters including བབྱམ <btsa> and རྟམ <rtsa>, and the single consonant རྟ <tza>. /ts<sup>h</sup>/ is represented in the orthography by རྟམ <ts<sup>h</sup>a>, and also developed from the Old Tibetan བཟམ <mts<sup>h</sup>a>. /ts<sup>fi</sup>/ developed from the Old Tibetan

<sup>6</sup>/ts<sup>fi</sup>/ is a very rare morpheme in the corpus, and occurs much less frequently than the other alveolar affricates.

voiced alveolar affricate  $\text{ɹ}$  <dza>. These changes are also reflected in the Lab variety (Sun 2019).

Image (60) shows a waveform and spectrogram for a typical /dz/. Note the voicing before the release of the stop and throughout the fricative. Also note the relatively low  $f_0$  onset of the following vowel, which falls near the end.

(60) /dza/ ‘stone ridge’ waveform, spectrogram, and pitch track (female speaker)  
(Gyg-070-WL-Ts)



While the onset of the voiced stop is segmented above, it is not possible to segment the onset of a voiceless stop in an utterance initial position. As a result, throughout my discussion of voiceless affricates and stops, it is not possible to comment on the duration of the stop portion of these phonemes.

Image (61) shows a waveform and spectrogram for a typical /ts/. Note the lack of voicing throughout the affricate, the relatively short duration of the fricative portion, and high frequency energy, which is typical of alveolar fricatives. Also note the

relatively high and falling  $f_0$  of the following vowel.

- (61) /tʰsa/ 'grass' waveform, spectrogram, and pitch track (female speaker) (Gyg-070-WL-Ts)

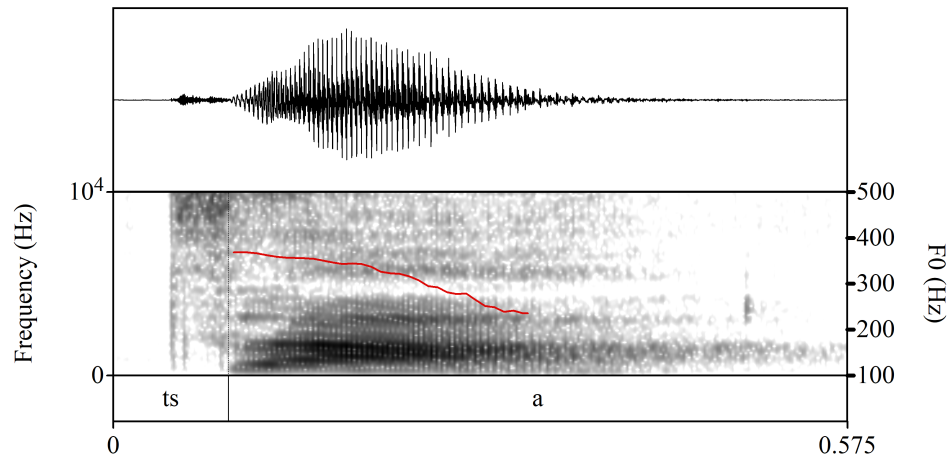


Image (62) shows the spectrum for the first portion of the vowel in /tʰsa/ 'grass'. Note that the H1 is lower than the H2, indicating tight vocal fold adduction.

(62) Spectrum of /tʰsa/ 'grass'

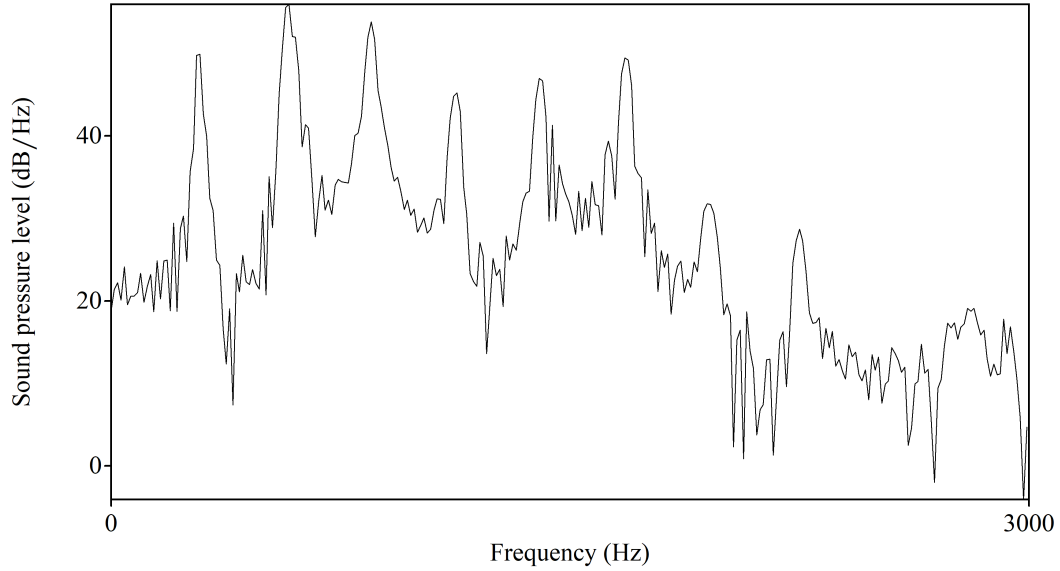


Image (63) shows a waveform and spectrogram for a typical /tʰs<sup>h</sup>/. Note the lack of voicing throughout the affricate, the relatively longer duration of the fricative portion, and visible aspiration just before the vowel onset. Also note the relatively high  $f_0$  of the following vowel.

(63) /ts<sup>h</sup>a/ 'salt' waveform, spectrogram, and pitch track (female speaker) (Gyg-070-WL-Ts)

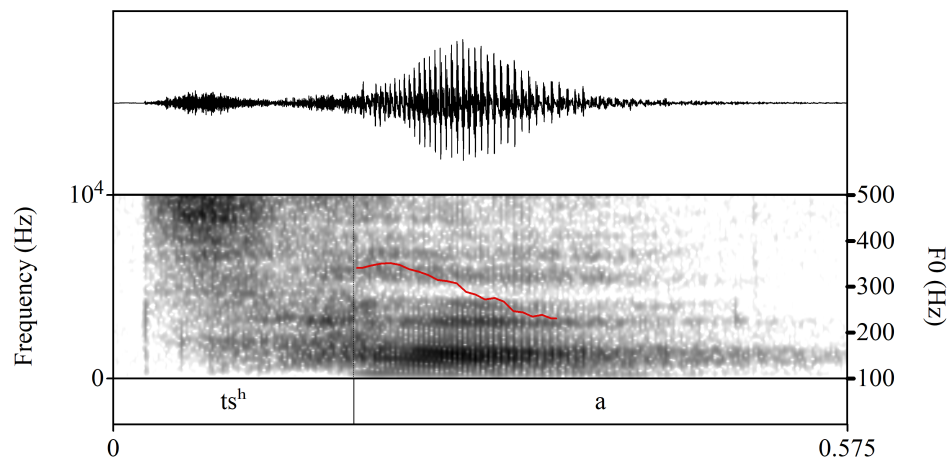


Image (64) shows the spectrum for the first portion of the vowel in /ts<sup>h</sup>a?/ 'salt'. Note that H1 is higher than H2.

(64) Spectrum of /ts<sup>h</sup>a/ 'salt'

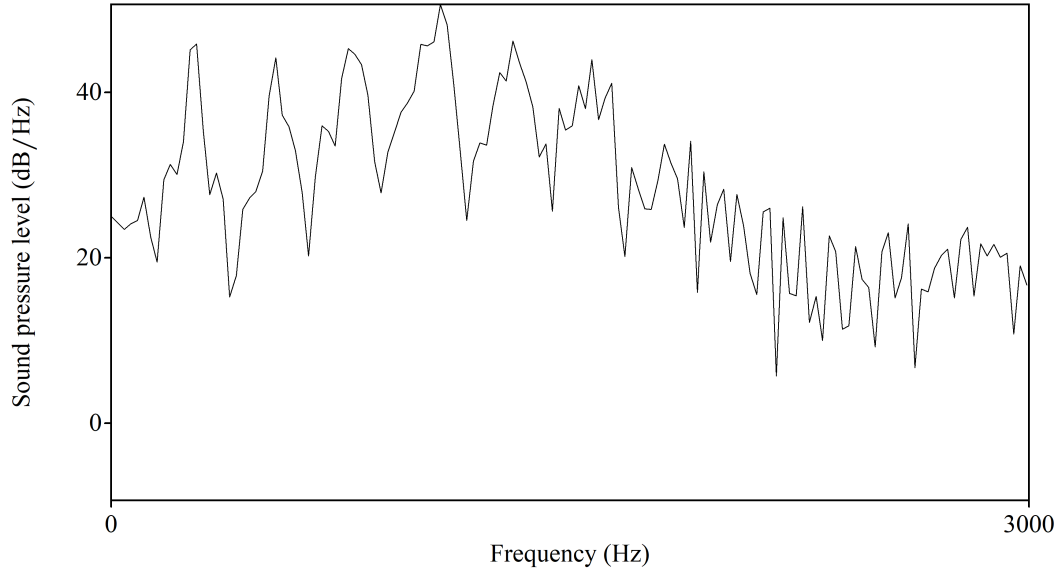


Image (65) shows a waveform and spectrogram for a typical /ts<sup>h</sup>/. Note that although the affricate starts voiceless, there is a period of voicing before the onset of the vowel. Also note that the period of frication is longer in /ts<sup>h</sup>/ than in /ts/. Although the  $f_0$  in (61) and (65) are very similar, the  $f_0$  of /ts<sup>h</sup>/ in (65) is slightly lower, as expected of breathy affricates.

- (65) /ts<sup>h</sup>i/ ‘extrude’ waveform, spectrogram, and pitch track (female speaker)  
(Gyg-070-WL-Ts)

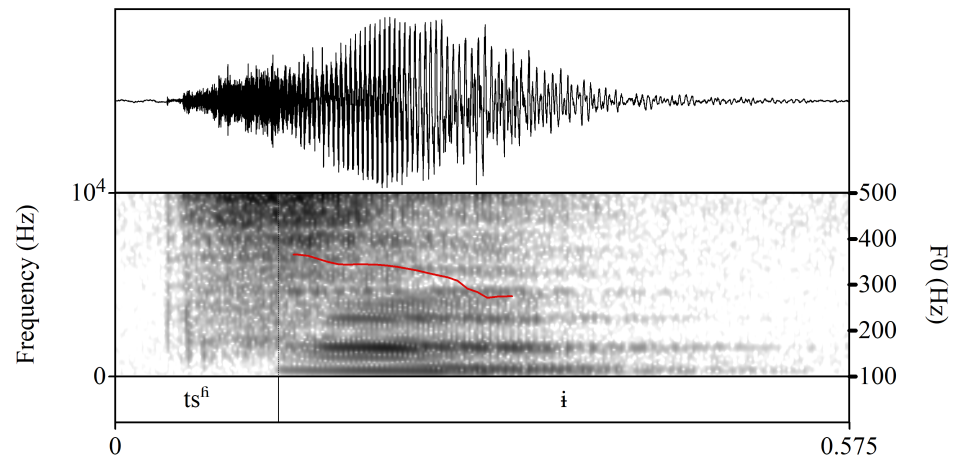
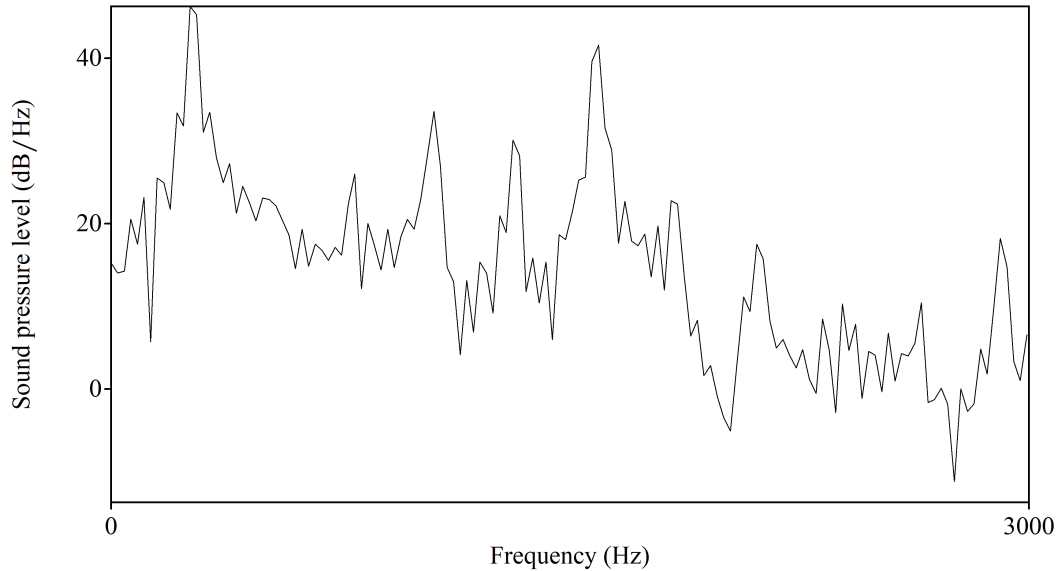


Image (66) shows the spectrum for the first portion of the vowel in /ts<sup>h</sup>i/. Note that the H1 is much higher than H2, indicating less longitudinal tension of the vocal folds.

(66) Spectrum of /ts<sup>fi</sup>/ ‘extrude’



As the above waveforms and spectrograms demonstrate, the primary contrast between these phonemes is voicing, the duration of the fricative release, intensity at different frequencies, the degree of breathiness on the following vowel as measured by H1-H2, and  $f_0$  contour. These differences are summarized in (67).

(67) Table of phonetic differences in alveolar affricates

	dz	ts	ts <sup>h</sup>	ts <sup>fi</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Fricative duration	NA	Short	Long	Intermediate
Spectral tilt	NA	H1<H2	H1>H2	H1>H2

### 2.2.7.2 Retroflex Affricates

The retroflex affricates observed in Gyegu Tibetan are /dz/, /tʂ/, /tʂʰ/, and /tʂʰᶦ/. A table of example words containing retroflex affricates is seen in (68). Retroflex affricates do not occur word finally.

(68) Table of retroflex affricate phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
dz	dzɪm ‘ignite/burn’ dzɔma ‘Drolma’	ɭodza ‘school’
tʂ	tʂa ‘hair’	gatʂə ‘bicycle’
tʂʰ	tʂʰɔɿ ‘blood’	gotʂʰeɿ ‘leader’
tʂʰᶦ	tʂʰᶦɔɿ ‘six’	tʰotʂʰᶦum ‘decision’

All of the retroflex affricates in Gyegu Tibetan developed from <(C)(C)Cr> consonant clusters in Old Tibetan. The Gyegu Tibetan phoneme /dz/ developed from consonant clusters including ལྷ <sgra>, འལྷ <bgra>, and སྷ <sbra>. /tʂ/ developed from consonant clusters including འལྷ <bskra>, ལྷ <spra>, དྷ <dkra>. /tʂʰ/ developed from consonant clusters including ལྷ <pʰra>, ལྷ <tʰra>, and ལྷ <kʰra>. /tʂʰᶦ/ developed from the Old Tibetan consonant clusters of a voiced stop followed by <r>, including ལྷ <gra>, ལྷ <dra>, and ལྷ <bra>. These changes are also reflected in the Lab variety (Sun 2019).

Image (69) shows a waveform and spectrogram for /dz/. Note the voicing before the release of the stop and through the fricative. Also note the relatively low height of the  $f_0$  on the following diphthong.

- (69) /dza/ 'sound' waveform, spectrogram, and pitch track (female speaker) (Gyg-070-PH-Ts)

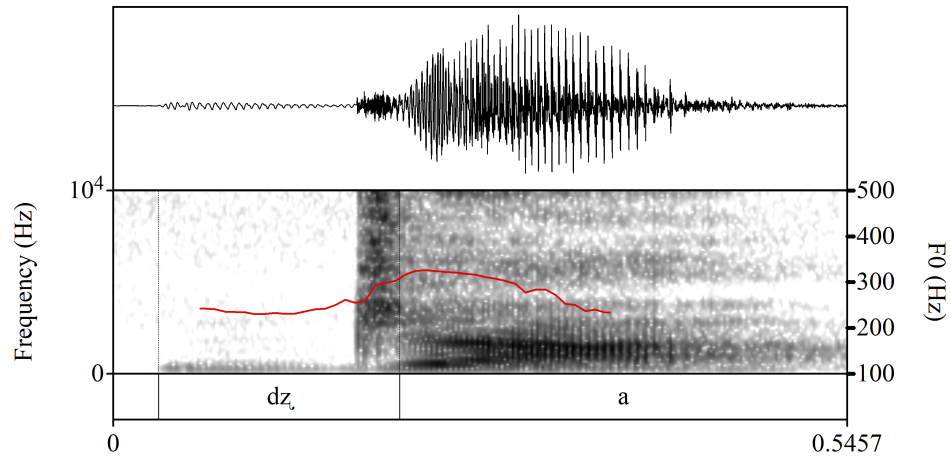


Image (70) shows a waveform and spectrogram for /tʃ/. Note the lack of voicing and the relatively short duration of the fricative portion. Also note the relatively high and falling  $f_0$  of the following vowel.

(70) /tʂa/ 'hair' waveform, spectrogram, and pitch track (female speaker) (Gyg-070-PH-Ts)

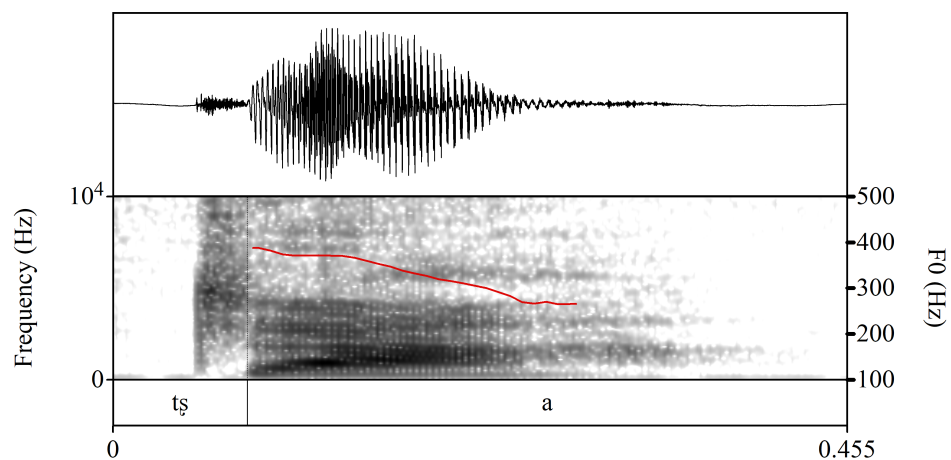


Image (71) shows the spectrum for the first portion of the vowel in /tʂa/ 'hair'. Note that the H1 and H2 are relatively similar, with H1 being slightly lower.

(71) Spectrum of /tʂa/ 'hair'

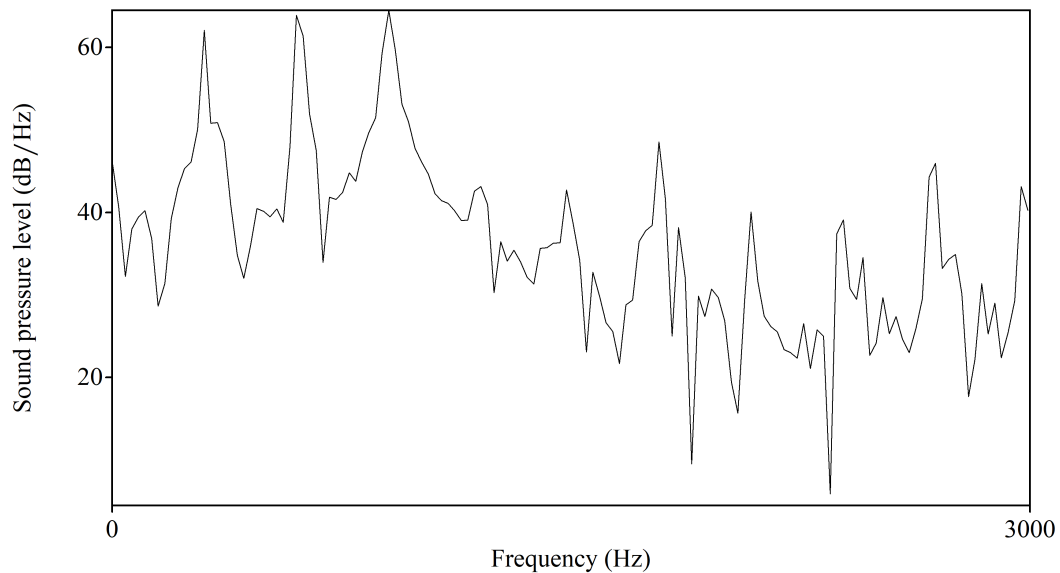


Image (72) shows a waveform and spectrogram for /tʂ<sup>h</sup>/. Note the lack of voicing, the relatively long duration of the fricative portion, and frequency changes of the fricative before vowel onset. Also note the relatively high  $f_0$  at vowel onset.

(72) /tʂʰɔʔ/ ‘blood’ waveform, spectrogram, and pitch track (female speaker)  
(Tsiren)

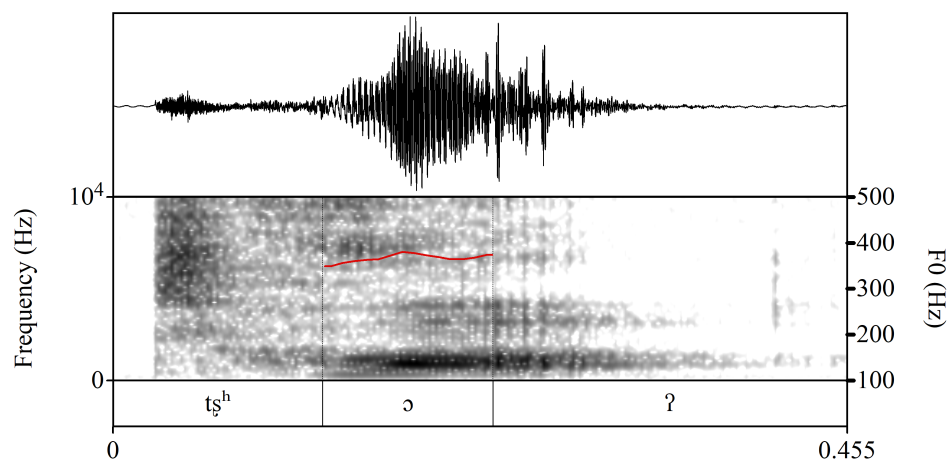


Image (73) shows the spectrum for the first portion of the vowel in /tʂʰɔʔ/ ‘blood’. Note that H1 is higher than H2.

(73) Spectrum of /tʂʰoʔ/ ‘blood’

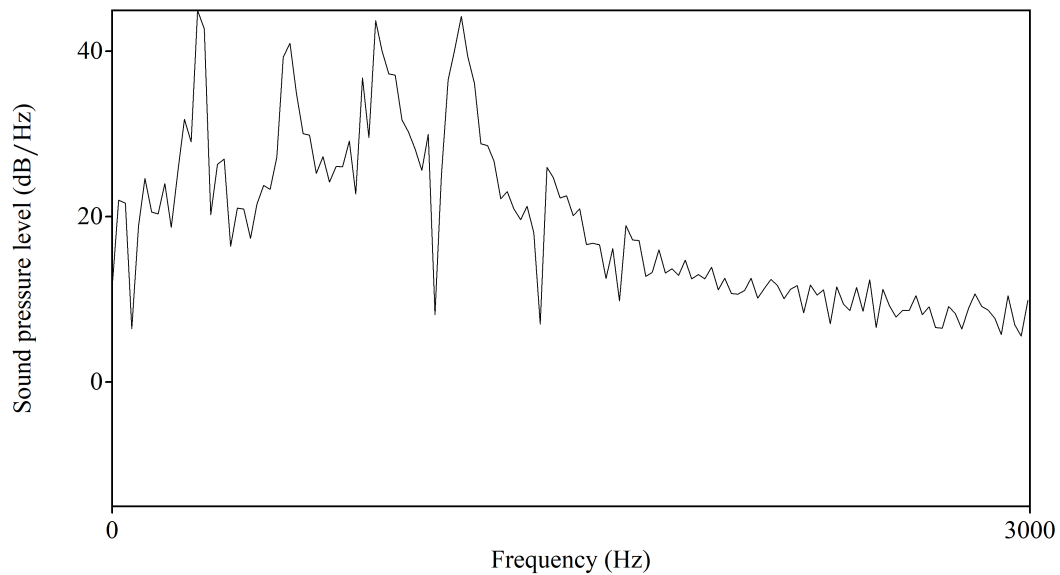


Image (74) shows a waveform and spectrogram for /tʂʰ/. Note the lack of voicing, that the duration of the fricative is longer than /tʂ/ and shorter than /tʂʰ/, and the relatively low  $f_0$  of the following vowel.

(74) /tʂʰa/ ‘cut’ waveform, spectrogram, and pitch track (female speaker) (Gyg-070-PH-Ts)

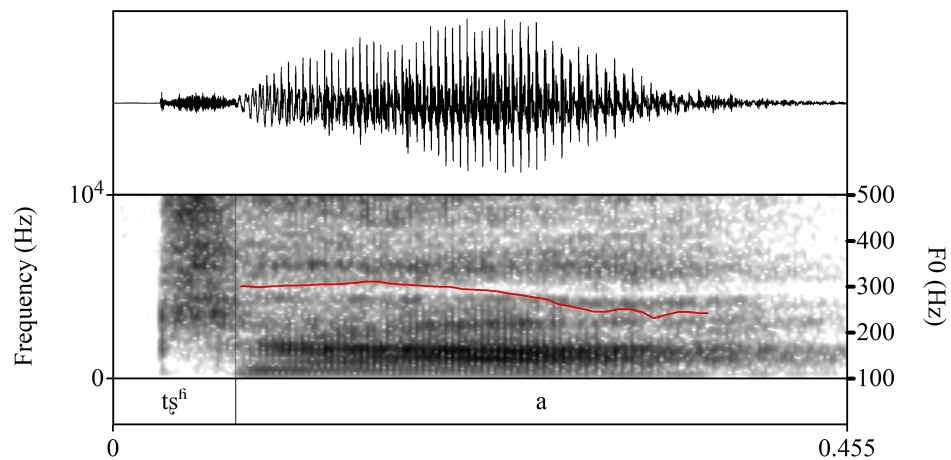
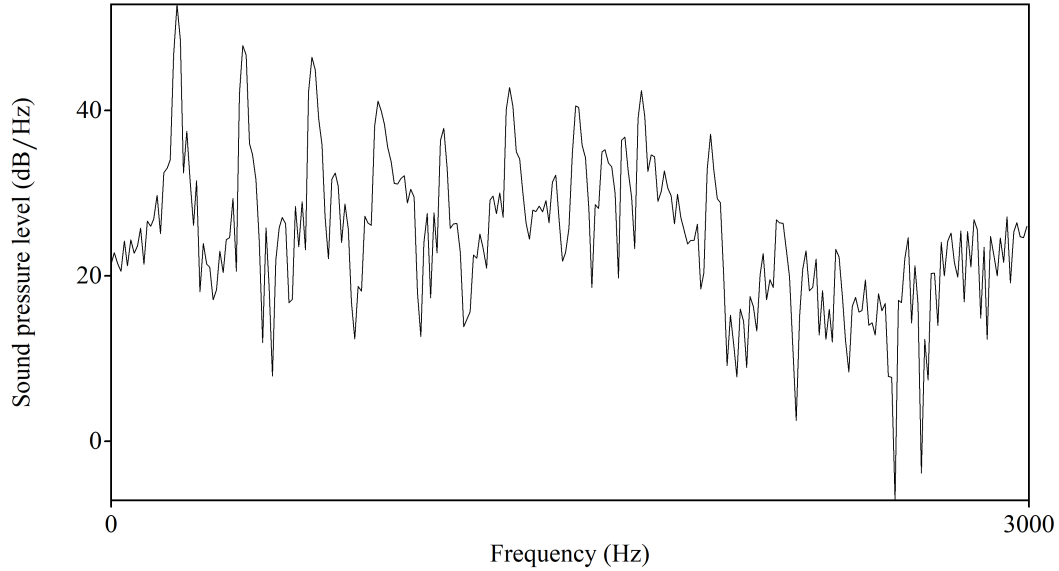


Image (75) shows the spectrum for the first portion of the vowel in /tʂʰa/ ‘cut’. Note that the H1 is higher than H2.

(75) Spectrum of /tʂ<sup>fi</sup>a/ ‘cut’



The waveforms and spectrograms above demonstrate that the primary contrasts between these phonemes lie in the duration of the fricative portion of the affricate, the presence or absence of voicing, the degree of breathiness on the following vowel as measured by H1-H2, and the height of  $f_0$  on the following vowel. These differences are summarized in (76).

(76) Table of phonetic differences in retroflex affricates

	dz <sub>l</sub>	tʂ	tʂ <sup>h</sup>	tʂ <sup>fi</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Fricative duration	NA	Short	Long	Intermediate
Spectral tilt	NA	H1<H2	H1>H2	H1>H2

### 2.2.7.3 Alveo-Palatal Affricates

The alveo-palatal affricates observed in Gyegu Tibetan are /dz/, /tɕ/, /tɕ<sup>h</sup>/, and /tɕ<sup>fi</sup>/. A table of example words containing alveo-palatal affricates is seen in (77). Alveo-palatal affricates do not appear word finally, and there are no instances of word medial /tɕ<sup>fi</sup>/ in the corpus.

(77) Table of alveo-palatal affricate phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
dz	dza ‘Chinese’	ədzo ‘noon’
tɕ	tɕoʔ ‘iron’	tɕətɕu ‘all the time’
tɕ <sup>h</sup>	tɕ <sup>h</sup> oʔ ‘ice’	ʔŋatɕ <sup>h</sup> ə ‘fifty’
tɕ <sup>fi</sup>	/tɕ <sup>fi</sup> a/ ‘ㄝ’ (letter of alphabet)	

The Gyegu Tibetan phoneme /dz/ developed from <(C)Cdz> consonant clusters in Old Tibetan such as བརྟམ <brdza> and རྟམ <rdza>. /tɕ/ developed from the single consonant ཅ <tɕa>, <Ctɕ> consonant clusters including བཅ <btɕa> and གཅ <gtɕa>, and <(C)(C)kj> clusters including བརྟམ <brkja>, དརྟམ <dkja>, and ྟ <kja>. /tɕ<sup>h</sup>/ is represented in the orthography by ར <tɕ<sup>h</sup>a>, and also developed from the Old Tibetan བཟ <mtɕ<sup>h</sup>a>. /ts<sup>fi</sup>/ developed from the Old Tibetan voiced alveo-palatal affricate རྟམ <dza>. These changes are also reflected in the Lab variety (Sun 2019).

Image (78) displays a waveform and spectrogram of /dz/. Note the voicing before the release of the stop and through the fricative. Also note the relatively low  $f_0$  on the following vowel.

- (78) /dʒa/ ‘Chinese’ waveform, spectrogram, and pitch track (female speaker)  
(Gyg-013-Syn-M)

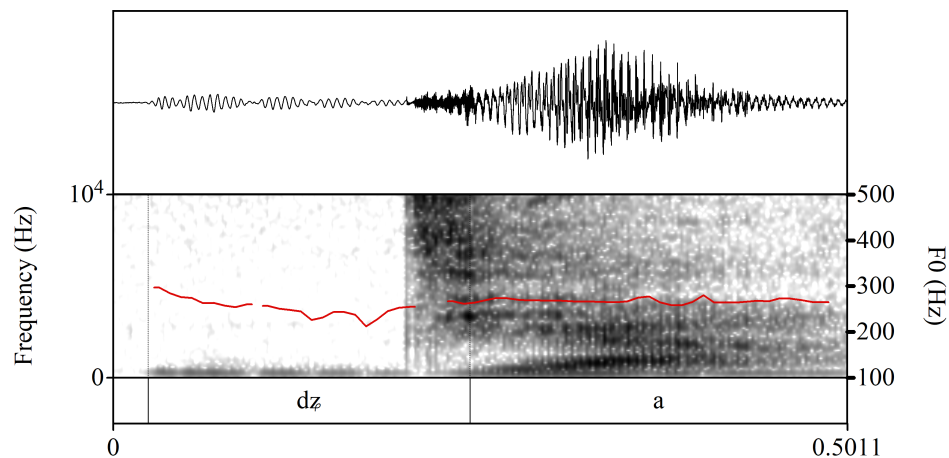


Image (79) displays a waveform and spectrogram of /tʃa/. Note the lack of voicing and the relatively short duration of the fricative portion. Also note the relatively high and falling  $f_0$  of the following vowel.

(79) /tɕa/ ‘ཅ’ (Letter of the Tibetan alphabet) waveform, spectrogram, and pitch track (female speaker) (Gyg-013-Syn-M)

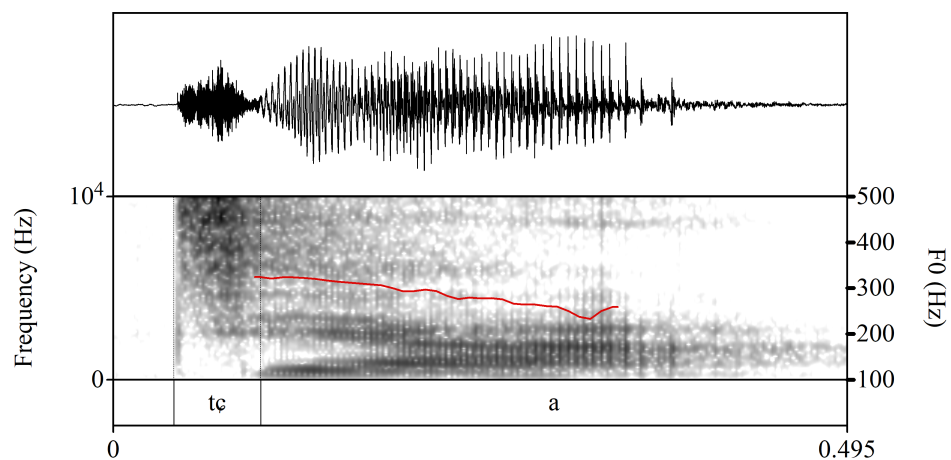


Image (80) shows the spectrum for the first portion of the vowel in /tɕa/ ‘ཅ’. Note that H1 is lower than H2.

(80) Spectrum of /tɕa/ ‘ɕ’ (Gyg-013-Syn-M)

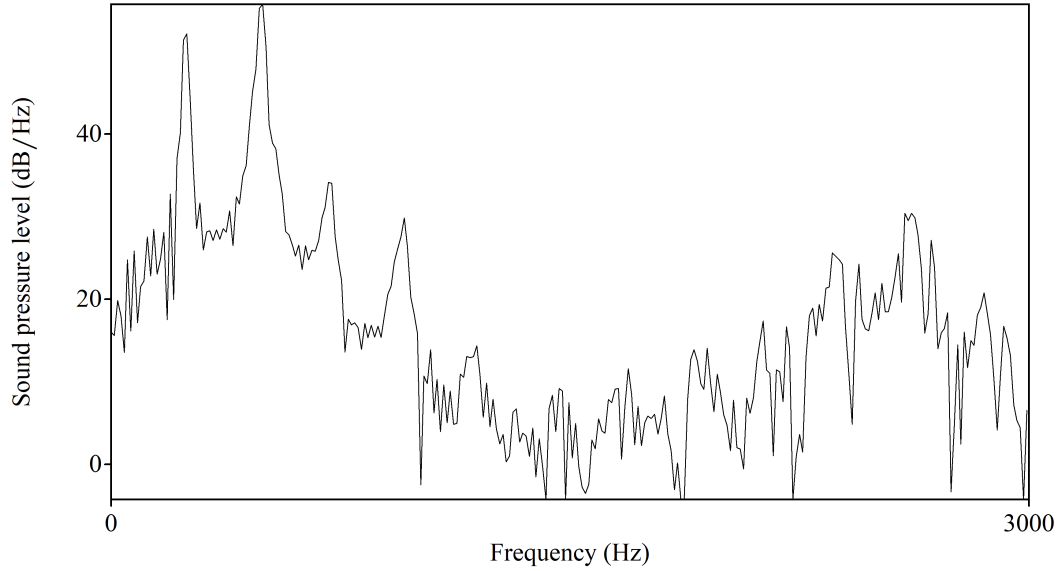


Image (81) displays a waveform and spectrogram of /tɕ<sup>h</sup>/. Note the lack of voicing, the long duration of the fricative portion relative to /tɕ/ and /tɕ<sup>h</sup>/, and the relatively high  $f_0$  at vowel onset. There is some glottalization near the end of the vowel. However, this is not phonemic.

(81) /tɕ<sup>h</sup>a/ ‘ཨ’ (Letter of the Tibetan alphabet) waveform, spectrogram, and pitch track (female speaker) (Gyg-013-Syn-M)

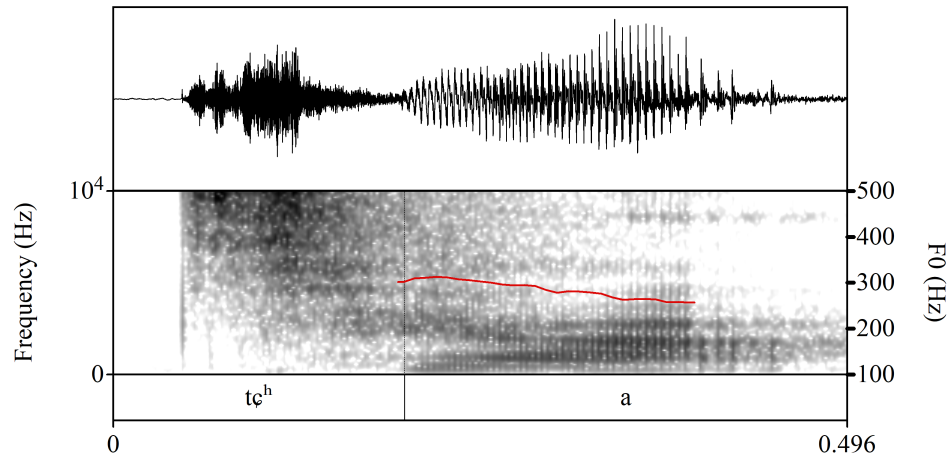


Image (82) shows the spectrum for the first portion of the vowel in /tɕ<sup>h</sup>a/ ‘ཨ’. Note that H1 and H2 are similar, with H1 slightly higher than H2.

(82) Spectrum of /tɕ<sup>h</sup>a/ ‘æ’ (Gyg-013-Syn-M)

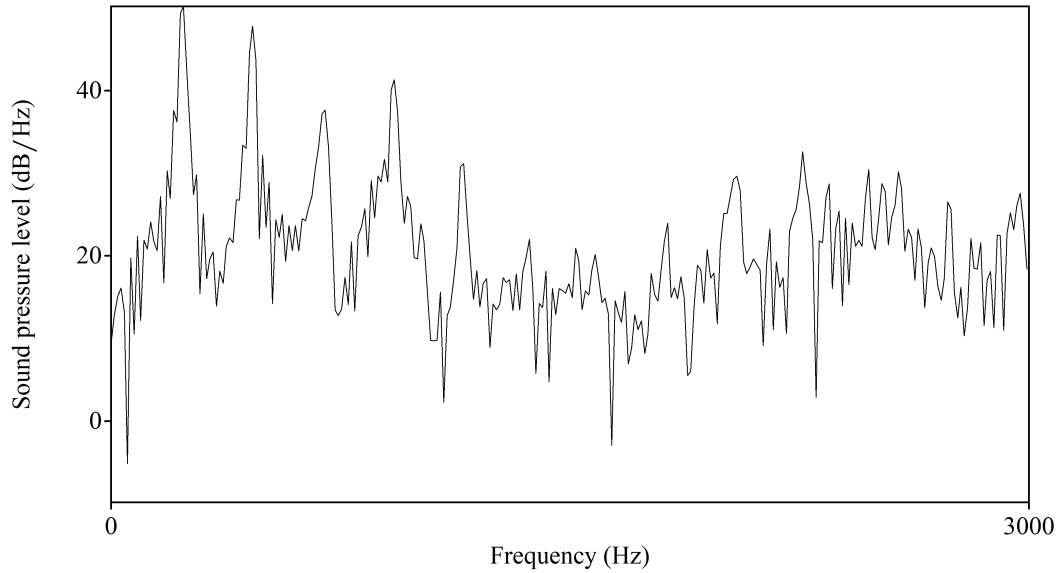


Image (83) displays a waveform and spectrogram of /tɕ<sup>h</sup>/ . Note the lack of voicing, that the duration of the fricative portion is longer than that of /tɕ/, and the relatively low  $f_0$  at vowel onset.

(83) /tɕʰa/ ‘ཁ’ (Letter of the Tibetan alphabet) waveform, spectrogram, and pitch track (female speaker) (Gyg-013-Syn-M)

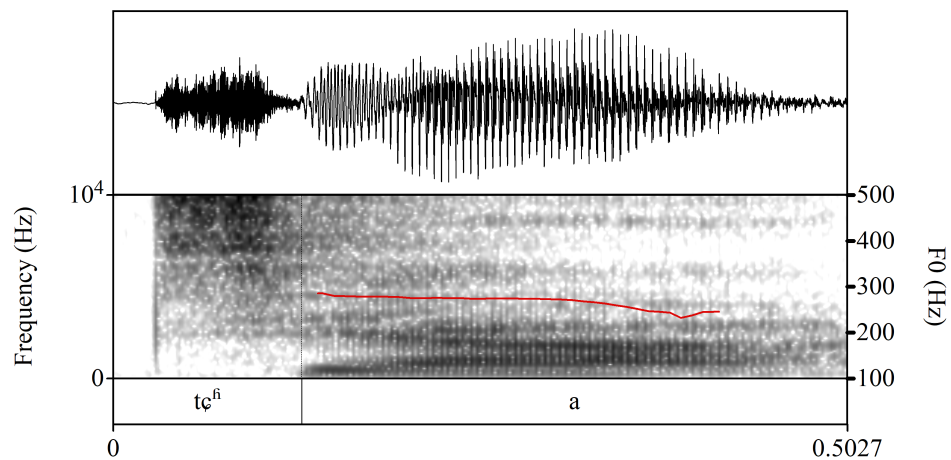
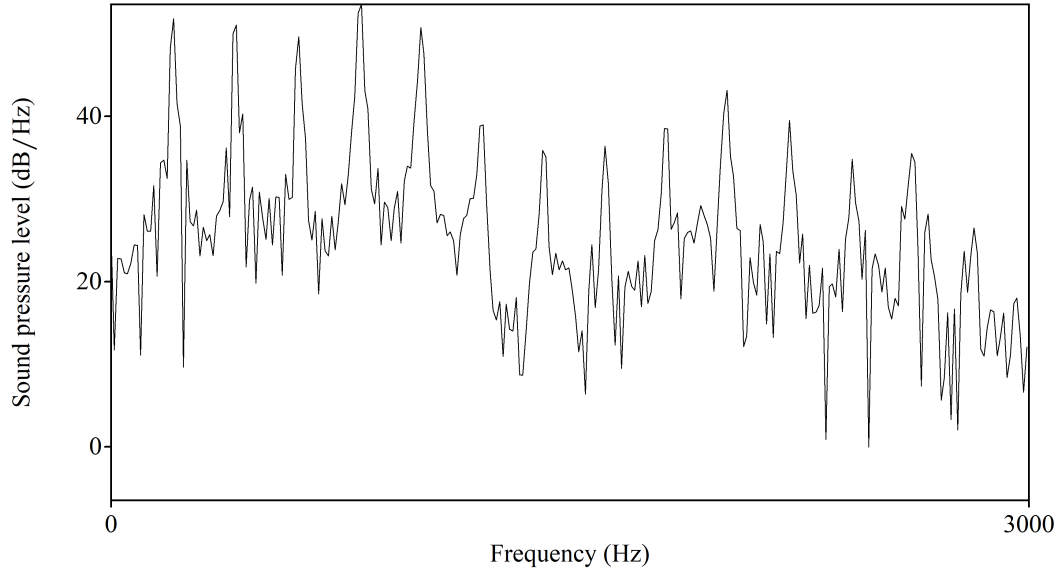


Image (84) shows the spectrum for the first portion of the vowel in /tɕʰa/ ‘ཁ’. Note that the H1 is slightly higher than H2.

(84) Spectrum of /tɕ<sup>h</sup>a/ ‘ $\xi$ ’ (Gyg-013-Syn-M)



The above waveforms and spectrograms demonstrate that the primary contrasts between these phonemes is voicing, duration of the fricative portion, the degree of breathiness on the following vowel as measured by H1-H2, and  $f_0$  contour of the following vowel. These differences are summarized in (85).

(85) Table of phonetic differences in alveo-palatal affricates

	dʒ	tɕ	tɕ <sup>h</sup>	tɕ <sup>fi</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Fricative duration	NA	Short	Long	Intermediate
Spectral tilt	NA	H1<H2	H1>H2	H1>H2

## 2.2.8 Stops

There is a four-way distinction in stops, with voiced, voiceless aspirated, tense, and breathy counterparts. This four-way distinction is present in the bilabial, alveolar, and velar stop series. There is also a glottal stop, which plays an important role in  $f_0$  phenomena, as discussed in detail in section 2.5.2.3. Previous authors including Huang et al. (1994) and Sun (2019) also found a three way distinction in voiceless stops in closely related varieties, which they label as aspirated, unaspirated, and breathy. Other authors including Suzuki (2011) found a distinction between aspirated and unaspirated voiceless stops in the dialect of “Khams” Tibetan spoken in the rGyalrong area, but did not observe a distinction between tense and breathy voiceless unaspirated stops.

Huang et al. (1994) and Sun (2019) discuss that the “voiceless breathy stops” in the Zaduo and Lab varieties are followed by a period of voiced breathy aspiration. However, this period of voiced aspiration is not observed in Gyegu Tibetan. Instead, the breathy stops in Gyegu Tibetan are followed by a vowel which is breathier than their tense counterparts. However, the H1 is typically close to H2 in vowels following breathy stops, indicating that while they are not fully breathy, they are breathier (and more lax) than their tense counterparts. Sun (2019) also discusses the fact that the tense and breathy unaspirated voiceless stops can be distinguished by the  $f_0$  of the following vowel. Vowels following breathy voiceless stops have a lower  $f_0$  than their modal counterparts. Therefore, these stops appear in different phonetic environments in complementary distribution. Sun (2019) states that it is possible to analyze this either as a tonal difference or as a phonemic difference of the syllable onset. These facts are also true in Gyegu Tibetan, where tense stops appear before high  $f_0$  vowels and breathy stops appear before low  $f_0$  vowels.

### 2.2.8.1 Glottal Stop

Glottal stops are observed in both the onset and coda position in Gyegu Tibetan. However, they are only phonemic as syllable codas, as exemplified by the minimal pair /ts<sup>h</sup>i/ ‘celebrate’ and /ts<sup>h</sup>iʔ/ ‘night’. A table of example words containing glottal stops is seen in (86).

(86) Table of glottal stop phoneme examples in Gyegu Tibetan

Phoneme:	Word Medial	Word Final
ʔ	tʂ <sup>h</sup> əʔtʂə ‘sixty’	suʔ ‘cow’ joʔ ‘good’

Image (87) displays a waveform and spectrogram of a glottal stop in the word initial position.

(87) /ar/ [ʔar] ‘America’ waveform, spectrogram, and pitch track (female speaker)  
(Tsiren)

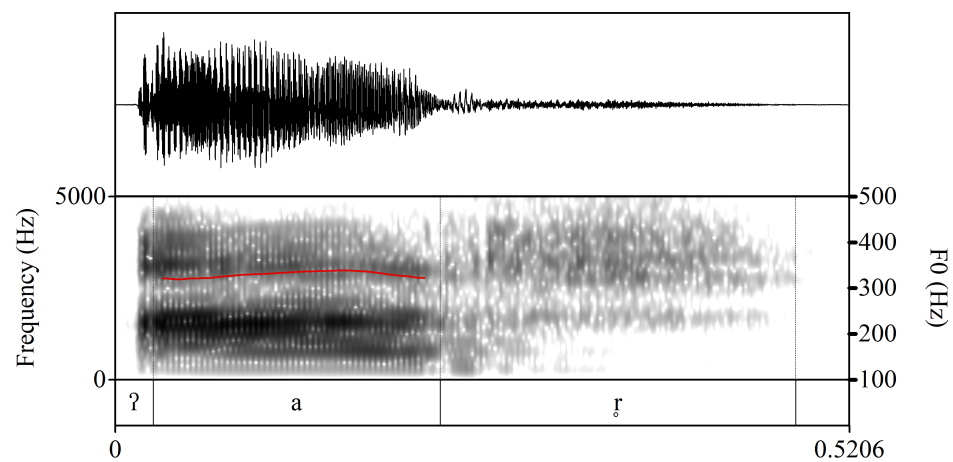
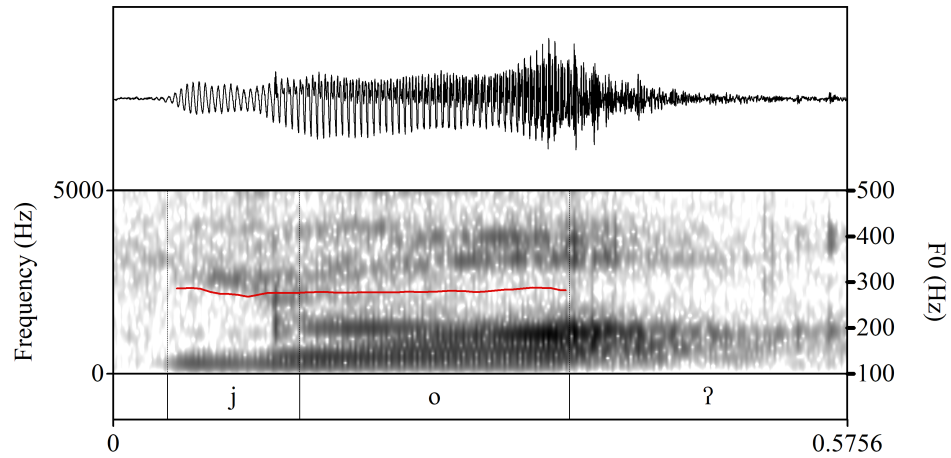


Image (88) displays a waveform and spectrogram of a glottal stop in the word final position.

- (88) /joʔ/ ‘good’ waveform, spectrogram, and pitch track (female speaker) (Gyg-003-WL-M)



### 2.2.8.2 Bilabial Stops

The bilabial stops observed in Gyegu Tibetan are /b/, /p/, /p<sup>h</sup>/, and /p<sup>f</sup>/. A table of example words containing alveolar stops is seen in (89). Bilabial stops do not occur in a word final position, unless word final schwa devoicing has occurred.

## (89) Table of bilabial stop phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
b	bi ‘snake’ bal ‘tortoise’	kabo ‘white’
p	pəmba ‘arm/elbow’ pa ‘pronunciation of the letter བ’	lapa ‘hand’
p <sup>h</sup>	p <sup>h</sup> ajə ‘hometown’ p <sup>h</sup> a ‘pronunciation of the letter བ’	k <sup>h</sup> ap <sup>h</sup> ar ‘phone’
p <sup>f</sup>	p <sup>f</sup> a ‘cow’ p <sup>f</sup> a ‘pronunciation of the letter བ’	lədzəp <sup>f</sup> ətɕan ‘shepherd’

The Gyegu Tibetan phoneme /b/ developed from <Cb> consonant clusters in Old Tibetan such as སྣ <sba> and རྣ <rba>. /p/ developed from both the single consonant བ <pa>, as well as <Cp> consonant clusters in Old Tibetan, including སྤ <spa> and རྤ <NPa>. /p<sup>h</sup>/ is represented in the orthography by བ <p<sup>h</sup>a> and remains unchanged from Old Tibetan. /p<sup>f</sup>/ developed from the Old Tibetan voiced bilabial བ <ba>. Similar changes are also reflected in the Lab variety (Sun 2019: 43).

Image (90) shows a waveform and spectrogram for a typical /b/. Note the voicing before the release of the stop. Also note the relatively low  $f_0$  at vowel onset.

- (90) /bal/ ‘tortoise’ waveform, spectrogram, and pitch track (female speaker)  
(Gyg-045-Ph-M)

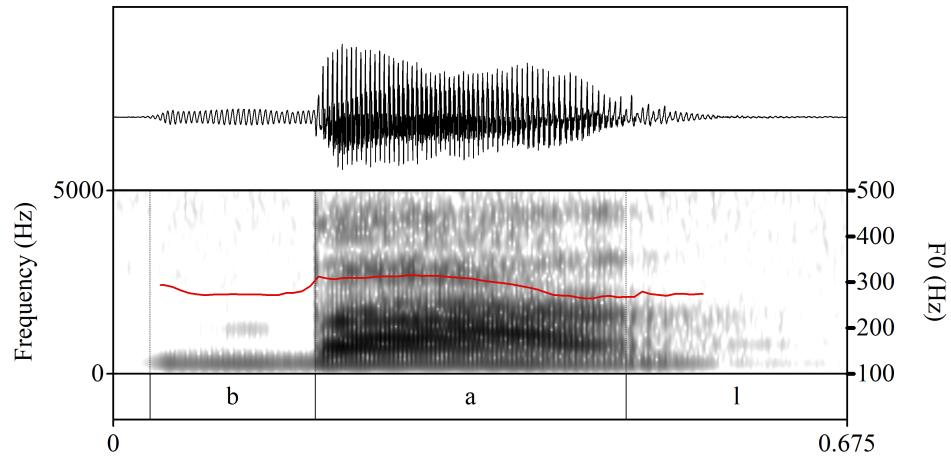


Image (91) shows a waveform and spectrogram for a typical /p/. Note the lack of voicing, short VOT, and the relatively high and falling  $f_0$  of the following vowel.

(91) /pa/ ‘pa’ (name of letter in the alphabet) waveform, spectrogram, and pitch track (female speaker) (Gyg-013-Syn-M)

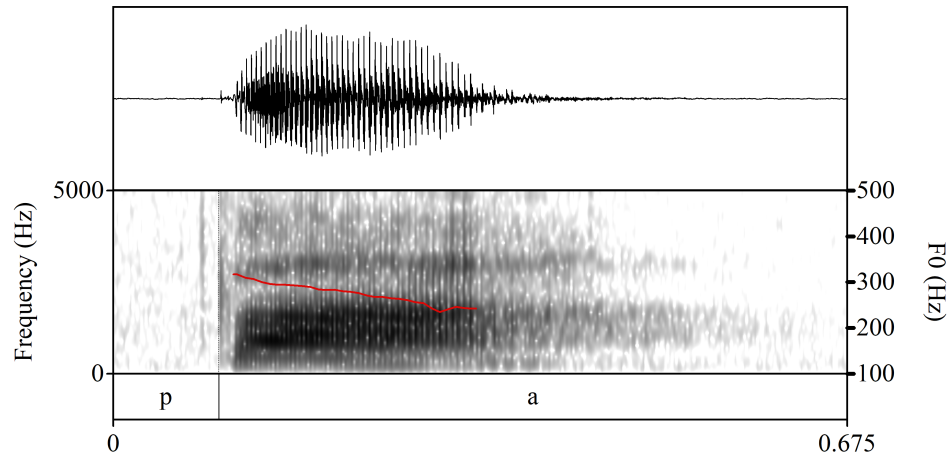


Image (92) shows the spectrum for the first portion of the vowel in /pa/ ‘pa’. Note that the H1 is lower than H2, as is typical for breaky or tense voice.

(92) Spectrum of /pa/ ‘ $\text{ᄃ}$ ’

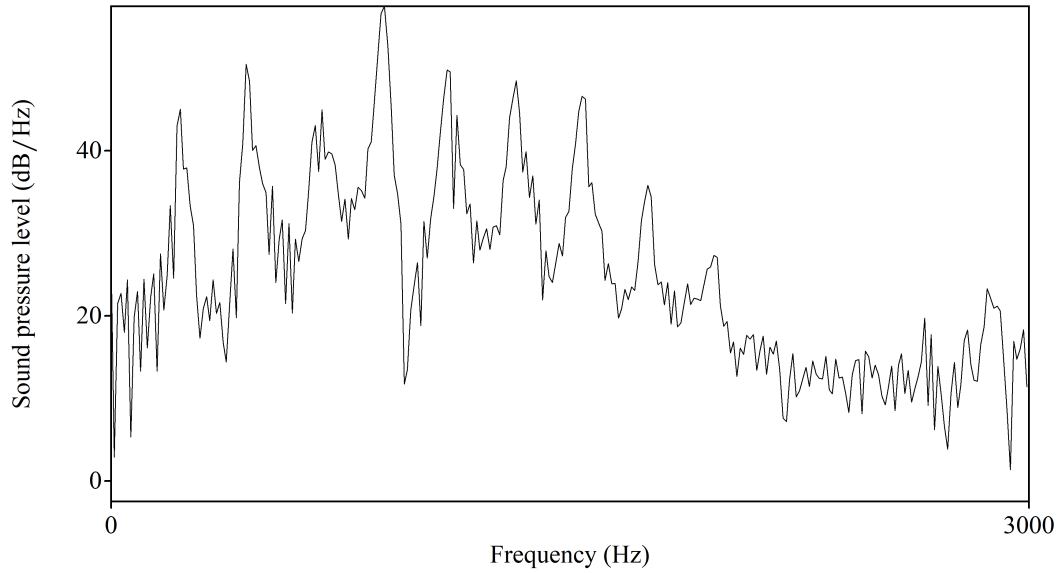


Image (93) shows a waveform and spectrogram for a typical /p<sup>h</sup>/. Note the lack of voicing, long VOT upon release of the stop, and the relatively high and falling  $f_0$  of the following vowel.

(93) /p<sup>h</sup>a/ ‘अ’ (name of letter in the alphabet) waveform, spectrogram, and pitch track (female speaker) (Gyg-013-Syn-M)

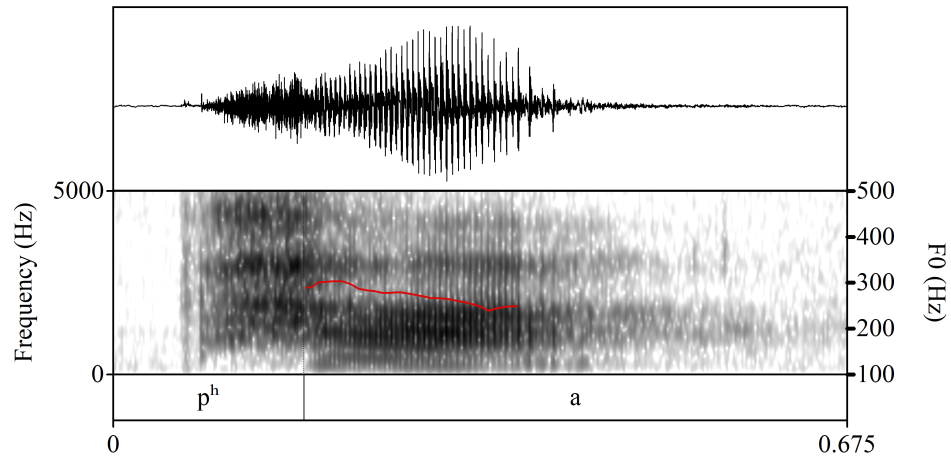


Image (94) shows the spectrum for the first portion of the vowel in /p<sup>h</sup>a/ ‘अ’. Note that the H1 and H2 are similar.

(94) Spectrum of /p<sup>h</sup>a/ ‘अ’

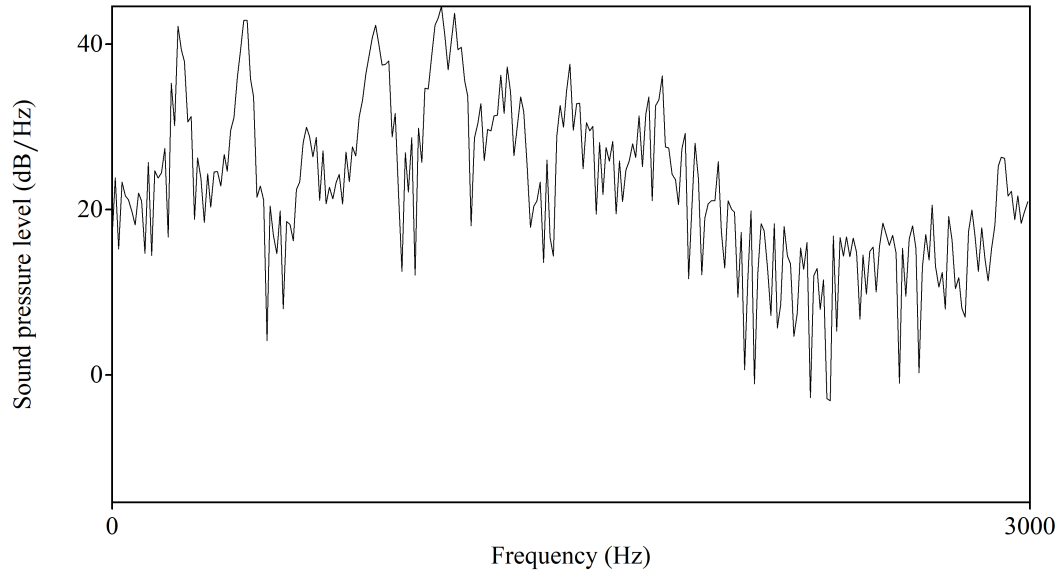


Image (95) shows a waveform and spectrogram for a typical /p<sup>h</sup>/. Note the lack of voicing, the short VOT, and the relatively low  $f_0$  of the following vowel.

(95) /p<sup>h</sup>a/ ‘**अ**’ (name of letter in the alphabet) waveform, spectrogram, and pitch track (female speaker) (Gyg-013-Syn-M)

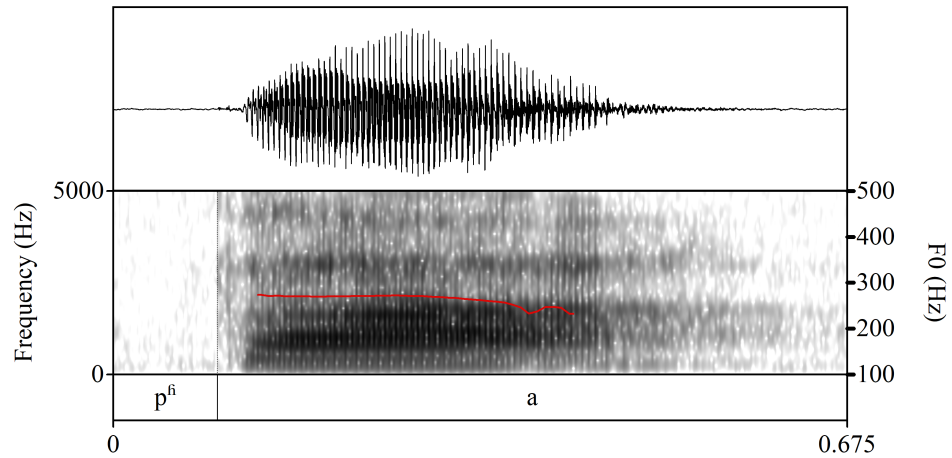
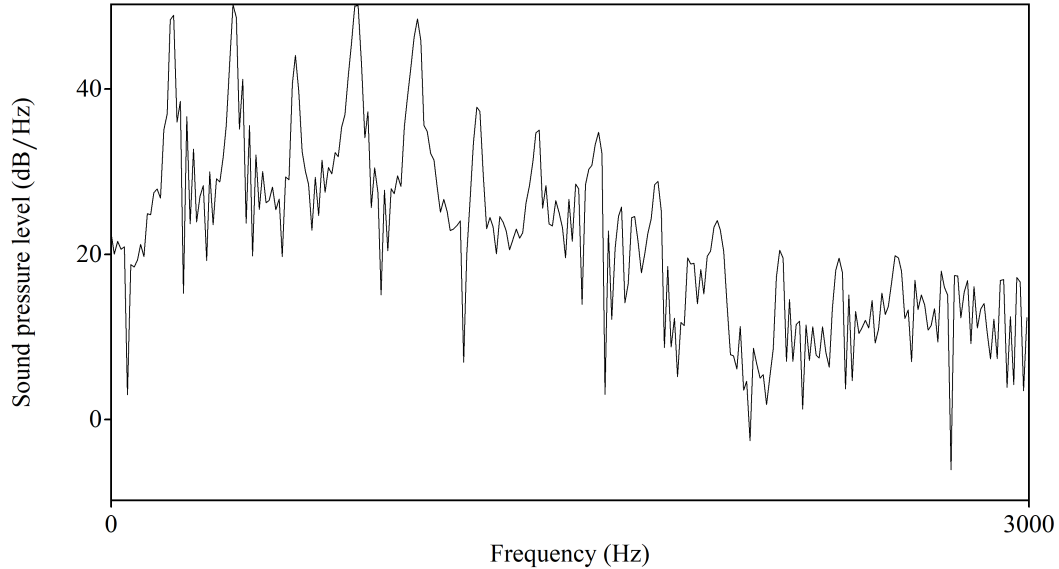


Image (96) shows the spectrum for the first portion of the vowel in /p<sup>h</sup>a/. Note that although the H1 and H2 are similar.

(96) Spectrum of /p<sup>h</sup>a/ ‘ᠨ’



The above waveforms and spectrograms demonstrate that the primary contrasts between these consonants are voicing, VOT, the degree of breathiness on the following vowel as measured by H1-H2, and  $f_0$  contour of the following vowel. These differences are summarized in (97).

(97) Table of phonetic differences in bilabial stops

	b	p	p <sup>h</sup>	p <sup>fi</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Spectral tilt	NA	H1<H2	H1≈H2	H1≈H2

### 2.2.8.3 Alveolar Stops

The alveolar stops observed in Gyegu Tibetan are /d/, /t/, /t<sup>h</sup>/, and /t<sup>fi</sup>/. A table of example words containing alveolar stops is seen in (98). Alveolar stops do

not occur word finally unless word final schwa devoicing has occurred.

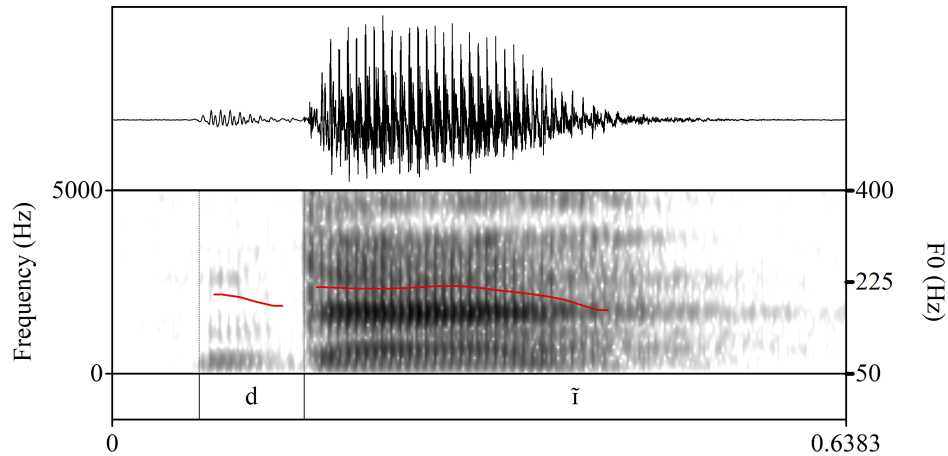
(98) Table of alveolar stop phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
d	diʔ ‘eight’ dm ‘seven’	rədoʔ ‘animal’
t	ta ‘horse’	t <sup>f</sup> ata ‘now’
t <sup>h</sup>	t <sup>h</sup> u ‘top’ t <sup>h</sup> a ‘boundary’	tijrt <sup>h</sup> ə ‘jacket’
t <sup>f</sup>	t <sup>f</sup> a ‘extinguish’	ŋət <sup>f</sup> əmbə ‘we’

The Gyegu Tibetan phoneme /d/ developed from <Cd> consonant clusters in Old Tibetan such as བད <bda> and རད <rda>. /t/ developed from both the single consonant ཏ <ta>, as well as <Ct> consonant clusters in Old Tibetan, including ལྷ <sta> and བཏ <bta>. /t<sup>h</sup>/ is represented in the orthography by ར <t<sup>h</sup>a> and remains unchanged from Old Tibetan. /t<sup>f</sup>/ developed from the Old Tibetan voiced alveolar ད <da>. Similar changes are also reflected in the Lab variety (Sun 2019: 43).

Image (99) displays a waveform and spectrogram of /d/. Note the voicing before the release of the stop.

- (99) /dm/ [dĩ] ‘seven’ waveform, spectrogram, and pitch track (male speaker)  
(Gyg-062-Syn-D)



As seen above in (99), there is a significant amount of voicing before the stop release in voiced stops. The  $f_0$  on vowels following voiced stops is typically low. However, this is variable. When looking at closely related varieties of Tibetan, authors disagree on whether syllables with voiced stop onsets should be classified as high or low tone<sup>7</sup>. Describing the Dege dialect, Häslér (1999) labels syllables with voiced stop onsets as high tone. However, Sun (2019) describes them as low tone in the Lab dialect.

Image (100) displays a waveform and spectrogram for /t/. Note the lack of voicing before the release of the stop, the short VOT, and the relatively high and falling  $f_0$  of the following vowel.

<sup>7</sup> $f_0$  phenomena of related dialects and Gyegu Tibetan are discussed in detail in 2.5.

- (100) /ta/ 'horse' waveform, spectrogram, and pitch track (male speaker) (Gyg-030-PH-WU)

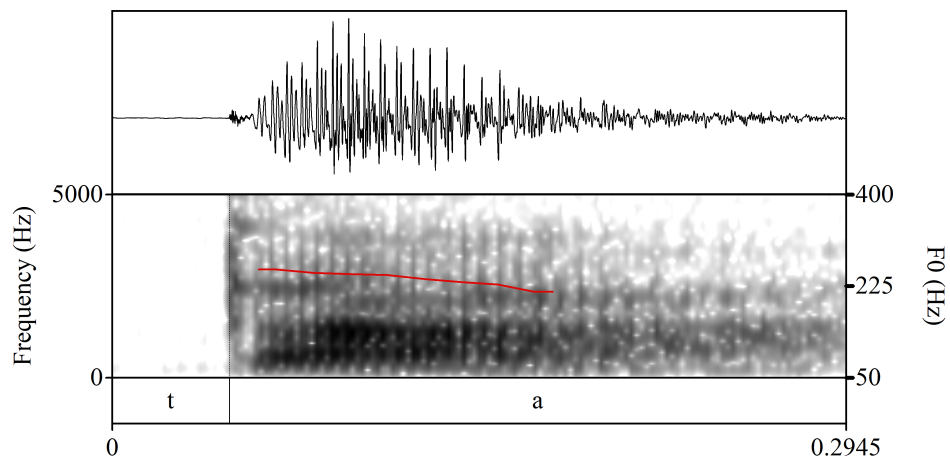


Image (101) shows the spectrum for the first portion of the vowel in /ta/ 'horse'. Note that the H1 is lower than H2.

(101) Spectrum of /ta/ 'horse'

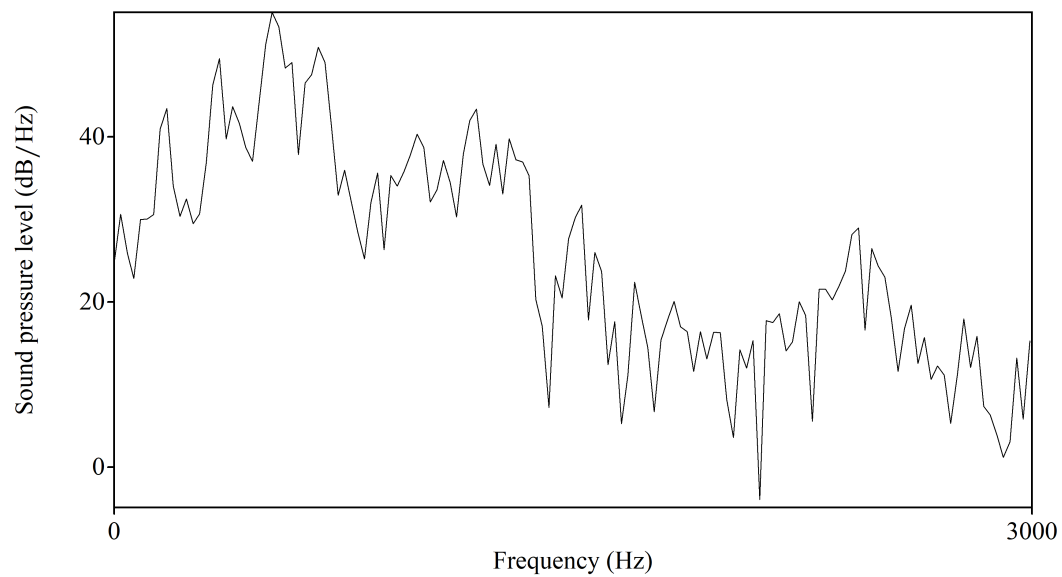


Image (102) displays a waveform and spectrogram of /t<sup>h</sup>/. Note the lack of voicing, short VOT, and low  $f_0$  of the following vowel.

- (102) /t<sup>h</sup>a/ ‘extinguish’ waveform, spectrogram, and pitch track (male speaker)  
(Gyg-030-PH-WU)

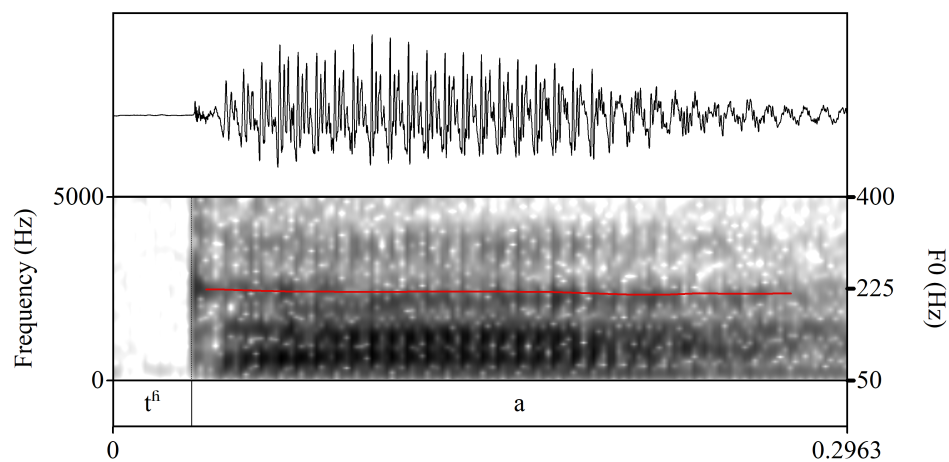


Image (103) shows the spectrum for the first portion of the vowel in /t<sup>h</sup>a/ ‘extinguish’. Note that the H1 is slightly higher than H2, suggesting less longitudinal tension of the vocal folds typical of breathy consonants.

(103) Spectrum of /t<sup>h</sup>a/ 'extinguish'

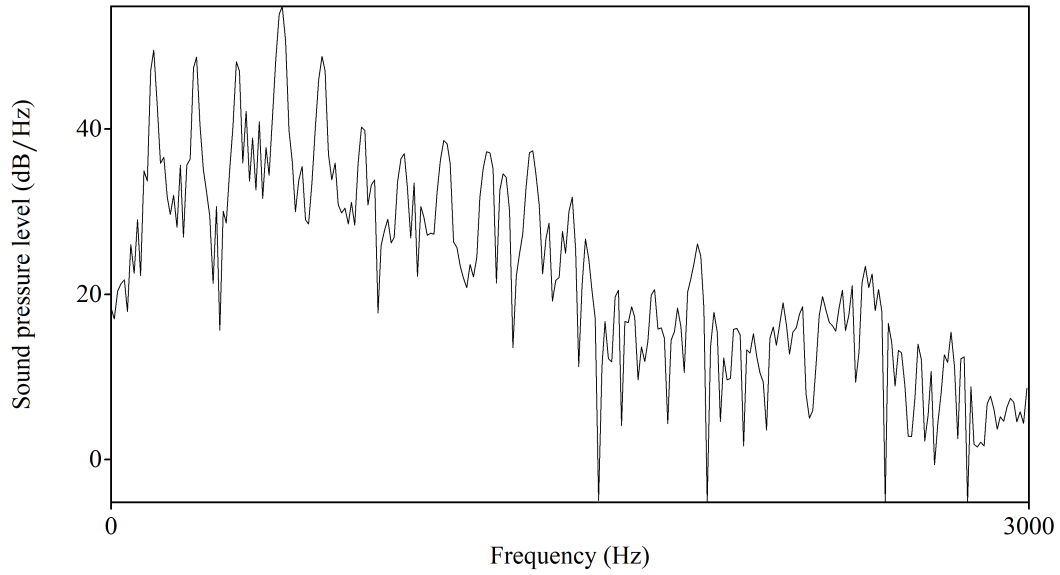
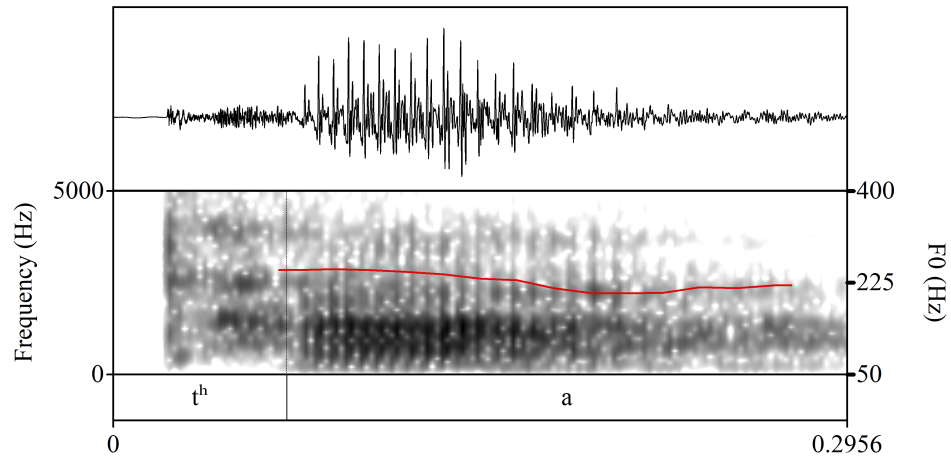


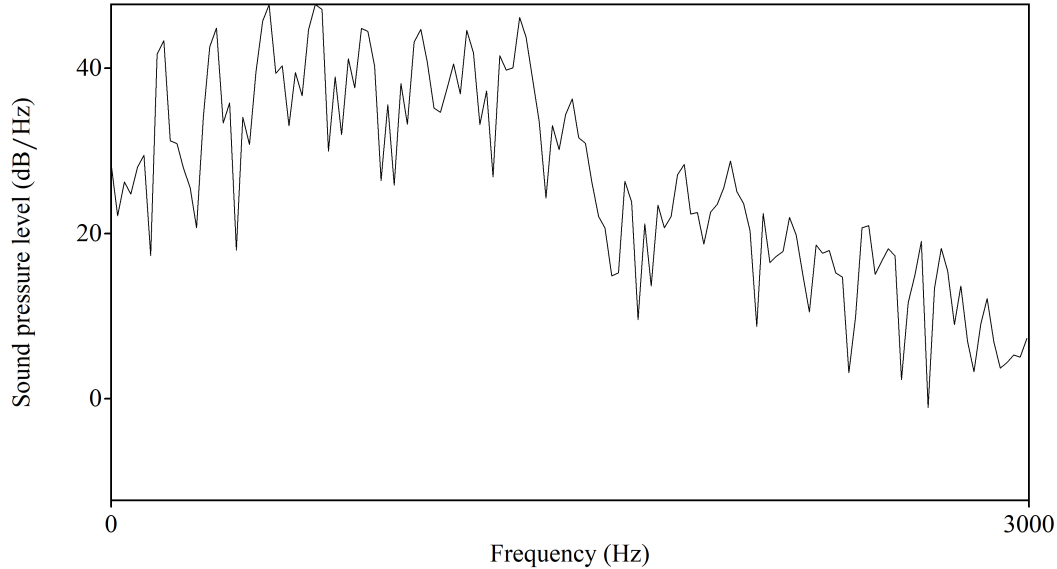
Image (104) displays a waveform and spectrogram of /t<sup>h</sup>a/ 'boundary'. Note the lack of voicing, long VOT, and relatively high  $f_0$  of the following vowel.

- (104) Waveform and spectrogram of /t<sup>h</sup>a/ ‘boundary’ (male speaker) (Gyg-030-PH-WU)



Voiceless aspirated stops have the longest VOT of the voiceless stop series. Like tense voiceless unaspirated stops, the  $f_0$  on the following vowel starts high. Spectral tilt on vowels following voiceless aspirated stops is lower than that of their breathy (lax) counterparts. As seen in (105), H1 and H2 are similar, with H1 slightly lower than H2.

(105) Spectrum of /t<sup>h</sup>/ ‘boundary’ (Gyg-030-PH-WU)



The waveforms and spectrograms above illustrate that the primary distinctions between these phonemes lie in voicing, VOT, the degree of breathiness on the following vowel as measured by H1-H2, and  $f_0$  height. These differences are summarized in (106).

(106) Table of phonetic differences in alveolar stops

	d	t	t <sup>h</sup>	t <sup>fi</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Spectral tilt	NA	H1<H2	H1≈H2	H1≈H2

#### 2.2.8.4 Velar Stops

The velar stops observed in Gyegu Tibetan are /g/, /k/, /k<sup>h</sup>/, and /k<sup>fi</sup>/. A table of example words containing velar stops is seen in (107). Velar stops do not occur

word finally.

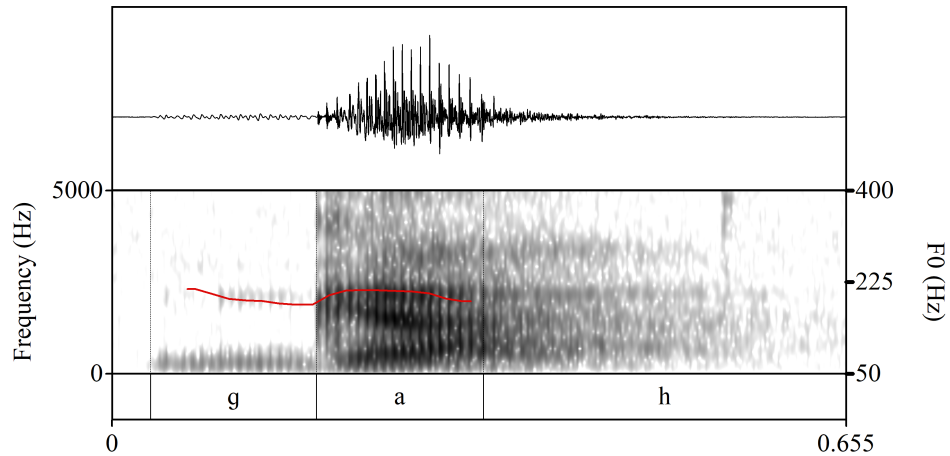
(107) Table of stop phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
g	gomo ‘evening’ ga ‘saddle’	rugun ‘rabbit’
k	kɪ ‘neck’ ka ‘command’	jəkɪ ‘book’ peku ‘Tibetan clothes’
k <sup>h</sup>	k <sup>h</sup> ɪl ‘hip’ k <sup>h</sup> a ‘mouth’	p <sup>h</sup> ak <sup>h</sup> a ‘next to’
k <sup>fi</sup>	k <sup>fi</sup> a ‘split’	

The Gyegu Tibetan phoneme /g/ developed from <Cg> consonant clusters in Old Tibetan such as བག <bga> and རག <rga>. /k/ developed from both the single consonant ཀ <ka>, as well as <Ck> consonant clusters in Old Tibetan, including སྐ <ska> and བཀ <bka>. /k<sup>h</sup>/ is represented in the orthography by ར <k<sup>h</sup>a> and remains unchanged from Old Tibetan. /k<sup>fi</sup>/ developed from the Old Tibetan voiced velar stop ག <ga>. Similar changes are also reflected in the Lab variety (Sun 2019: 43).

Image (108) shows a waveform and spectrogram of /g/. Note the voicing before the release of the stop and the relatively low  $f_0$  of the following vowel.

- (108) Waveform and spectrogram of /ga/ ‘saddle’(male speaker) (Gyg-042-WL-WU)



Intervocally, /g/ sometimes surfaces as the allophone [ɣ]. This is observed in words such as /rugun/ [ruɣun] ‘rabbit’ and /əɾəgə/ [əɾəɣə] ‘okay’. A spectrogram showing the allophone [ɣ] intervocally is presented in 2.2.5.

Image (109) shows a waveform and spectrogram of /k/. Note the lack of voicing, the short VOT, and the high falling  $f_0$  of the following vowel.

- (109) Waveform and spectrogram of /ka/ ‘ $\pi$ ’ ‘command’ (male speaker) (Gyg-030-PH-WU)

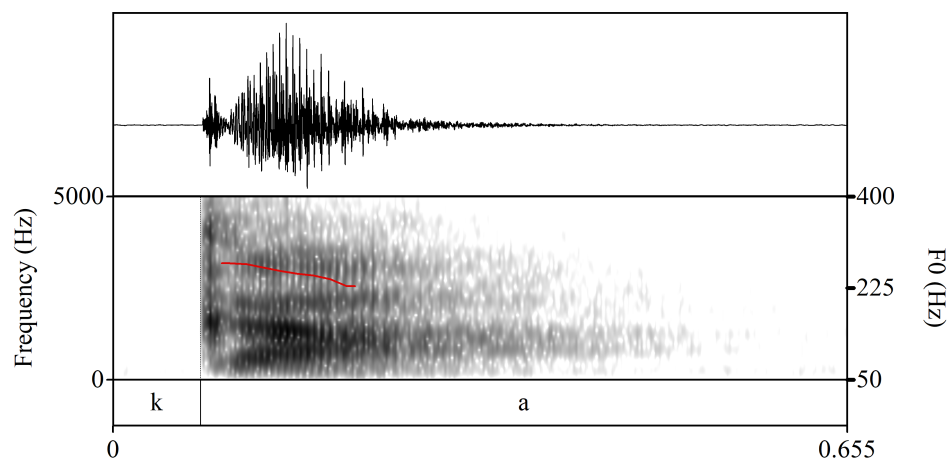


Image (110) shows the spectrum for the first portion of the vowel in /ka/ ‘ $\pi$ ’ ‘command’. Note that the H1 is lower than H2, indicating tight vocal fold adduction.

(110) Spectrum of /ka/ ‘ $\pi$ ’ ‘command’

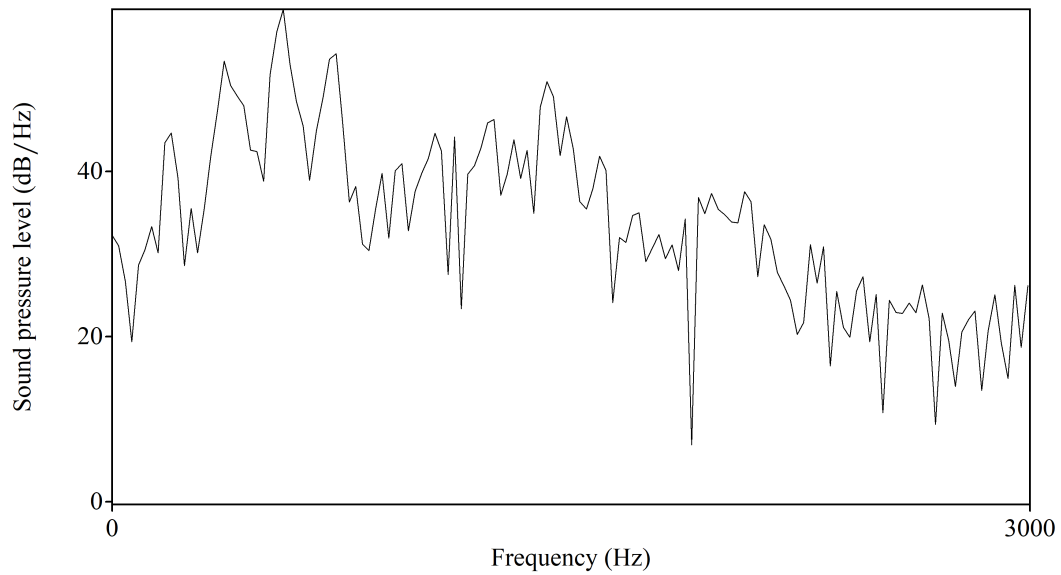


Image (111) shows a waveform and spectrogram for a typical /k<sup>h</sup>/. Note the lack of voicing, long VOT, and high falling  $f_0$  of the following vowel.

- (111) Waveform and spectrogram of /k<sup>h</sup>a/ ‘mouth’ (male speaker) (Gyg-030-PH-WU)

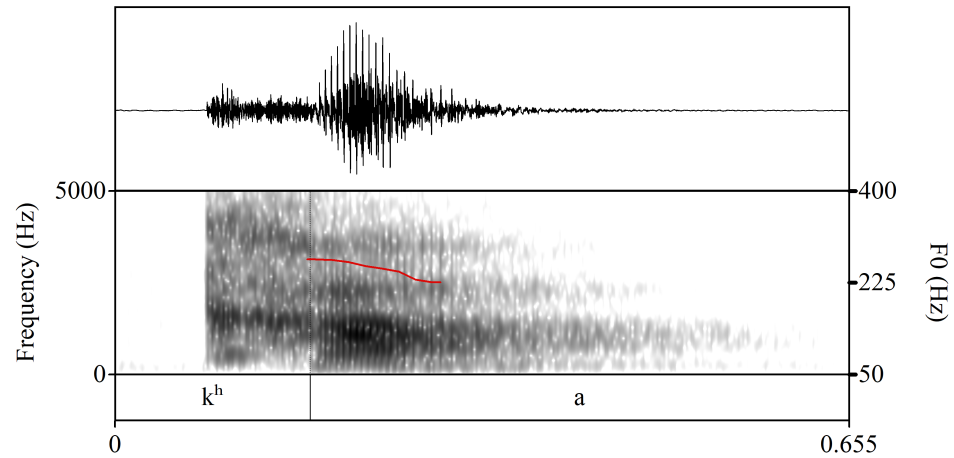


Image (112) shows the spectrum for the first portion of the vowel in /k<sup>h</sup>a/ ‘mouth’. Note that the H1 and H2 are similar.

(112) Spectrum of /k<sup>h</sup>a/ ‘ $\text{ᄀ}$ ’ ‘mouth’

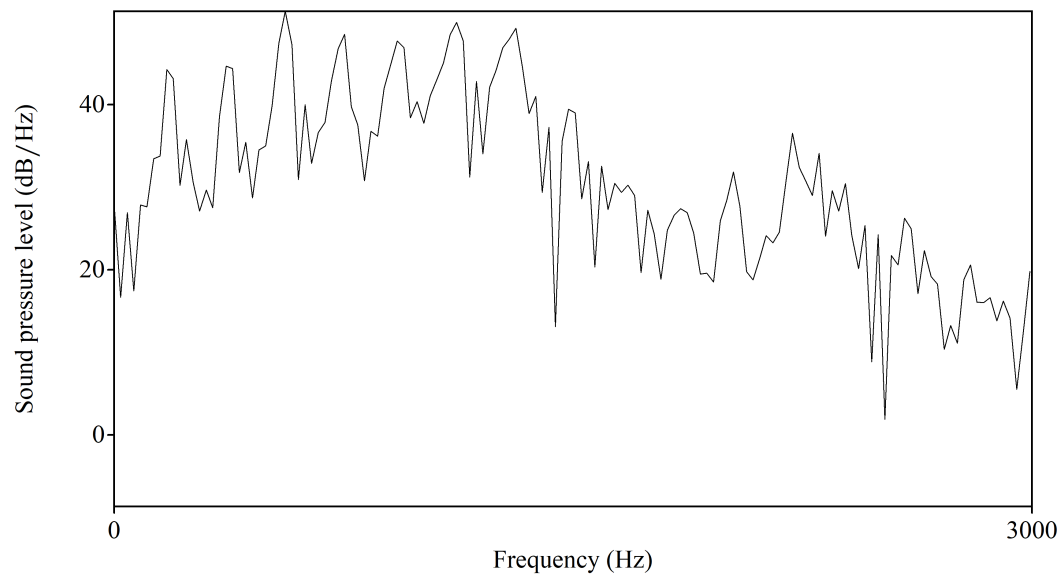


Image (113) shows a waveform and spectrogram for a typical /k<sup>h</sup>/. Note the lack of voicing, short VOT, and low  $f_0$  of the following vowel.

- (113) Waveform and spectrogram of /k<sup>h</sup>a/ ‘ $\text{ṣ}$ ’ ‘split’ (male speaker) (Gyg-030-PH-WU)

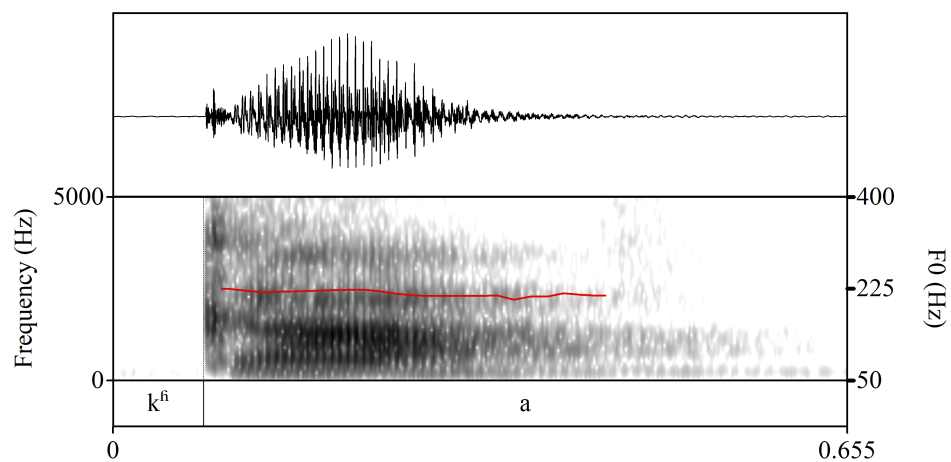
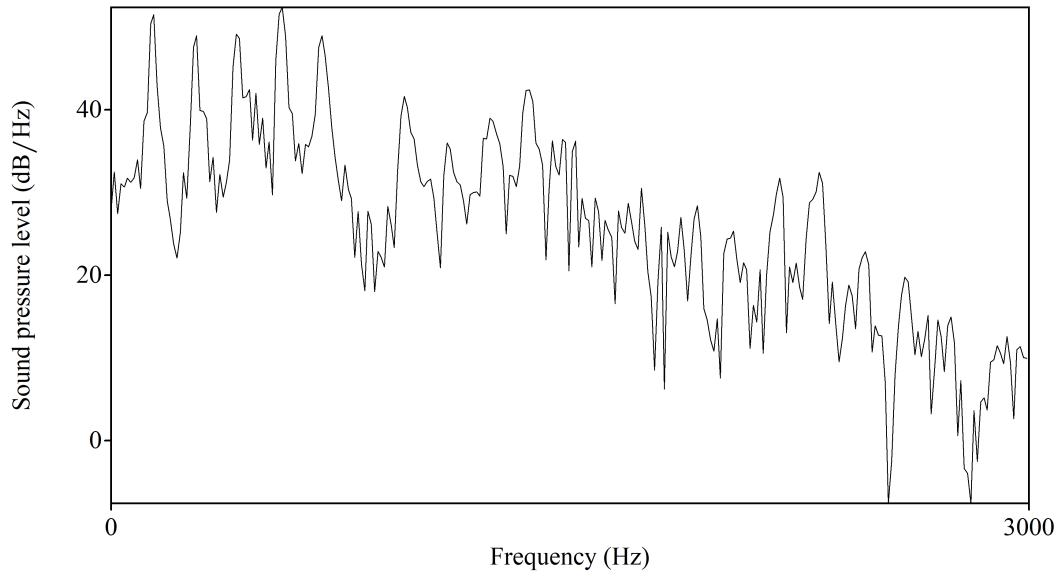


Image (114) shows the spectrum for the first portion of the vowel in /k<sup>h</sup>a/ ‘ $\text{ṣ}$ ’ ‘split’. Note that the H1 is higher than H2.

(114) Spectrum of /k<sup>h</sup>a/ ‘क्’ ‘split’



The above waveforms and spectrograms illustrate that the primary distinctions between these phonemes lie in voicing, voice onset time, the degree of breathiness on the following vowel as measured by H1-H2, and  $f_0$  height. These differences are summarized in (115).

(115) Table of phonetic differences in velar stops

	d	t	t <sup>h</sup>	t <sup>h</sup>
Voicing	voiced	voiceless	voiceless	voiceless
$f_0$ on vowel onset	L	H	H	L
Aspiration	No	No	Yes	No
Spectral tilt	NA	H1<H2	H1≈H2	H1≈H2

## 2.2.9 Prenasalized Stops and Affricates

In Gyegu Tibetan, prenasalized stops and affricates are found in the onset position<sup>8</sup>. These are analyzed as unary segments, and therefore conform with the proposed (C)V(C) syllable structure in 2.4. Although preglottalization is observed in all places of articulation for simplex nasal consonants, it is not observed in the prenasalized stops and affricates.

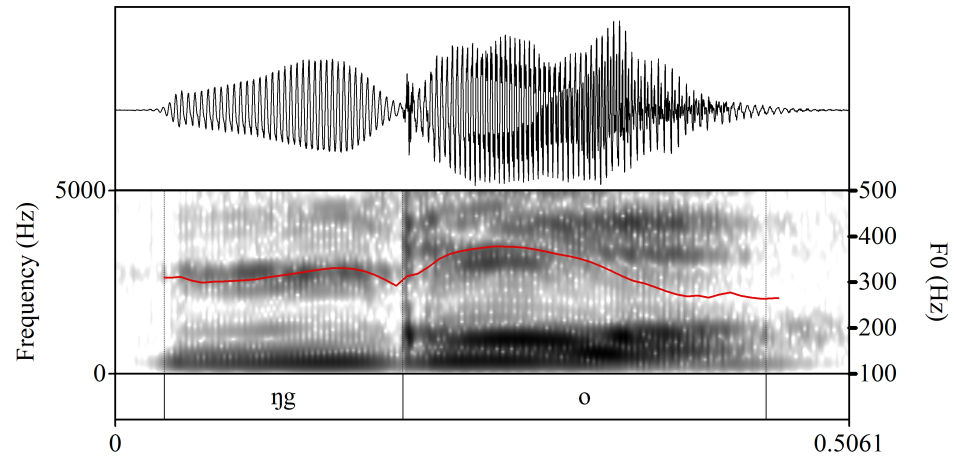
(116) Table of prenasalized stop and affricate phoneme examples in Gyegu Tibetan

Phoneme:	Word Initial	Word Medial
mb	mboʔ ‘mask’	pembo ‘scholar’
nd	nda ‘read’	çanduʔ ‘light brown’
ŋg	ŋguʔ ‘vaccine’ ŋgo ‘head’	ç <sup>h</sup> aŋgo ‘hat’
ndz	ndzaçɿ ‘thicket’	səndze ‘Sendze’ (town in Yushu)
ndz̥	ndzɿ ‘ghost’	
ndz̥	ndza ‘rainbow’	sandzɿ ‘news’

Image (117) displays a waveform and spectrogram of a prenasalized stop in word-initial position.

<sup>8</sup>Prenasalized affricates are also found word finally if word final schwa devoicing has occurred.

(117) Prenasalized stop in syllable onset /ŋgo/ ‘head’ (female speaker) (Tsiren)



The spectrogram and waveform in (118) show a prenasalized affricate in word-initial position.

- (118) Prenasalized affricate in syllable onset /ndzaçın/ [ndzaçi̯] ‘thicket’ (female speaker) (Tsiren)

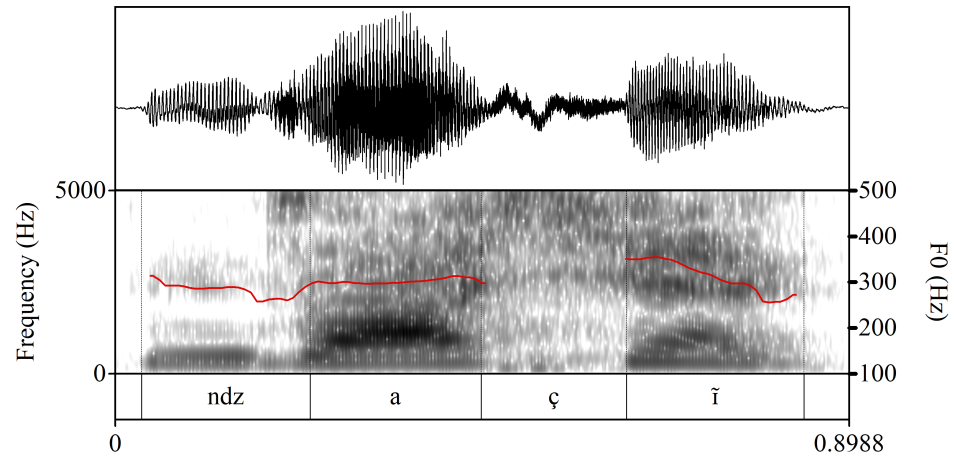
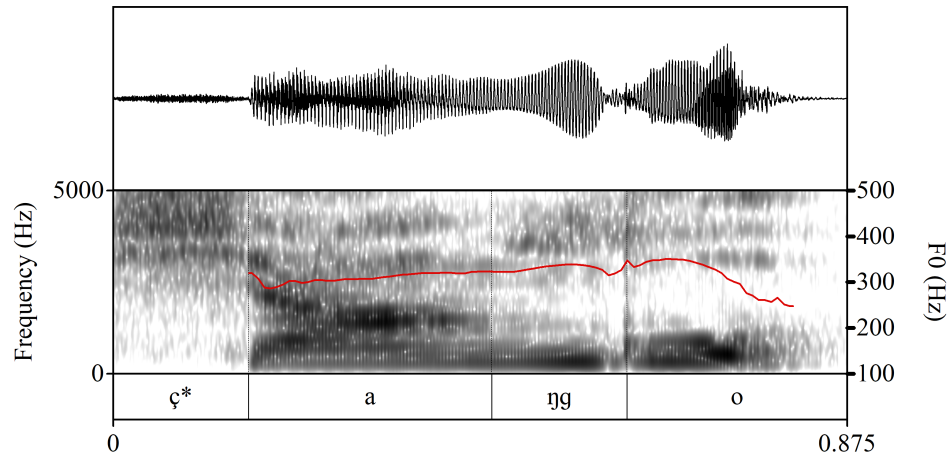


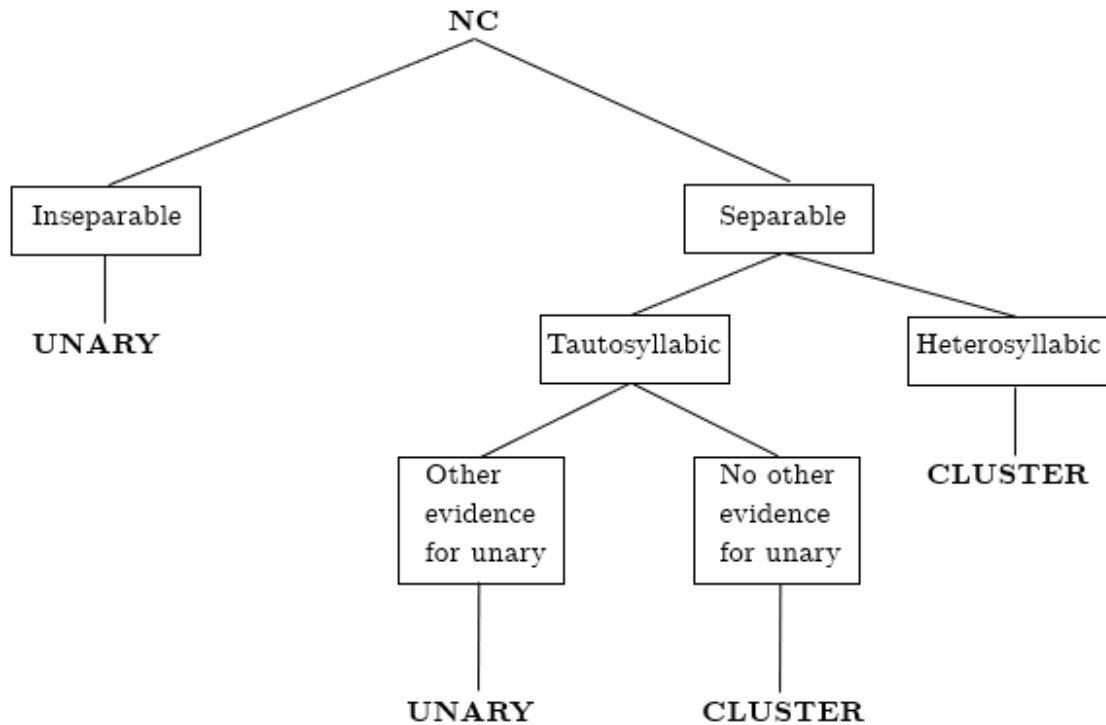
Image (119) displays a waveform and spectrogram of a prenasalized stop in a word-medial position.

(119) Prenasalized stop word medially in /çaŋgo/ ‘hat’ (female speaker) (Tsiren)



Riehl's (2008) dissertation proposes criteria to determine whether prenasalized stops are unary segments or clusters. The criteria can be seen in (120).

(120) Riehl's (2008: 15) unary vs cluster criteria



In Gyegu Tibetan, prenasalized stops and affricates are “separable”, meaning that nasals, stops, and affricates may occur in isolation. Following Riehl’s (2008) criteria, it is then necessary to consider whether NC sequences are tautosyllabic or heterosyllabic. In Gyegu Tibetan, NC sequences occur as onsets word initially, in addition to word medially. Word-initial onsets are clearly tautosyllabic, while word-medial sequences are also tautosyllabic following the maximum onset principle, developed from Kahn’s (1976) dissertation. Therefore, I analyze NC sequences as tautosyllabic in Gyegu Tibetan. Finally, we must consider all other evidence in favor of either a unary or cluster analysis. Another consideration is that if NC sequences are clusters, then they are the only complex onset allowed in the language. It is simpler to consider them unary segments that conform to the phonotactics of other syllables. Another piece of evidence in favor of a unary analysis is the variable

pronunciation of the nasal in NC sequences. Often, the nasal is reduced and hardly pronounced. The nasal portion is occasionally so reduced that L2 learners of the language often have difficulty distinguishing between phonemes such as /nd/ and /d/.

## 2.3 Vowels

This section describes the vowel inventory of Gyegu Tibetan. First, the proposed vowel inventories of related varieties of “Yushu” Tibetan are presented. Then, I discuss the oral monophthongs, nasal vowels, and oral diphthongs found in Gyegu Tibetan.

### 2.3.1 Previously Proposed Vowel Inventories for Yushu Tibetan

Huang et al. (1994) propose a vowel inventory for the Zaduo variety made up of nine oral monophthong vowels, four nasal monophthong vowels, six oral diphthong vowels, and two nasal diphthong vowels, as shown in (121) and (122).

(121) Huang et al. (1994) monophthong vowel inventory of Zaduo County

<b>Monophthong vowels</b>	i	y	e	ɪ	a	ə	o	u	ʊ
	ĩ	ỹ				ẽ		ũ	

(122) Huang et al. (1994) diphthong vowel inventory of Zaduo County

<b>Diphthong vowels</b>	ua	uo	øi	ii	au	ou	õĩ	ũĩ
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Sun (2019) proposes a vowel inventory for the Lab variety containing nine oral vowels (123), eight nasal vowels (124), eight “checked vowels” (125), and a single

“checked” diphthong (125).

(123) Sun’s (2019) proposed oral vowel inventory for Lab Tibetan

<b>Oral vowels</b>	i	e		a		ə	u	o	ɔ
	ĩ						ʉ		

(124) Sun’s (2019) proposed nasal vowel inventory for Lab Tibetan

<b>Nasal vowels</b>	(ĩ)	(ẽ)	(ĩ)	(ã)	(ẽ)	(õ)		(õ)	(ĩ)
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(125) Sun’s (2019) proposed checked vowel inventory for Lab Tibetan

<b>Checked vowels</b>	(iʔ)	eʔ	ɪʔ	aʔ		əʔ	(uʔ)	oʔ	ɑʔ	uoʔ
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As seen above, Huang et al. (1994) and Sun (2019) have slightly different inventories, particularly in terms of their diphthong inventory. Sun proposes a single diphthong that is always checked /uoʔ/, while Huang et al. propose a larger diphthong inventory containing six oral diphthongs and two nasal diphthongs. Both Huang et al. and Sun propose inventories consisting of nine oral vowels. However, Huang et al. propose a high front rounded vowel /y/, an oral /ɪ/, and a high back unrounded vowel /ʉ/ that are not present in Sun’s analysis. Sun also proposes a high central unrounded vowel /i/, high central rounded vowel /ʉ/, and low back unrounded vowel /ɑ/ not present in Huang et al.’s analysis. Sun also proposes a much larger nasal monophthong inventory compared to Huang et al. As described in sections 2.3.2 and 2.3.4, the vowel inventory of Gyegu Tibetan is closer to Sun’s (2019) proposed inventory for the Lab variety.

Although Sun (2019) lists syllables closed by a glottal stop as ‘checked vowel finals’, I consider these to be VC sequences where the glottal stop is acting as a syllable coda. Syllables ending in a glottal stop have particular  $f_0$  contours associated

with them which are different from open syllables. This is discussed in further detail in section 2.5.2.3.

### 2.3.2 Oral Vowels: Monophthongs

There are ten phonemic oral monophthong vowels in Gyegu Tibetan, in addition to a single phonemic monophthong vowel that only surfaces before phonemic nasal consonants. The ten oral monophthong vowels are displayed in the vowel chart in table (126).

(126) Gyegu Tibetan Vowel Chart

	Front	Central	Back
High	i ɪ	ɨ	ʉ u
Mid	e	ə	o
Low	a		ɔ

Table (127) displays example words where these monophthongs are found.

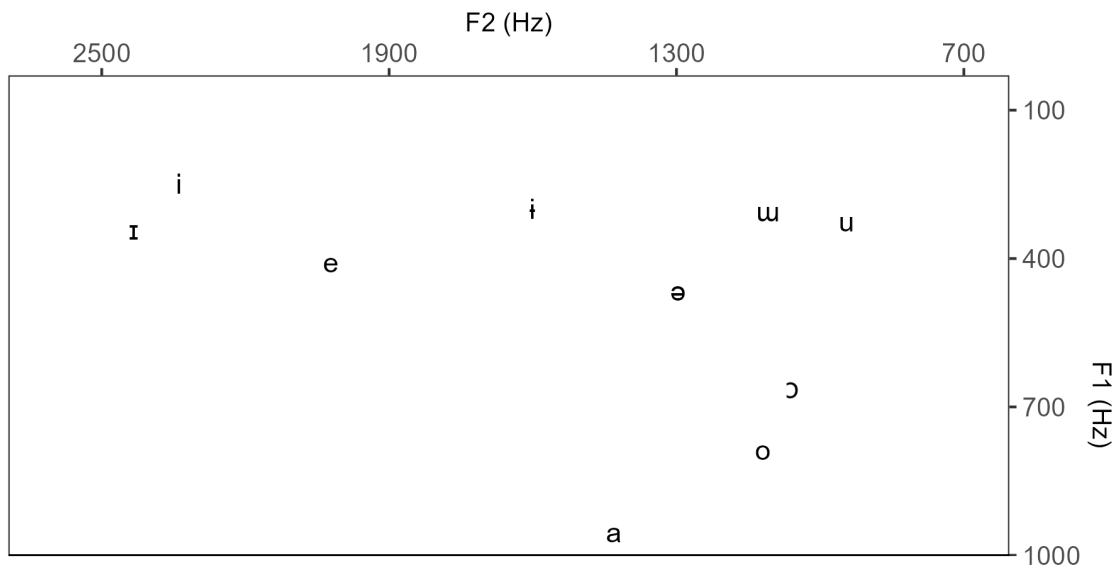
(127) Monophthong example table

Examples:		
i	pi	‘wool’
ɪ	giʔ	‘vulture’
ɨ	pi	‘snake’
ɯ	pu	‘give (to a third person)’
u	pu	‘incense’
e	pe	‘Tibetan’
ə	pə	‘son’
o	p <sup>h</sup> oʔ	‘pig’
a	pa	‘cow’
ɔ	pɔʔ	‘burn’

Image (128) illustrates the vowel space of a female Gyegu Tibetan speaker. To create this vowel chart, a word list was created<sup>9</sup>, with one word per vowel. I attempted to collect all vowels after a voiceless unaspirated bilabial stop in open syllables. However, this was not always possible. In some instances, it was required to collect a word with a voiced bilabial stop, or a stop at another place of articulation. Once the word list was created, the speaker recorded four instances of each word. These words were then annotated, with the F1 and F2 values extracted using a Praat script. Then, the mean values were calculated and plotted using R. The resulting vowel chart is shown below in (128).

<sup>9</sup>The word list presented in (127) was used to create the vowel chart in (128).

(128) Single speaker vowel chart



There are surface nasal vowels, but as will be explained in section 2.3.3, I analyze vowel nasality as a phonological process rather than a characteristic of vowels themselves.

### 2.3.3 Nasal Vowels

The vowel [ɐ̃] only appears as either a nasalized vowel or in VN sequences in words such as [sɐ̃] ‘three’. Additionally, the vowels /i/ and /u/ do not appear as nasalized vowels or in VN sequences. Table (129) displays example words containing nasal vowels.

(129) Nasal vowel example table

ĩ	lĩ	‘sing’
ũ	ɲiwũ	‘comforter’
ẽ	ɲẽ	‘two’
ĩ	ɖĩ	‘seven’
ẽ̃	çẽ̃	‘receive (a blessing)’
õ	k <sup>h</sup> õ	‘snow’
ã	gã	‘dinner’
ẽ̃	sẽ̃	‘three’
õ̃	sõ̃	‘to think’

Nasal vowels only occur word finally, e.g. [k<sup>h</sup>õ̃] ‘snow’ and [lã̃] ‘mountain pass’. In the data, there are no contrasts between word final nasal vowels and word final VN sequences. The restricted environment in which nasal vowels occur, combined with the lack of nasal vowel vs VN contrast suggest that nasal vowels are not separate phonemes that contrast with their oral counterparts. I propose that these word final nasal vowels are underlyingly VN sequences which surface as nasalized vowels. Although nasal codas are overtly pronounced when followed by another consonant, in many recordings of words uttered in isolation, it is impossible to ascertain which nasal is underlyingly present. This indicates that nasals contrast prevocally, but not syllable-finally. Throughout the dissertation, these codas have been transcribed as /n/.

### 2.3.4 Oral Vowels: Diphthongs

There are four diphthongs in Gyegu Tibetan: /uo/, /ai/, /au/, and /ua/. These diphthongs are rare in comparison to their monophthong counterparts, and are never nasalized.

Table (130) displays example words where these diphthongs are found.

(130) Diphthong example table

uo	suo	‘tooth’
ai	rai	‘see’
au	nau	‘although’
ua	k <sup>h</sup> ua	‘soup’

### 2.3.5 Nasal Vowels: Diphthongs

In addition to the oral diphthongs, there is a single diphthong /ũ/, which only surfaces as a nasal in the corpus in words such as /kum/ ‘wear’.

## 2.4 Syllable Structure

The maximal syllable in Gyegu Tibetan is CVC. The minimal syllable is CV or VC. Prenasalized stops and affricates may serve as syllable onsets. As previously discussed in section 2.2.9, I analyze these prenasalized stops and affricates as phonologically unary segments.

Examples of each syllable type are displayed in (131).

(131) Examples of possible syllable structures in Gyegu Tibetan

Syllable Type	Transcription	English Translation
CV	/çi/	‘know’
	/nu/	‘fake’
	/ndzɿ/	‘ghost’
	/ŋgo/	‘head’
VC	/ar/	‘America’
	/on/	‘blessing’
CVC	/jal/	‘disappear’
	/non/	‘inside’
	/mbaʔ/	‘gift’

### 2.4.1 Onsets

There are no onset consonant clusters in Gyegu Tibetan. Prenasalized stops, prenasalized affricates, preglottalized nasals, and preglottalized approximants are complex (single) consonants.

### 2.4.2 Codas

Although all consonant phonemes occur as onsets in the data, the consonants that occur in a coda position are far more restricted. As seen in table (132), only /ʔ/, /h/, /r/, /l/, /z/, and /n/<sup>10</sup> may occur as syllable codas.

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<sup>10</sup>A word final nasal assimilates in place of articulation to the following consonant. Therefore, /m/, /ɲ/, and /ŋ/ also surface in the coda position when a word final nasal is followed by another word with a bilabial, palatal, or velar onset.

(132) Examples of observed syllable codas

Coda	Transcription	English Translation
/ʔ/	/hoʔ/	‘you’
/h/	/wah/	‘fox’
/r/	/ar/	‘America’
/l/	/k <sup>h</sup> ɪl/	‘hip’
/z/	/iːz/	‘now’
/n/	/dm/	‘seven’

Of these codas, the glottal stop occurs most frequently in the corpus. Words with nasal codas are frequently pronounced with a nasalized vowel rather than a nasal consonant.

In addition to these codas, there is a process of word final /ə/ devoicing which results in phonetically aspirated stops, fricatives, and affricates word-finally. This rule can be written as /ə/ → [ə̥] / [+obstruent]\_#. Examples of lexical items where this devoicing is observed are seen in (133). I posit that there is an underlying schwa, because in careful speech, the schwa is overtly pronounced. When looking at spectrograms of instances where the schwa has been devoiced, there is also evidence of faint formants in the aspiration.

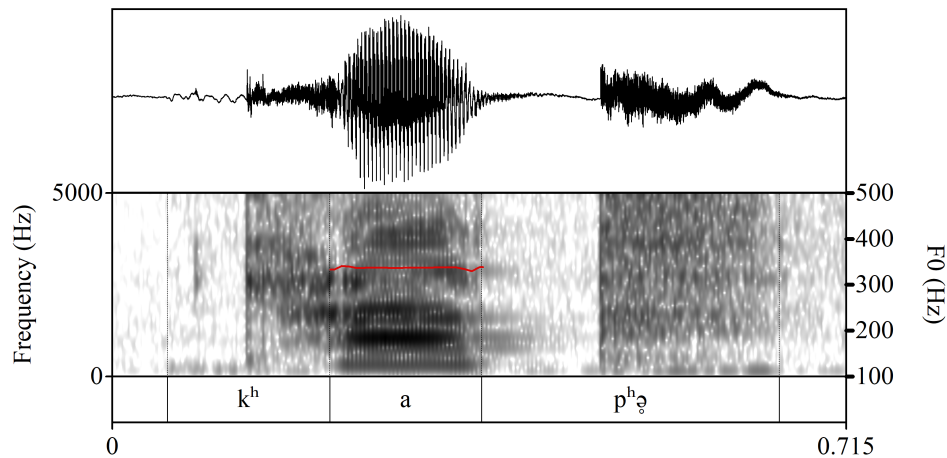
(133) Examples of word final schwa devoicing

Phonemic Transcription	Phonetic Transcription	English Translation
/k <sup>h</sup> ap <sup>h</sup> ə/	[k <sup>h</sup> ap <sup>h</sup> ə̥]	‘beard’
/t <sup>h</sup> ijet <sup>h</sup> ə/	[t <sup>h</sup> ijet <sup>h</sup> ə̥]	‘jacket’
/ŋatɕ <sup>h</sup> ə/	[ŋatɕ <sup>h</sup> ə̥]	‘fifty’

A spectrogram and waveform showing an example of word final schwa devoicing

is shown in (134). Note the prolonged period of aspiration after the release of the /p<sup>h</sup>/, with faint formants.

- (134) /k<sup>h</sup>ap<sup>h</sup>ə/ [k<sup>h</sup>ap<sup>h</sup>ə] ‘beard’ waveform, spectrogram, and pitch track (female speaker) (Tsiren)



## 2.5 $f_0$ Phenomena

This section describes the typology of tone in the Tibetan language family, provides an overview of  $f_0$  phenomena in Gyegu Tibetan and places it within the existing typological understanding of tone in Tibetan languages. Contrastive tone plays a distinct role in the grammar of many Sino-Tibetan languages. As a result, researchers have paid much attention to tone and pitch phenomena in Tibetan languages.


I propose that  $f_0$  patterns in Gyegu Tibetan are predictable based on the syllable onset and coda, representing a case of what Sun (1997) refers to as “redundant tone”.

Evidence is presented that  $f_0$  is predictable based solely on the quality of the syllable onset and is therefore not lexically specified. The lack of tonal minimal pairs with the same phonemes as syllable onset and coda is used to defend this claim. After presenting data defending my analysis, I place the Gyegu dialect within Sun's (1997) typology of tonal systems in Tibetan languages, showing that it patterns most closely with the stage 2 languages.

### 2.5.1 Typology of Tibetan Tone

Sun (1997) provides a broad overview of the tonal typology of the Tibetan language family. According to Sun (1997: 487), Tibetan languages fall on a continuum from atonal to fully tonal, as observed in (135). On the atonal side of this continuum, there is often “redundant tone”. This means that the pitch contour of a particular syllable is determined by phonetic characteristics of the onset or coda. For example, if the syllable onset is voiced, then the syllable is predictably low tone; if the syllable onset is voiceless, then the syllable is predictably high tone. On the other end of the continuum, some varieties have developed fully contrastive tone that is not predictable based on syllable type. Although many of these languages only contrast high and low tones, some varieties such as Shigatse and Dzongkha have developed additional tonemic contrasts between falling and level pitch contours.

(135) Tonality Scale adapted from (Sun 1997: 487)

Tonality Scale	Stage	Description of each stage	Representative Dialects
Atonal    Tonal	1	No phonemic tone or redundant ‘habitual’ tone	Ndzorge; Ngaba
	2	No phonemic tone; redundant ‘habitual’ tone	Labrang; Zhangla
	3	Tone phonemic in restricted environments only	Amdo Sherpa; Balti
	4	Tone generally phonemic; tone values unstable/non-contrastive in some syllable types	Derge; Chamdo
	5	Tone values stable; redundancy high	Lhasa; Gar
	6	Additional contrast between falling and level contours	Shigatse; Dzongkha

According to Leongue (2018: 14) and Caplow (2009), the structure of a maximal syllable in a given Tibetan dialect correlates with how conservative or innovative said dialect is. Old Tibetan had a significantly more complex syllable structure than most modern dialects, with up to four consonants in the syllable onset, and up to two consonants in the coda position. More conservative dialects such as Amdo Tibetan have maintained more complex maximal syllables, while innovative dialects such as Shigatse Tibetan display a reduced maximal syllable. Leongue (2018) believes that there is a correlation between the loss of complex syllable onsets and the development of more complex tonal systems. Sun (2003b) agrees with this claim, but focuses on the loss of voicing contrast in syllable onsets, rhyme length, and aspiration in Tibetan tonogenesis.

According to Caplow (2009: 522) “All of the Innovative dialects display a distinction between high and low register tones.”, meaning that all Tibetan varieties that have developed contrastive tone distinguish between a high and low tone. Additionally, some languages may also have a mid tone or contour tones. This is in line with other proposals for other Tibetan languages (Leongue 2018; Mazaudon 1977; Sun 1997; Sun 2003b).

As we have seen, Gyegu Tibetan has a relatively simple maximal syllable structure of CVC. Based on the observation that simplified syllable structure is associated with “innovative” dialects, and that these innovative dialects tend to have a H-L tonal contrast, we would expect Gyegu Tibetan to have this same contrast. We would further expect that the “Khams” dialects of Derge and Chamdo, which are geographically near the area where Gyegu is spoken, would be the most similar to Gyegu in terms of tonal systems. Therefore, it is most likely that Gyegu Tibetan falls into stage 4 and pattern with the Derge and Chamdo dialects. However, we will see that although Gyegu Tibetan does have high versus low pitch phenomena,  $f_0$  is redundant rather than phonemic. I propose that Gyegu Tibetan best fits into stage 2 of Sun’s (1997) typology<sup>11</sup>.

## 2.5.2 Gyegu Tibetan $f_0$ Phenomena

This section describes the observed patterns of  $f_0$  contours in the monosyllabic and disyllabic words available in the data, as well as the effects of syllable onsets and codas. Data used in this section was gathered in a variety of ways. First, words were elicited in a list style and uttered in isolation. It is known that intonation plays a role in the realization of  $f_0$  when words are uttered in isolation. Consequently, words

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<sup>11</sup>It is however possible that Gyegu Tibetan patterns with the Derge and Chamdo dialects, and what has previously been analyzed as phonemic tone in these languages is better described as the tense vs breathy (lax) distinction presented in this chapter. This could also explain why the tones in those languages have been described as unstable and non-contrastive in some syllable types, as  $f_0$  may be a secondary consequence of other articulatory factors rather than a primary and phonemically important distinction.

collected in isolation “do not in any way provide direct, untarnished access to lexical features” (Himmelman & Ladd 2008). Therefore, after words were elicited in their citation form, they were inserted into a carrier phrase to observe any changes in  $f_0$  contour. Many of these words also occurred in more naturalistic speech, including narratives and dialogue, which allowed them to be analyzed in a wider variety of phonological and intonational environments. Regardless of the intonational environment, the same redundant high and low pitch patterns were observed.

Based on the available data, it appears that Gyegu Tibetan has a predictable and redundant two-way distinction in open monosyllables between high pitch (H) and low pitch (L). Voiceless unaspirated consonants, voiceless aspirated consonants, and preglottalized sonorants have a redundant high  $f_0$ , whereas breathy consonants and voiced non-preglottalized consonants have a redundant low  $f_0$ . In disyllabic words, the first syllable displays this same high-low distinction. However, the realization of  $f_0$  on the second syllable is affected by the pitch of the first syllable. If the first syllable is high pitch, then the second syllable will also be realized with a high pitch. However, if the first syllable is low pitch, then the distinction between low and high pitch syllables is retained in the second syllable. If the first syllable is a low pitch, the  $f_0$  will rise into the onset of the second syllable as a result of being closed rather than open. This phenomenon is discussed further in section 2.5.2.5. A similar pattern for disyllabic words is attested in Tokpe Gola Tibetan (Caplow 2009) and Lhasa Tibetan (Sun 1997).

### 2.5.2.1 Monosyllabic Words

The following sections describe the observed pitch contours of monosyllabic words. The lack of true tonal minimal pairs, and the presence of predictable  $f_0$  contours based on the quality of syllable onsets and the presence of a coda indicates that pitch is redundant rather than contrastive and lexically specified.

The  $f_0$  contours observed in monosyllabic words are seen in Table (136).

(136) Monosyllabic  $f_0$  contour table

	Open syllable	Closed syllable
High pitch onset	High falling	High level
Low pitch onset	Low falling	Low rising

Data demonstrating the relationship between the quality of syllable onsets, presence of a coda, and  $f_0$  is presented in 2.5.2.2 through 2.5.2.4.

### 2.5.2.2 Onsets and $f_0$

As shown in Table (137), syllables with onsets that are voiceless (and not breathy), aspirated, or preglottalized are followed by high pitch; syllables with onsets that are breathy or voiced are followed by low pitch.

(137) Consonantal features determining high and low  $f_0$ 

Consonantal Features	$f_0$
[-voice] [+tense] [+aspirated] [+preglottalized]	<b>High</b>
[+voice] [+breathy]	<b>Low</b>

Image (143) contains spectrograms of /ŋa/ ‘I (abs.)’ and /<sup>ʔ</sup>ŋa/ ‘five’. This provides evidence that preglottalized sonorants have a high  $f_0$ , leading to a surface difference with lower  $f_0$  after non-preglottalized sonorants.

(138) Waveforms and spectrograms of [ŋa] ‘I’ vs [ʔŋa] ‘five’ (female speaker)

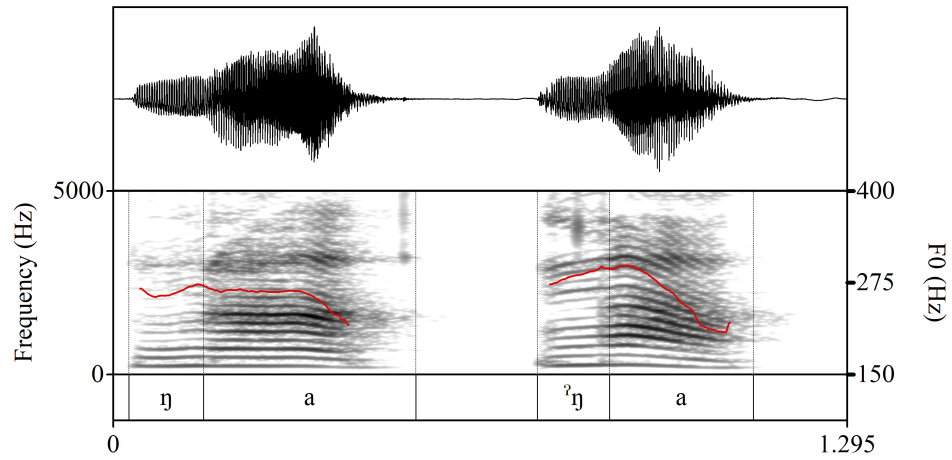


Image (139) demonstrates this same high-low distinction in tense unaspirated voiceless stops versus breathy unaspirated voiceless stops, with /t<sup>h</sup>a/ ‘extinguish’ being low pitch and /ta/ ‘horse’ being high pitch.

(139) Low vs high pitch in breathy and tense stop syllables (male speaker) (Wujin)

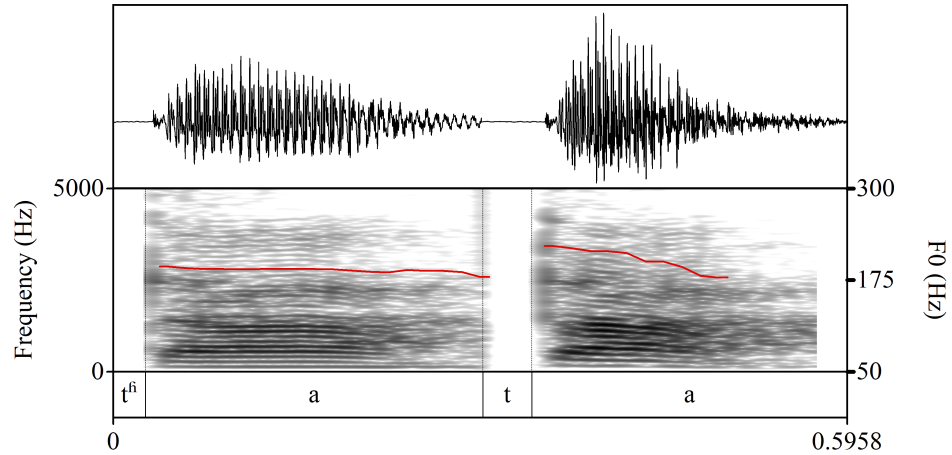


Image (140) demonstrates the high-low distinction in voiced stops versus voiceless unaspirated, with /bal/ ‘tortoise’ being low pitch and /pal/ ‘glory’ being high pitch. Note that the  $f_0$  still falls in these closed syllables, which sometimes occurs in monosyllabic words closed by a voiced coda.

- (140) Low versus high pitch in voiced and voiceless plain stops (female speaker)  
(Mary)

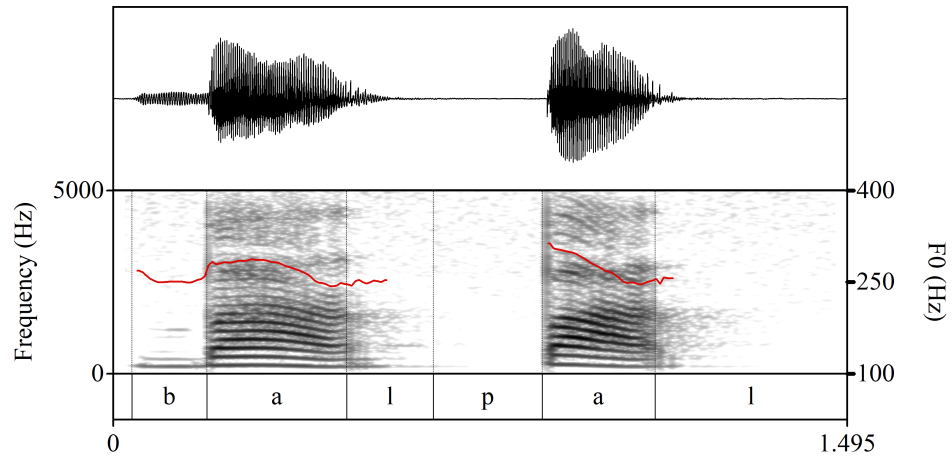


Image (141) demonstrates the high-low distinction in voiced fricatives versus voiceless aspirated fricatives, with /z<sub>o</sub>/ 'make/construct' being low pitch and /s<sup>h</sup><sub>o</sub>/ 'tooth' being high pitch.

- (141) Low versus high pitch in voiced and voiceless fricatives (female speaker)  
(Gyg-045-PH-M)

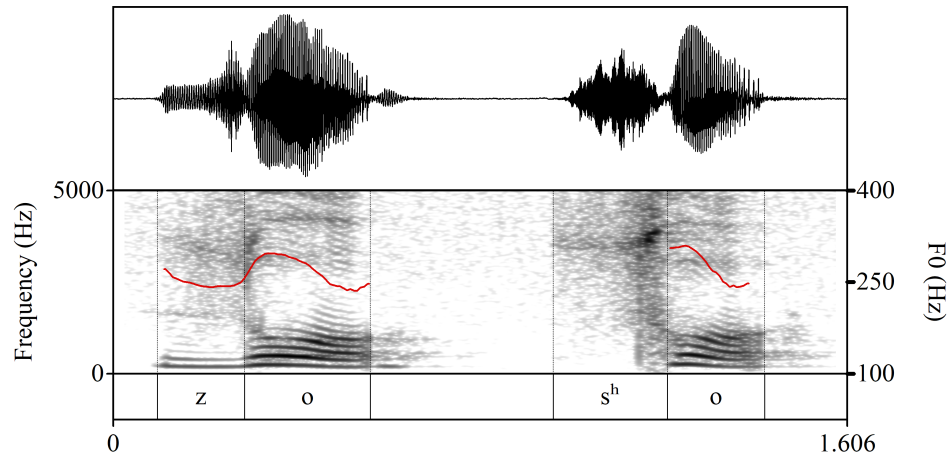
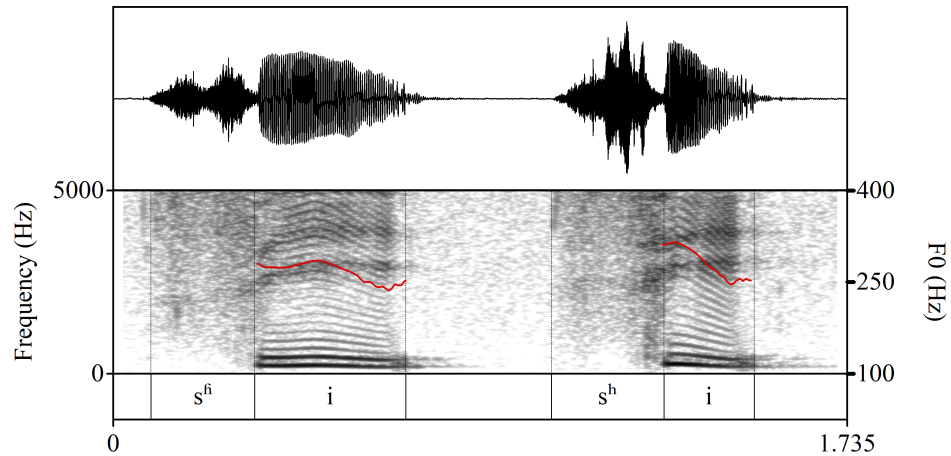


Image (142) demonstrates the low-high distinction in voiceless aspirated versus breathy voiceless fricatives, with /s<sup>h</sup>i/ ‘cooked food’ being low pitch and /sʰi/ ‘by the ground’ being high pitch.

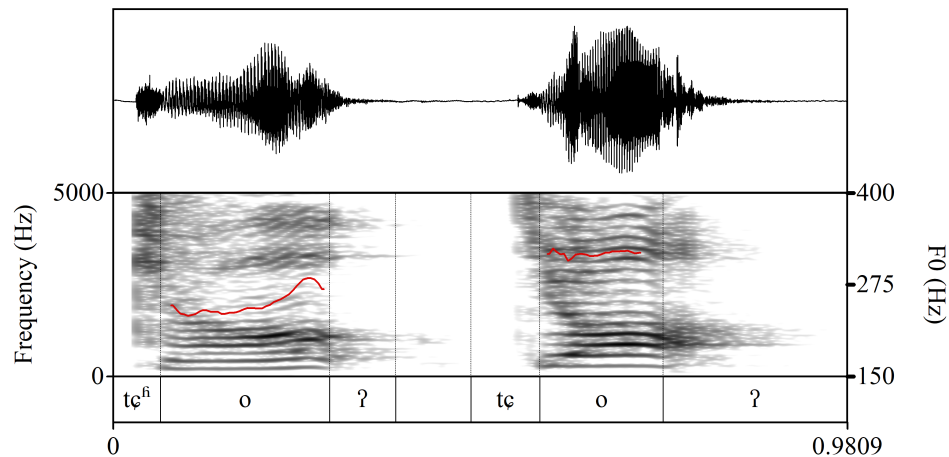
- (142) Low versus high pitch in breathy voiceless and voiceless aspirated fricatives (female speaker) (Gyg-045-PH-M)



Note that most of the previous examples, other than (140), are open syllables where there is a falling  $f_0$  contour. The primary  $f_0$  difference is at the beginning of the vowel. However, a different  $f_0$  pattern is observed in closed monosyllabic words.

Image (143) demonstrates  $f_0$  contours in closed monosyllables. The effect of glottal stop codas on  $f_0$  contours is discussed further in section 2.5.2.3.

(143) Spectrograms of [tɕ<sup>h</sup>oʔ] ‘six’ vs [tɕoʔ] ‘iron’ (female speaker)

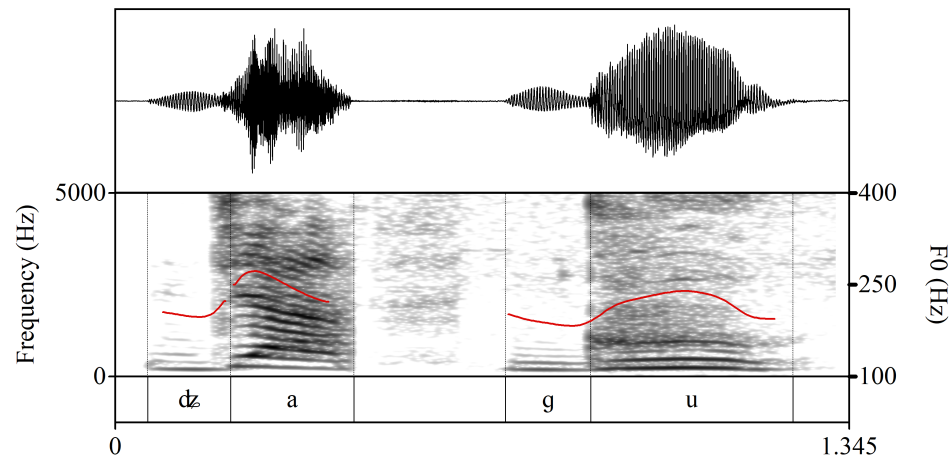


The examples above demonstrate that pitch is redundant in both open and closed monosyllables, and that the  $f_0$  contour is determined by both the quality of the onset and the presence of a coda.

As previously discussed, according to Sun (1997) tone is predictable based on the voicing quality of onsets in many Tibetan varieties. In such varieties, syllables containing voiced obstruent onsets are predictably low tone. However, when looking at the  $f_0$  contours in syllables with voiced obstruent onsets, we see that there is variability, with some instances patterning more closely with high pitch syllables and others patterning more closely with low pitch syllables. This variability is observed in (144). Other examples where this variation can be observed include [gu] ‘want’ vs [guo] ‘door’. This variation provides evidence that tone is not phonemic, and that the articulatory and phonetic properties of the onset are more important than  $f_0$  in terms of phonemic contrast. Anecdotally, speakers will not correct a learner for producing an incorrect  $f_0$  contour, as long as the syllable onset and vowel are pronounced with the correct articulation and phonation. However, they will correct a learner if the

syllable onset is mispronounced with the wrong articulation or phonation, even if the  $f_0$  contour is correct.

(144) Spectrogram comparing [dza] ‘Chinese’ vs [gu] ‘want’ (female speaker)

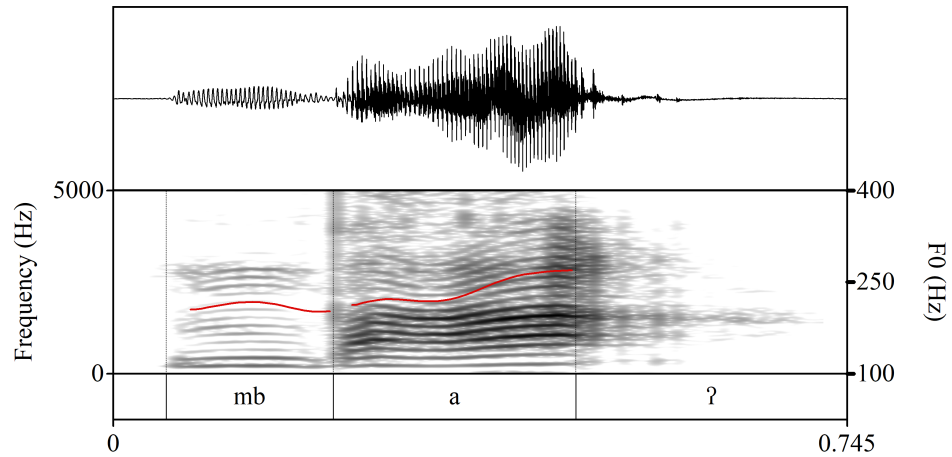


Similar pitch variation on syllables with synchronically voiced obstruent onsets is not unprecedented in Tibetan dialects and is also observed by Huang (1994: 3) in Derge and Liu (1984) in Chamdo.

### 2.5.2.3 Glottal Stop Codas

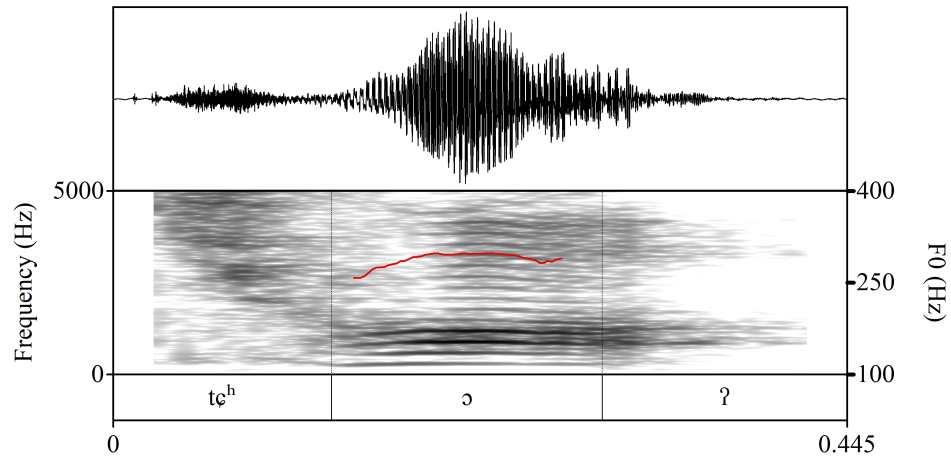
Glottal stops are the most common consonant found in the coda position in Gyegu Tibetan and have a consistent effect on the  $f_0$  contour. When a syllable with low pitch is closed by a glottal stop, a rising  $f_0$  contour is observed, as previously shown in (143). This rising  $f_0$  contour is also seen in the spectrogram in (145).

(145) Spectrogram for /mba?/ ‘gift’ (female speaker)



When a syllable with high pitch is closed by a glottal stop, the  $f_0$  contour remains high and relatively level, as seen in (146). This differs from the falling  $f_0$  contour observed in high pitch open syllables seen in section 2.5.2.1.

(146) Spectrogram for /tɕʰɔʔ/ ‘ice’ (female speaker) (Tsiren)

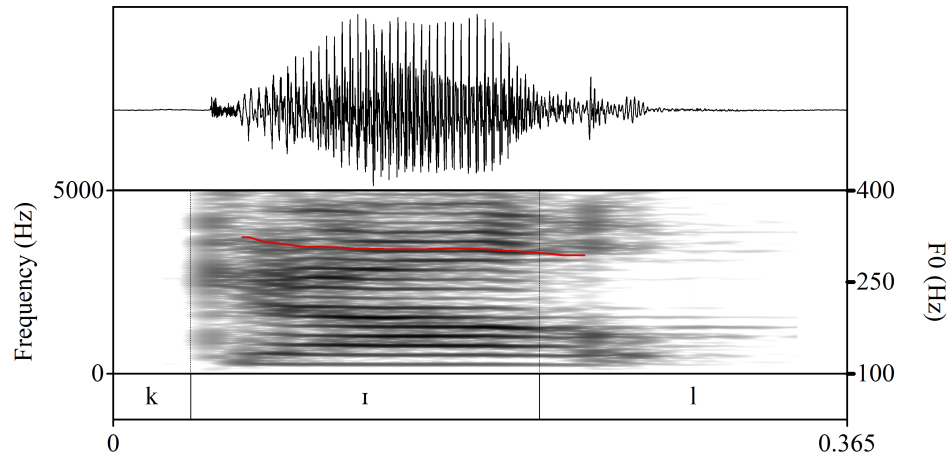


#### 2.5.2.4 Other Codas

Other codas, including /l/ and /r/ have a similar effect to that of glottal stop codas on  $f_0$  contours<sup>12</sup>. However, /h/ codas generally have no such effect. As seen in (147), and (148) the  $f_0$  on a high pitch syllable remains flat.

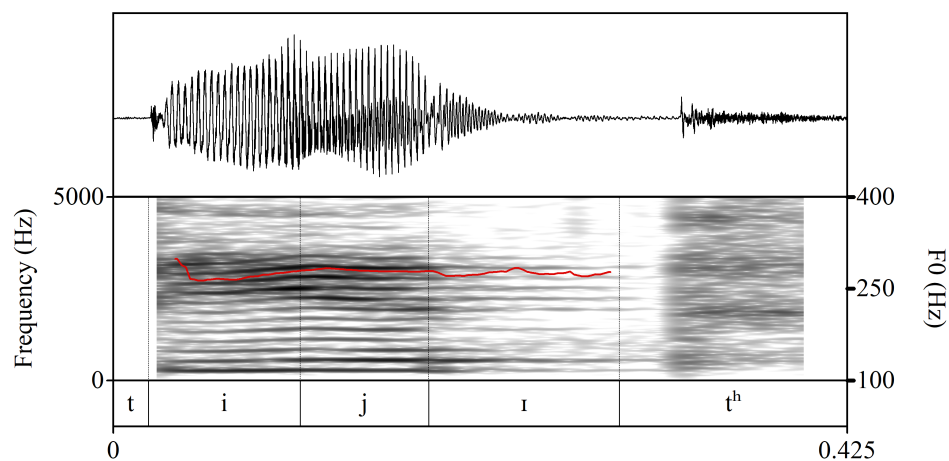
<sup>12</sup>In cases of word final vowel devoicing, codas including [tʰ] also have a similar effect.

(147) Waveform and spectrogram for [kɪl] ‘hip’ (female speaker)



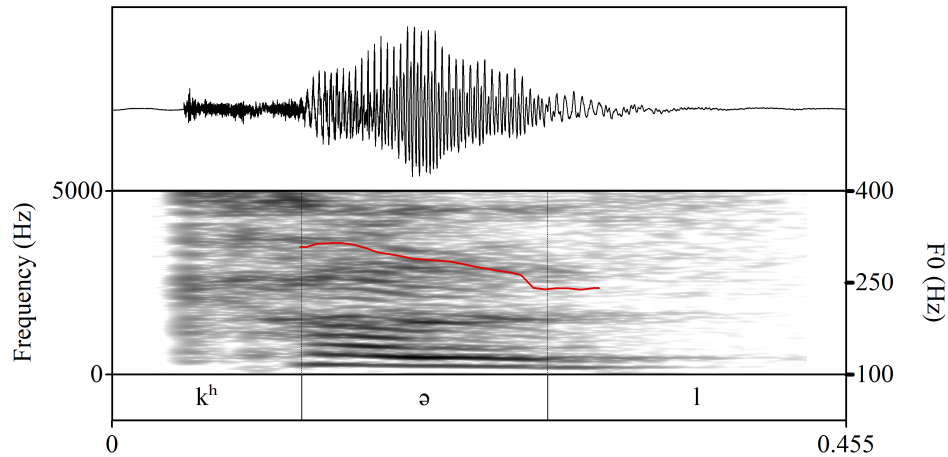
The word /tɪjtʰə/ [tɪjtʰ] ‘jacket’ contains an example of a syllable closed by [tʰ]. In (148), we see that the second syllable, which is high, remains flat without falling.

(148) Waveform and spectrogram for [tjɪtʰ] 'jacket' (female speaker)



However, this effect is highly variable in non-glottal stop codas. Occasionally,  $f_0$  still falls despite the presence of a coda, as seen in (149). This is particularly prevalent in syllables closed by a phonemically voiced consonant.

(149) Falling  $f_0$  with /l/ coda in /k<sup>h</sup>əl/ ‘prefecture’ (female speaker)



Based on these examples, I conclude that all codas generally have the same effect on  $f_0$  contours as glottal stop codas. As discussed further in section 2.5.2.5, the first syllable of a disyllabic word is inherently closed by the onset of the second syllable. These closed syllables behave like closed monosyllabic words. If the syllable is low pitch, there is a rising  $f_0$  contour; if the syllable is high pitch, there is a high and level  $f_0$  contour.

### 2.5.2.5 Disyllabic Words

The same redundant high-low pitch phenomena determined by the quality of the onset in monosyllabic words is also observed in the first syllable of disyllabic words. However, the  $f_0$  pattern on the second syllable of disyllabic words is more complicated. As the table in (150) shows, if the first syllable of a word is high pitch, then the second syllable will also be high pitch. However, if the first syllable is low pitch, then the second syllable may be either high or low pitch depending on the quality of the onset of the second syllable. It is possible that this pattern reflects

stress associated with the second syllable of disyllabic words. However, it is unclear at this time whether or not the language has stress. A similar pattern is also found in Tokpe Gola Tibetan (Caplow 2009), where the second syllable of a disyllabic word is inherently ‘high register’.

(150) Disyllabic word pitch patterns

		Syllable 2			
		H		L	
		Open	Closed	Open	Closed
Syllable 1	H	H HL	H H	H HL	H H
	L	L HL	L H	L L	L LH

Image (151) demonstrates the H-HL pattern observed in words with a high pitch first syllable and an open high pitch second syllable.

(151) H-HL pattern of [s<sup>h</sup>əpo] ‘Mongolian’ (female speaker) (Gyg-006-PH-M)

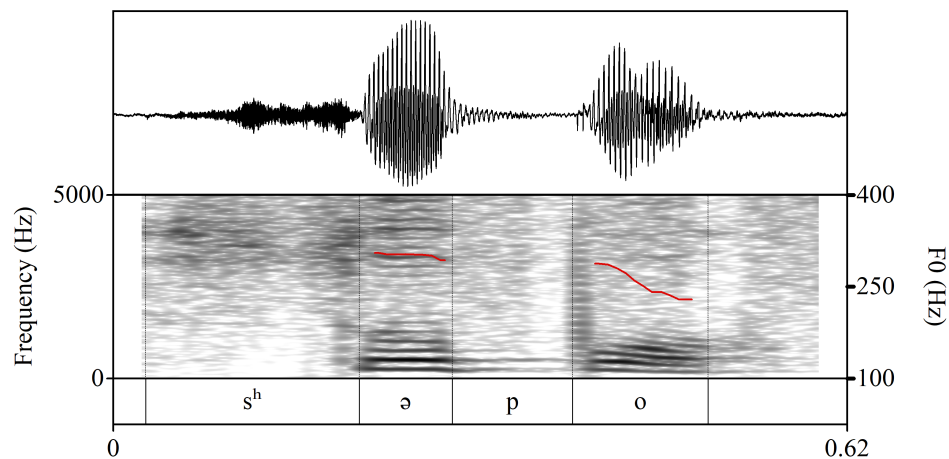


Image (152) in section 2.5.2.4 containing the word [tɨjtʰ] ‘jacket’ demonstrates the H-H pattern found on words with a high pitch first syllable and a closed high pitch second syllable.

(152) H-H pattern of [tɨjtʰ] ‘jacket’ (female speaker)

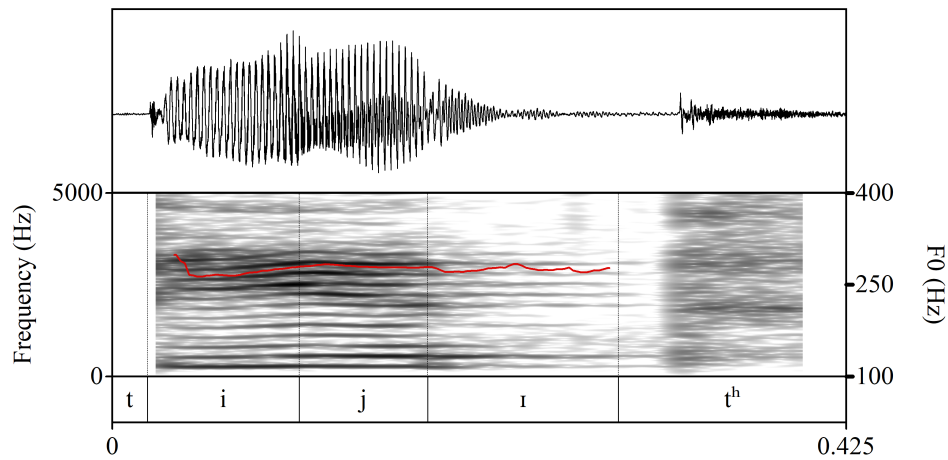


Image (153) demonstrates the H-HL pattern observed in words with a high pitch first syllable and an open low pitch second syllable. Note that the  $f_0$  begins to fall during the consonant in the second syllable.

(153) H-HL pattern of /awo/ [ʔawo] ‘older brother’ (female speaker)

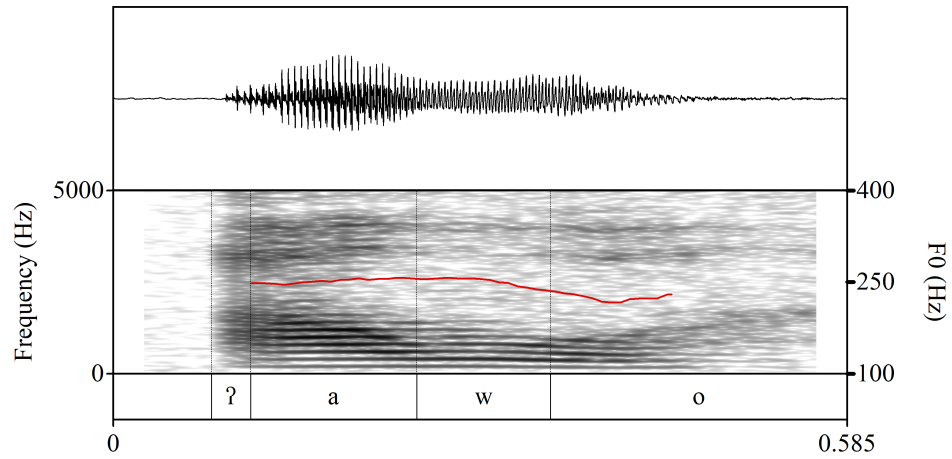


Image (154) demonstrates the H-H pattern observed in words with a high pitch first syllable and a closed phonetically low pitch second syllable.

(154) H-H pattern of /çandu?/ 'light brown' (female speaker)

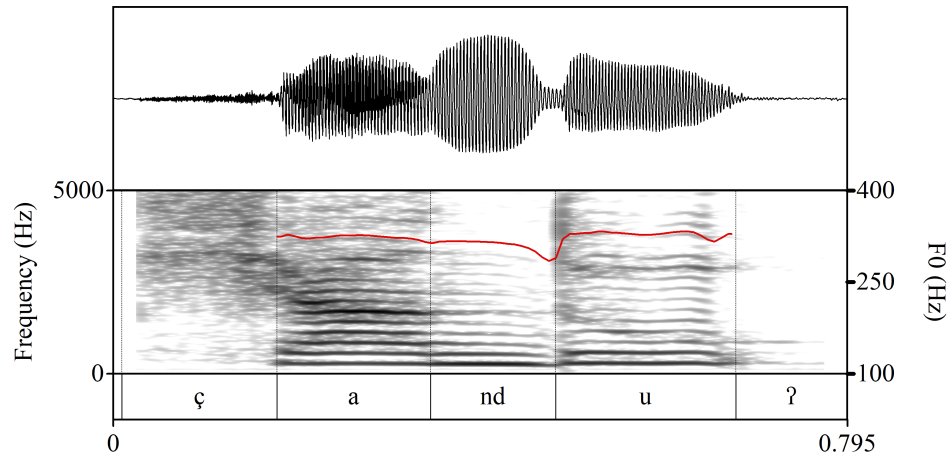


Image (155) demonstrates the L-HL tonal pattern found on words with a low pitch first syllable and an open high pitch second syllable.

(155) L-HL pattern of /dzatɕ<sup>h</sup>ə/ ‘Yangtze river’ (female speaker)

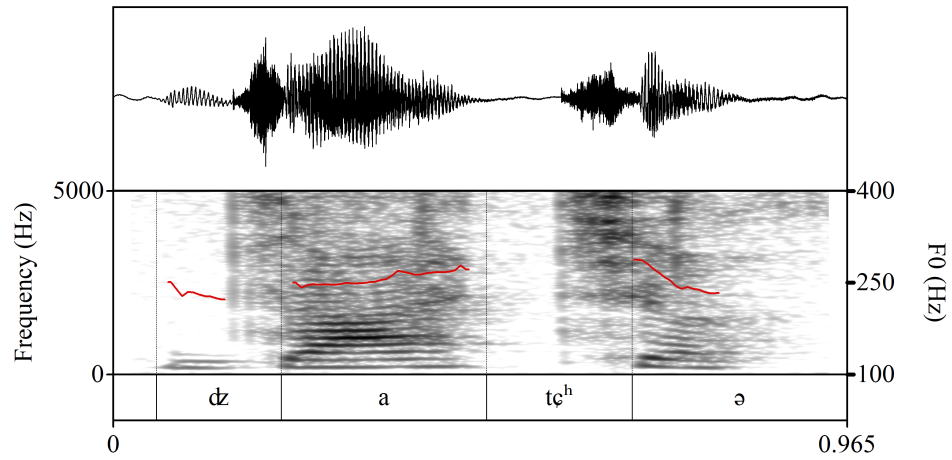


Image (156) demonstrates the L-H tonal pattern found on words with a low pitch first syllable and an open high pitch second syllable.

(156) L-H pattern of /nepoʔ/ ‘two layers’ (female speaker)

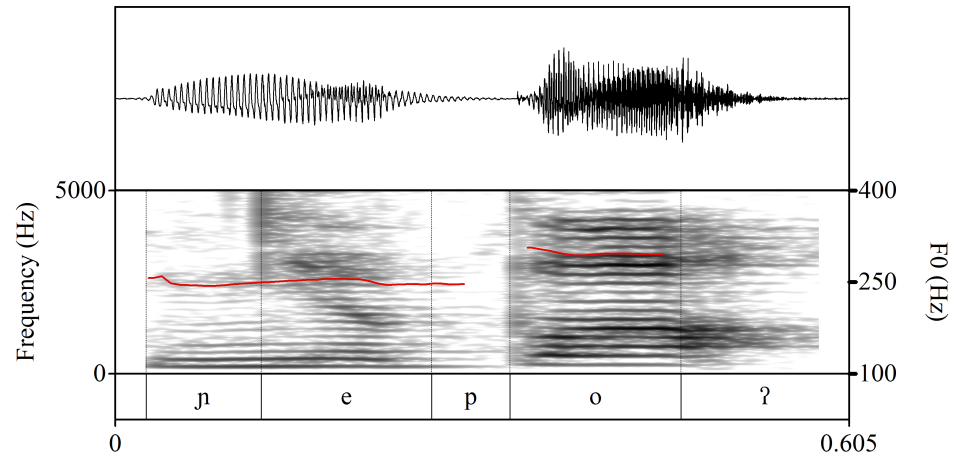


Image (157) demonstrates the L-L tonal pattern found on words with a low pitch first syllable and an open low pitch second syllable.

(157) L-L pattern of /dawa/ 'moon' (female speaker)

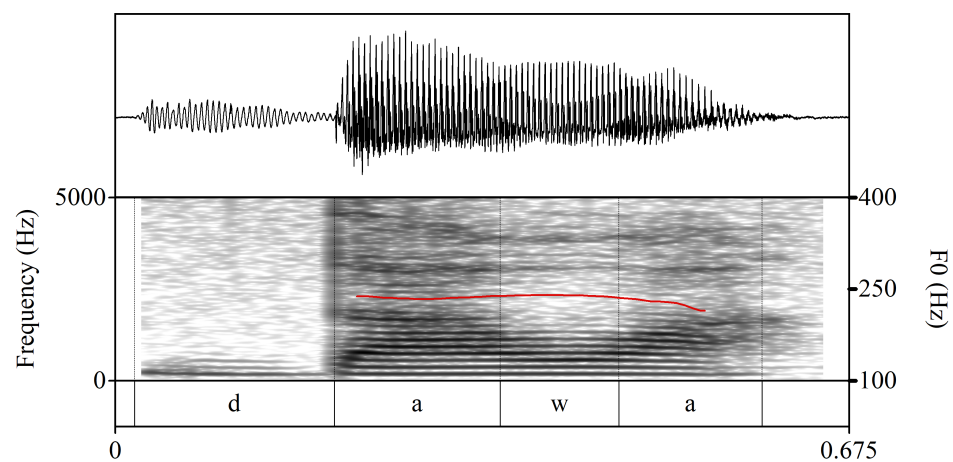
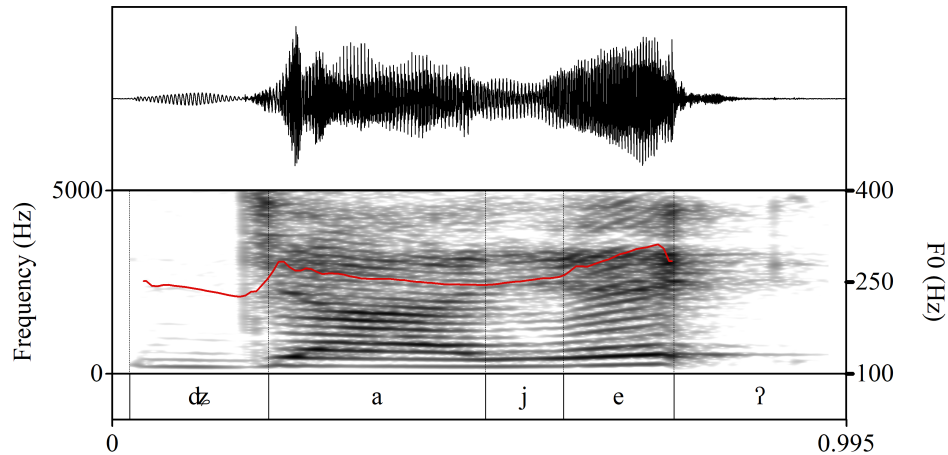


Image (158) demonstrates the L-LH tonal pattern found on words with a low pitch first syllable and a closed low pitch second syllable.

(158) L-LH pattern of /dzajeʔ/ ‘written Chinese’ (female speaker)



These spectrograms demonstrate that pitch is determined solely by the quality of the onset in the first syllable of disyllabic words, with a redundant high pitch on the second syllable if the first syllable is high pitch. For a complete list of all disyllabic words analyzed for this paper, please see the appendix. As previously mentioned, this pattern is also attested in Tokpe Gola Tibetan (Caplow 2009) and Lhasa Tibetan (Sun 1997). Sun (1997, 2003b) believes that this synchronic pattern can be attributed to features of Old Tibetan. Although tone was not contrastive in Old Tibetan, Sun believes that a redundant high tone was associated with each syllable. Over time, a low register emerged and slowly began to encroach on the high register. However, this analysis is disputed by researchers such as Caplow (2009), who believe that there was more variation in  $f_0$  in Old Tibetan.

### 2.5.2.6 Summary of $f_0$ Phenomena

The evidence presented in this section shows that although pitch is redundant and predictable based on the quality of the syllable onset and the presence of a coda,

there is variability in the realization of the height of  $f_0$ , particularly following voiced onsets. When considering the Gyegu dialect's place in Sun's (1997) typology of tonal systems in Tibetan languages, it appears to fit best into stage 2 with languages like Labrang and Zhangla.

## 2.6 Implications for Transcription

For the remainder of this dissertation, I will use IPA symbols rather than the Wylie transliteration system based on standard written Tibetan. Using the IPA provides a more accurate sense of pronunciation and is easily accessible to readers without a background in written Tibetan or the Wylie transliteration system. When possible, the written Tibetan form of the word is also provided.

It is also important to consider how  $f_0$  will be transliterated moving forward. The fact that pitch is entirely predictable based on the quality of the syllable onset and the presence of a coda makes tonal transcription redundant. Therefore, no tone marking is included in my transcription system.

As discussed in section 2.3.3, phonetically nasal word final vowels are underlyingly VN sequences. Therefore, words such as [k<sup>h</sup>õ̃] 'snow', will be transcribed as /k<sup>h</sup>on/, where the /n/ is pronounced as nasalization on the vowel if phrase/utterance final and assimilates in place of articulation to the following consonant if it occurs word medially or in a phrase final position.

## 2.7 Summary

Gyegu Tibetan has large consonant inventory consisting of 55 phonemes. There is a four way contrast in obstruents between voiced, voiceless, aspirated, and breathy (lax) counterparts. The distinction between voiceless tense and breathy obstruents lies primarily in differences between  $f_0$  and spectral tilt of the following vowel. There is an additional series of prenasalized stops and affricates, which function as unary

segments in the phonology. There is a two way distinction in sonorants between plain and preglottalized phonemes. Vowels following preglottalized phonemes have a higher  $f_0$  than those following plain sonorants.

There are 10 monophthongs and 3 diphthongs in Gyegu Tibetan. Although there are utterance final nasal vowels in Gyegu Tibetan, I analyze these as underlyingly /VN/ sequences. When followed by a consonant, the nasal consonant is overtly pronounced and assimilates in place of articulation to the following consonant.

The maximal syllable in Gyegu Tibetan consists of CVC, with a CV or VC minimal syllable. While all consonants occur in the onset position, the coda position is much more restricted. Only /ʔ/, /h/, /r/, /l/, /z/, and /n/ occur as codas.

Pitch in Gyegu Tibetan is not lexically specified. Instead, it is redundant and determined by the quality of the syllable onset and coda. Syllables with a voiceless or aspirated obstruent onset have a high  $f_0$ , while syllables with a voiced or breathy obstruent have a low  $f_0$ . Similarly, syllables with a preglottalized sonorant onset have a high  $f_0$ , while those with a plain sonorant have a low  $f_0$ . Disyllabic words have a slightly more complicated pitch pattern. In words with a high  $f_0$  on the first syllable, the second syllable is high regardless of the quality of the syllable onset. In words with a low  $f_0$  on the first syllable, the second syllable may have either a high or low  $f_0$  depending on the quality of the onset (as described above).

The phonology of Gyegu Tibetan is similar to the related varieties spoken in Zaduo County and Lab. However, the phoneme inventory posited here is slightly different than those described by Huang et al. (1994) and Sun (2019), which may represent a difference in analysis. The relationship between syllable onset and  $f_0$  is nearly identical to that described by Sun (2019) in the Lab variety.

## Chapter 3

# Lexical and Phrasal Categories

This chapter describes the lexical categories of Gyegu Tibetan. Morphological, syntactic, and semantic justifications for these lexical classes are provided. When possible, I also provide the written Tibetan form of lexical items. If the written form is not included, it does not necessarily reflect that there is no written form. Instead, it may reflect my own unfamiliarity of the written form or my inability to find it. I begin with a discussion of nouns and noun phrases, including the subcategories of lexical nouns, compound nouns, proper nouns, and locative postpositions. Morphological marking and constructions related to noun phrases including case marking and nominalization are also discussed. Then, the morphosyntactic characteristics of number, pronouns, and determiners are illustrated. Next, I move on to a description of adjectives and adverbs. Then, common interjections are discussed. Finally, the most complex lexical category - verbs - is described, including a description of the roles that transitivity, control, tense, aspect, and mood marking play. Some description of sentence final copulas and auxiliaries is provided in this chapter, but these are discussed in more detail in Chapter 4.

### 3.1 Typology and Research on Closely Related Varieties

Most modern Tibetic languages are agglutinative (Arcodia & Basciano 2020). Arcodia and Basciano (2020: 4) discuss the various “morphosyntactic profiles” of Sino-Tibetan languages, listing isolating, agglutinative, and polysynthetic. Within these profiles, isolating languages exhibit the lowest morpheme-to-word ratio, and agglutinative languages have a higher morpheme-to-word ratio, in addition to regular and transparent morphology. Many modern varieties have also inherited the verbal inflection found in Classical Tibetan (Tournadre & Suzuki 2023). Classical Tibetan had “four different forms corresponding to the ‘past’, ‘present’, ‘future’, and ‘imperative’ for controllable verbs and only three forms for non-controllable verbs<sup>1</sup> ‘past’, ‘present’, and ‘future.’” (Tournadre & Suzuki 2023: 362). However, in some modern varieties, including Gyegu Tibetan, this has been reduced to only the past, present, and imperative forms, where the future has been lost. Many modern varieties also have different forms of the same verb depending on the level of control and transitivity. This paradigm can also be traced back to Classical Tibetan (Tournadre & Suzuki 2023: 205). Bartee (2007: 126) discusses the role that control plays in the morphology of Dongwang Tibetan (another “Kham” variety) and defines control as “a person’s ability to exert effort that can potentially, or actually, determine the outcome of an event.”

Although authors including Tribur (2019) have written extensively on the morphology of distantly related varieties of Tibetan, the majority of previous research on varieties closely related to Gyegu Tibetan focuses on phonetics and phonology.

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<sup>1</sup>Tournadre and Suzuki (2023: 346) define controllable vs non-controllable verbs in the following way “A controllable verb... designates “controllable actions” i.e. actions which may be mastered by the agent and are intentionally performed, while non-controllable verbs... refer to actions or situations that cannot be controlled by the agent or verbs that do not imply any agent.” This differs from the generative use of control in generative theories of grammar as described in Chomsky (1981).

One notable exception is Sun’s (2019) dissertation describing the Lab variety. In his dissertation, Sun describes the morphology and syntax of nouns, adjectives, adverbs, and verbs. Because of the similarities between the Lab variety and Gyegu Tibetan, I will make comparisons of the two throughout this chapter.

## **3.2 Nouns and Noun Phrases**

This section describes the morphology of nouns in Gyegu Tibetan, starting with simple lexical nouns, before moving onto compound and proper nouns. Nouns in Gyegu Tibetan can serve as the head of a noun phrase, take case marking, can co-occur with a demonstrative or indefinite marker, and take plural morphology. The morphology of case marking and nominalization are also discussed.

### **3.2.1 Lexical Nouns**

In Gyegu Tibetan, nouns range from simple (monosyllabic and monomorphemic) to complex (multisyllabic and multimorphemic compounds). Unlike certain word classes such as adjectives, there is no specific morpheme or morphological form associated with lexical nouns in Gyegu Tibetan. However, as discussed in section 3.2.6, specific morphemes can be used to nominalize other parts of speech, particularly verb phrases. This section provides example word lists of nouns with different morphological characteristics before illustrating the defining morphosyntactic characteristics of nouns and noun phrases.

Examples of simple monosyllabic nouns are seen in (1).

(1) Monosyllabic nouns in Gyegu Tibetan

ɕm	ལིང	‘wood’
duo	རྩོ	‘stone’
kon	གངས	‘snow’
neʔ	ནད	‘disease’
ŋgo	མགོ	‘head’

Examples of disyllabic nouns are seen in (2).

(2) Disyllabic nouns in Gyegu Tibetan

dawa	ཟླ་བ	‘moon’
tʂoma	ཐོ་མ	‘Potentilla anserina root’
gomo	དགོང་མོ	‘evening’
lələ	ལེ་ལེ	‘cat’
ɲəma	ཉི་མ	‘sun’

Attested nouns which are longer than disyllabic tend to be either compounds or borrowings. Examples can be seen in (3).

(3) Larger multisyllabic nouns

himalaja	ཉི་མ་ལ་ཡ	‘Himalaya’
amriga	–	‘America’
lədzəp <sup>h</sup> ətʂan	–	‘shepherd’

All of the examples in (3) are either borrowings or compound nouns. For example, the word ‘Himalaya’ originally comes from Sanskrit, while the word for America is borrowed from English. The word for shepherd is a compound meaning roughly ‘sheep-behind/follow-boy-little’. Compound nouns are discussed further in 3.2.3.

Due to close contact and the bilingual nature of the Gyegu Tibetan community, many nouns are also borrowed from Chinese. These include Chinese words such as 星期 /cɨŋtɕʰi/ ‘week’ pronounced in Gyegu Tibetan as /çʰintɕʰi/ and 汽车 /tɕʰitɕʰi/ ‘car’ pronounced in Gyegu Tibetan as /tɕʰitɕʰe/. Although these borrowings are clearly phonologically related to their Chinese counterparts, they adhere to the phonology and phonotactics of Gyegu Tibetan, even when used by bilingual speakers. Many of these borrowings are new commodities that were not common before 1959.

An important morphosyntactic feature of lexical nouns is that they can serve as the head of a noun phrase, as seen in (4), where modified by an adjective.

- (4) /pʰə/ ‘boy’ as the head of an NP

pʰə tɕomo-ma  
 boy happy-ADJ  
 ‘the/a happy boy’

Lexical nouns may also take case marking. In (5), we see the noun /tɕʰə/ ‘dog’ marked with the ergative clitic /=gə/. The justification for the analysis of this case marker as a clitic is presented in section 3.2.2. In most instances, this case marking is obligatory. However, there are some exceptions where nouns occur without ergative case marking, which is discussed in detail in section 3.2.2.

- (5) Noun /tɕʰə/ ‘dog’ marked with ergative case (Gyg-056-Syn-D)

tɕʰə=gə çʰa sʰu tʰi  
 dog=ERG meat ate VIS.PFV  
 ‘The dog ate meat.’

Lexical nouns may also co-occur with determiners as in (6). However, as previously seen in (5), lexical nouns may also appear without determiners.

(6) /awo/ ‘man’ co-occurring with demonstrative /t<sup>h</sup>e/ (Gyg-013-Syn-M)<sup>a</sup>

[t<sup>h</sup>e            awo    t<sup>h</sup>e]<sub>NP</sub>        [t<sup>h</sup>e            aji            t<sup>h</sup>e=lə]<sub>NP</sub>            ka  
 DIST.DEM    man    DIST.DEM    DIST.DEM    woman    DIST.DEM=DAT    like  
 re?

COP.OTHER

‘The man likes the woman.’

---

<sup>a</sup>Note that nouns in Gyegu Tibetan can co-occur with two determiners, one before the noun and one after. This phenomenon is discussed further in section 3.5.

Example (6) also illustrates the clitic nature of case marking in Gyegu Tibetan, where the dative marker /lə/ is not affixed directly to the head noun /aji/ ‘woman’, but instead is attached to the entire noun phrase. This is discussed further in section 3.2.2.

Nouns may also receive indefinite marking as in (7).

(7) /lədzəp<sup>h</sup>ətɕan/ ‘little shepherd boy’ co-occurring with indefinite /tsai?/ (Gyg-012-Nar-M)

naniɕo    lə-dzə-p<sup>h</sup>ə-tɕan                    tsai? wo?    le    re?  
 long.ago sheep-behind-boy-little one    EXIST PST COP.OTHER  
 ‘Long ago there was a little shepherd boy.’

Finally, lexical nouns can also take plural morphology including the plural clitic /=non/, as seen in (8).

(8) /p<sup>h</sup>ə/ ‘boy’ marked for plurality

p<sup>h</sup>ənde    tɕəkə    tɕa=də            mə    p<sup>h</sup>ə=non    ts<sup>h</sup>e-ts<sup>h</sup>e    ndzo=də    tɕowu    ndzu  
 DIST.DEM soccer play=CONT REL boy=PL all-all    run=CONT very    quick  
 to

COP.ATT

‘All the boys who are playing soccer are very fast.’

### 3.2.2 Case Marking

Nouns are marked for case through a system of simple clitics. Here, I use Anderson’s (1992) definition of clitics as “phrasal affixes”. Anderson’s (1992) definition, based on Klavans’ (1980; 1985) analysis, describes the distribution of these case markers in Gyegu Tibetan well. These criteria can be seen in (9).

- (9) Anderson (1992: 203) clitic location parameters
- a. The clitic is located within some syntactic constituent (S vs. VP vs. NP, etc.) which constitutes its domain.
  - b. The clitic is located by reference to the (first vs. last vs. head) element of a specified sort within the constituent in which it appears.
  - c. The clitic (precedes vs. follows) this reference point.

Gyegu Tibetan is an ergative-absolutive language. The majority of modern Tibetic languages also share this ergative-absolutive alignment (Tournadre & Suzuki 2023), which can be traced back to Classical Tibetan (Tournadre 2010). There are six cases in Gyegu Tibetan: ergative, absolutive, dative, genitive, locative, and ablative<sup>2</sup>. The clitics used to mark these cases are seen in table (10). Although the ergative and genitive case markers are homophonous, justification for treating them as distinct cases is provided in this chapter.

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<sup>2</sup>Sun (2019: 259) also notes that =lə is used to mark the comitative and allative cases. In this dissertation, I treat the dative case marker /=lə/ as polysemic, and sometime gloss it as either DAT, COM, or ALL.

(10) Case marking clitics in Gyegu Tibetan

Case	Clitic
Ergative	=gə
Absolutive	–
Dative	=lə
Genitive	=gə
Locative	=la
Ablative	=ni

As seen in (10), the absolutive is the only case that is not overtly marked. An example sentence displaying this lack of overt absolutive case marking is seen in (11).

(11) Zero marking for the absolutive case (Gyg-013-Syn-M)

lələ=gə tɕ<sup>h</sup>ə bi ze reʔ  
 cat=ERG dog bite PRF COP.OTHER  
 ‘The cat bit the dog.’

Example (12) demonstrates ergative case marking and shows that in some transitive sentences, the subject is marked with ergative case, while the object is marked with the dative clitic rather than receiving absolutive case.

(12) Ergative case marking (Gyg-013-Syn-M)

[t<sup>f</sup>e awo t<sup>f</sup>e=gə]<sub>NP</sub> [tɕ<sup>h</sup>ə=lə]<sub>NP</sub> [ki [tɕ<sup>h</sup>embo-ma]<sub>AdjP</sub>]<sub>NP</sub> zi  
 DIST.DEM man DIST.DEM=ERG dog=DAT voice big-ADJ do  
 mbeʔ reʔ  
 yell OTHER  
 ‘The man yelled loudly at the dog.’

In certain instances, the ergative case marker may also be omitted. In the corpus,

this is most common in sentences where the object argument is overtly marked with the dative case. These constructions are reminiscent of so-called “quirky subjects” in languages such as Icelandic, where subjects co-occurring with certain verbs receive case marking not typically associated with subject arguments (Sigurðsson 1992). An example of this is shown in (13).

(13) The verb /ka/ ‘like/love’ assigning quirky case (Gyg-013-Syn-M)

[t <sup>h</sup> e	aji	t <sup>h</sup> e] <sub>NP</sub>	[t <sup>h</sup> e	awo	t <sup>h</sup> e=lə] <sub>NP</sub>	ka
DIST.DEM	woman	DIST.DEM	DIST.DEM	man	DIST.DEM=DAT	like
re?						
COP.OTHER						
‘The woman likes the man.’						

However, this lack of overt marking also occurs in sentences without the dative case. Example (14) displays this lack of overt ergative marking on the AGENT argument of a transitive clause.

(14) Lack of ergative case marking (Gyg-064-Syn-D)

t <sup>h</sup> e	awo	t <sup>h</sup> e	tɕ <sup>h</sup> its <sup>h</sup> e	dzən	də	sə	ŋgə
DIST.DEM	man	DIST.DEM	car	drive	CONT	PROG	VIS.OTHER
‘The man is driving a car.’							

Note that the ergative and genitive case marker are homophonous. Examples of the genitive case marker and ergative case marker can be seen in (15) and (12). As can be seen in these examples, the case markers affix to the entire noun phrase rather than the head of the noun phrase. Possession is expressed in multiple ways in Gyegu Tibetan. As will be discussed in section 3.4, some pronouns have a specific possessive form, and bare pronouns occurring directly before a noun may also be interpreted as possessive. Additionally, the genitive clitic /=gə/ is used to mark possession. Possession marking using the genitive /=gə/ is seen in (15).

- (15) Genitive case marking (Gyg-013-Syn-M)

t<sup>fi</sup>e          aji          t<sup>fi</sup>e=gə          komba  
 DIST.DEM woman DIST.DEM=GEN house  
 ‘the woman’s house’

Locative case marking is used to mark a location or direction, and frequently co-occurs with postpositions. Locative postpositions and their relationship with the locative case marker are discussed in further detail in section 3.2.5. Example (16) shows the locative /=la/ marking the location ‘under the tree’.

- (16) /=la/ marking a location (Gyg-010-Nar-M)

k<sup>h</sup>ər          tɕoma    ɕ<sup>fi</sup>aʔ=la          ɕə    san    le    reʔ  
 3SG.MASC tree    under=LOC die went PST COP.OTHER  
 ‘He went and died under the tree.’

However, locations do not obligatorily receive locative case marking. In example (17), the location /lɔdza/ ‘school’ appears without any case marking.

- (17) The location /lɔdza/ ‘school’ appearing without case marking (Gyg-040-Syn-M)

ŋa    p<sup>h</sup>açi    lɔdza    ndzo    reʔ          ba  
 1SG maybe school go    COP.OTHER GUESS  
 ‘I might go to school (today).’

The dative case is used to convey for whom something is done, or to whom something is given. Example sentence (18) demonstrates the use of the dative case.

(18) Dative case marker /=lə/ (Gyg-034-Syn-M)

dawa=gə ts<sup>h</sup>irɪn=lə tsamba di t<sup>h</sup>i  
Dawa=ERG Tsiren=DAT barley.flour give VIS.PFV  
'Dawa gave Tsiren tsampa.'

The allative case is used to convey motion to a given location. Example sentence (19) demonstrates the use of the allative case. As previously described, /=lə/ is a polysemous morpheme encompassing both the dative and allative cases.

(19) Allative case marker /=lə/ (Gyg-010-Nar-M)

ɲɪn-tseʔ çɪn non=lə ruɡun tsaiʔ tçə le reʔ  
day-one field in=ALL rabbit one run PST COP.OTHER  
'One day a rabbit ran into the field.'

The ablative case is used to convey motion away from a given location. Example sentence (20) demonstrates the use of the ablative case.

(20) Ablative case marker /=ni/ (Gyg-012-Nar-M)

rə-ha=ni dzə çaŋk<sup>h</sup>ə mombo t<sup>h</sup>an də sə ŋgə  
mountain-on=ABL come wolf many come CONT PROG VIS.OTHER  
'Many wolves are coming from the mountain.'

### 3.2.3 Compound Nouns

Although some disyllabic nouns in Gyegu Tibetan are monomorphemic, others are compounds formed by multiple morphemes. As mentioned in section 3.2.1, in many cases these longer nouns have been borrowed from other languages. However, in some cases these longer nouns are compounds. Some examples of compound nouns can be seen in (21).

(21) Examples of compound nouns in Gyegu Tibetan

- a. tɕ<sup>h</sup>ə-ŋgo  
water-head  
'water source'
  
- b. tɕəʔ-ŋoʔ  
iron-bamboo  
'pen'
  
- c. ts<sup>h</sup>on-k<sup>h</sup>on  
business-house  
'store'
  
- d. lə-dzə-p<sup>h</sup>ə-tɕan  
sheep-behind/follow-boy-little  
'shepherd'

Example (21c), demonstrates that some compound nouns can be formed by more than two morphemes. In this case, 'shepherd' also contains what appears to be a locative postposition which is functioning without the locative case marker /=la/. The morpheme /dzə/ 'behind/follow' may belong to another lexical category, or this may be a productive word formation process.

Compound nouns share the same syntactic behavior as simple nouns. They can serve as the head of a noun phrase, take case marking, co-occur with demonstratives, and occur with plural morphology.

### 3.2.4 Proper Nouns

Proper nouns present in the corpus include place names and personal names. Examples of popular personal names<sup>3</sup> are seen in (22).

(22) Popular personal names

Name	Tibetan script	English Transliteration
tʂaɕ <sup>h</sup> i	བཀྲ་ཤིས་	Tashi
ts <sup>h</sup> irɪn	ཚེ་རིང་	Tsiren
dawa	དྲཱ་བ་	Dawa
pɪma	པད་མ་	Pema
dodʒe	དོར་ཇེ་	Dorji

Examples of place names can be seen in (23). While the other examples in this list do not have a literal translation that can be decomposed into morphemes, /l̥as<sup>h</sup>a/ ‘Lhasa’ can be broken down into /l̥a/ meaning ‘Buddha’ and /s<sup>h</sup>a/ meaning ‘place’.

(23) Place name examples

Name	Tibetan script	English Transliteration
l̥as <sup>h</sup> a	ལྷ་ས་	Lhasa
tʂekə	རྩེ་ལྷོ་	Gyegu (both city and county)
pat <sup>h</sup> an	པང་ལ་	Batang
s <sup>h</sup> anla	མི་ལིང་	Xining

The suffix /-rɔ/ is often affixed to place names. This suffix is the first half of the word /rɔwa/ which means ‘ancestral home’, ‘native place’, or ‘tribe’. This suffix can also be used when referring to language varieties. Example (24) shows the multiple

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<sup>3</sup>It is traditional to have a monk or Lama name a child in Tibetan culture. Certain names such as Tashi and Dawa are generally considered to be male names, while names like Pema are considered female names.

ways to refer to Gyegu Tibetan, while (25) contains an example sentence with /-rɔ/ being used to mark a place.

(24) Endonyms for Gyegu Tibetan language

- a. tɕekə-kɪʔ  
Gyegu-language  
'Gyegu language'
- b. tɕekə-rɔ-kɪʔ  
Gyegu-place-language  
'Gyegu area's language'

(25) Example sentence with Gyegu marked with /-rɔ/ 'place'

tɕekə-rɔ      jɔʔ      reʔ  
Gyegu-place beautiful COP.OTHER  
'Gyegu is beautiful.'

The names of certain rivers and lakes are also found in the corpus. A word list containing examples is seen in (26).

(26) Geographic feature names

Name	Tibetan script	English Transliteration
t <sup>h</sup> atɕ <sup>h</sup> ə	--	River through Yushu
ndzɔtɕ <sup>h</sup> ə	འབྲི་ཚུ	Yangtze River
ts <sup>h</sup> oɲm	མཚོ་ལྗོན་པོ	Qinghai Lake

As previously seen in (18), just like other lexical nouns, proper nouns may also be marked for case. Example (18), which displays this case marking, is repeated here in (27).

(27) Proper nouns marked for case (Gyg-034-Syn-M)

dawa=gə ts<sup>h</sup>irɪn=lə tsamba di t<sup>h</sup>i  
 Dawa=ERG Tsiren=DAT barley.flour give VIS.PFV  
 ‘Dawa gave Tsiren tsampa.’

Although proper nouns can serve as the head of a noun phrase and be marked for case, there are no examples in the corpus of proper nouns co-occurring with determiners or plural morphology.

### 3.2.5 Locative Postpositions

Locative postpositions in Gyegu Tibetan are either monosyllabic or disyllabic. A list of these postpositions is seen in (28).

(28) Gyegu Tibetan Locative Postpositions

Name	English Translation
non	inside
s <sup>h</sup> ə	outside
t <sup>h</sup> uʔ	on
k <sup>h</sup> a	
ç <sup>h</sup> aʔ	under
p <sup>h</sup> ak <sup>h</sup> a	next to

As mentioned in section 3.2.2. locative postpositions often co-occur with the locative case marker /=la/. Examples of different locative postpositions marked with /=la/ are seen in (29)-(32).

(29) /k<sup>h</sup>a/ ‘above’ marked with locative case (Gyg-046-Syn-M)

dzutse k<sup>h</sup>a=la jon-jon zi petç<sup>h</sup>a  
 desk above=LOC put-put NMLZ book  
 ‘the book which I put on top of the table’

(30) /p<sup>h</sup>ak<sup>h</sup>a/ ‘next to’ marked with locative case (Gyg-010-Nar-M)

çm p<sup>h</sup>ak<sup>h</sup>a=la tçoma ze wo? re?  
 field next.to=LOC tree INDF EXIST COP.OTHER  
 ‘There is a tree near the field.’

(31) /ç<sup>h</sup>a?/ ‘under’ marked with locative case (Gyg-010-Nar-M)

[[t<sup>h</sup>e tçoma t<sup>h</sup>e]<sub>NP</sub> ç<sup>h</sup>a?=la]<sub>PP</sub> ?jɪ?  
 DIST.DEM tree DIST.DEM under=LOC sleep  
 ‘(The farmer is) sleeping under the tree.’

(32) /non/ ‘in’ marked with locative case (Gyg-015-Nar-M)

ɲm-tse? k<sup>h</sup>ər lo-ra non=la t<sup>h</sup>onk<sup>h</sup>u tç<sup>h</sup>embo-ma tsai? wo? le  
 day-one 3SG.MASC sheep-pen in=LOC hole big-ADJ one EXIST PST  
 re?  
 COP.OTHER  
 ‘One day, there was a large hole in his sheep pen.’

Locative postpositions may also occur without the locative case marker /=la/, as shown in (33).

(33) /non/ ‘in’ without locative case marking (Gyg-040-Syn-M)

tʂaç<sup>h</sup>i dza-ç<sup>h</sup>a-dza ɭodza non wo? re?  
 Tashi 100-divided-100 school in EXIST COP.OTHER  
 ‘Tashi is definitely in school.’

The cardinal directions of Gyegu Tibetan can be seen below in (34).

(34) Gyegu Tibetan Cardinal Directions

Name	Tibetan script	English Transliteration
tson	བྱང	North
ɕar	ཤར	East
lor	ལོག	South
noʔ	བྱུང	West

The cardinal directions in (34) were collected in isolation, and there are no examples of these words used in sentences in the corpus. As a result, it is not possible to precisely determine which lexical category they belong to.

### 3.2.6 Nominalization

There are several nominalizers in Gyegu Tibetan. They include /pa/, /mə/, /s<sup>h</sup>a/, /zi/, /le/, /k<sup>h</sup>i/, and /dzə/. These are typically used to nominalize verb phrases and play a large role in the syntax of the language. One major use of these nominalizers is to form relative clauses. Nominalization is discussed in further depth in Chapter 4. An example of non-relative clause nominalization is shown in (35).

(35) Nominalization example

ɕm-li-pa  
field-work-NMLZ  
farmer

In (35), we see that the noun /ɕm/ ‘field’, the verb /li/ ‘work’, and the nominalizer /pa/ are combined to form the word ‘farmer’.

## 3.3 Number

Numbers in Gyegu Tibetan occur post-nominally, as seen in (37a)-(37b). Number also plays a role in the pronominal system. However, verbs are not inflected to agree

with number.

A list of numbers can be seen in (36).

(36) Gyegu Tibetan Numbers

tsaiʔ	གཅིག	‘one’
ɲen	གཉིས	‘two’
san	གསུམ	‘three’
jə	བཞི	‘four’
ʔɲa	ལྔ	‘five’
tʂʰoʔ	རྒྱག	‘six’
dm	བདུན	‘seven’
dziʔ	བརྒྱད	‘eight’
gə	དགུ	‘nine’
tɕə	བཅུ	‘ten’
tɕətsaiʔ	བཅུ་གཅིག	‘eleven’
tɕəɲen	བཅུ་གཉིས	‘twelve’
tɕəsan	བཅུ་གསུམ	‘thirteen’
tɕəjə	བཅུ་བཞི	‘fourteen’
tɕəʔɲa	བཅུ་ལྔ	‘fifteen’
tɕədʒoʔ	བཅུ་རྒྱག	‘sixteen’
tɕədm	བཅུ་བདུན	‘seventeen’
tɕədziʔ	བཅུ་བརྒྱད	‘eighteen’
tɕəgə	བཅུ་དགུ	‘nineteen’
ɲeɕʰə	ཉི་ལུ	‘twenty’
səntɕʰə	སུམ་བཅུ	‘thirty’
jətɕʰə	བཞི་བཅུ	‘forty’
ʔɲatɕʰə	ལྔ་བཅུ	‘fifty’
tʂʰəʔtɕə	རྒྱག་བཅུ	‘sixty’

dmtɕə	བདཱན་བཅུ	‘seventy’
dzaɕ <sup>h</sup> ə	བརྒྱད་བཅུ	‘eighty’
gətɕ <sup>h</sup> ə	དགུ་བཅུ	‘ninety’
dza	བརྒྱ	‘one hundred’

Numbers in Gyegu Tibetan occur post-nominally, as seen in (37). However, numbers and the plural marker /non/ do not co-occur.

(37) Post-nominal numbers in Gyegu Tibetan

- a. s<sup>h</sup>uʔ tsai  
yak one  
‘one yak’
  
- b. s<sup>h</sup>uʔ ɲi  
yak two  
‘two yaks’

There is a post-nominal clitic /non/ used to indicate plurality. This can be added to both animate, as seen in (38) and inanimate noun phrases, as seen in (39). However, as seen in (37b), this plural marker does not co-occur with numbers.

(38) Animate noun marked with /=non/ (Gyg-012-Nar-M)

ɕɪn non=ni ɕɪn-li-pa=non ɕɪn li təna ti to reʔ  
 field in=ABL field-work-NMLZ=PL field work that in sit COP  
 ‘In the field there are a lot of farmers working.’

(39) Inanimate noun marked with /≠non/ (Pear Story - Wujin)

hintu=non sowo non ts<sup>h</sup>i lo t<sup>h</sup>i  
fruit=PL basket in forth pour VIS.PFV  
'(He) poured the fruit into the basket.'

Example (40) displays two sentences, one with a singular subject and one with a plural subject. However, neither the copula nor the lexical verb are inflected in either sentence, showing that verbs do not inflect for number in Gyegu Tibetan.

(40) Lack of number agreement in Gyegu Tibetan (Gyg-007-WL-M)

a. k<sup>h</sup>ər ɲa ka reʔ  
3SG.MASC 1SG.ABS like COP.OTHER  
'He likes me.'

b. k<sup>h</sup>ət<sup>fi</sup>əmbə ɲa ka reʔ  
3PL 1SG.ABS like COP.OTHER  
'They like me.'

Although verbs are not inflected for number, both pronouns and determiners are marked for number. The interaction between number, pronouns, and determiners is discussed in sections 3.4 and 3.5.

### 3.4 Pronouns

Pronouns in Gyegu Tibetan take a variety of forms which are affected by case, gender, and number. Additionally, there are two distinct sets of pronouns that are interchangeable. This section presents the variety of forms observed in Gyegu Tibetan and examines their functions.

In Gyegu Tibetan, different pronominal forms exist for absolutive and ergative

case, and pronouns are marked for number and gender. The pronoun paradigm for the absolutive case in Gyegu Tibetan is shown in table (41). Although Sun (2019) notes inclusive and exclusive forms of the first person plural pronoun and the third person plural pronoun in the Lab variety, I was unable to elicit these forms in Gyegu Tibetan. In Table (41), note that there is no specific 3rd person feminine plural form. Instead, /k<sup>h</sup>ətano/ is used as the 3rd person plural pronoun regardless of gender.

(41) Gyegu Tibetan Absolutive Pronouns - Yushu City

	Singular	Plural
1st person	ŋa	ŋətano
2nd person	hər	hətano
3rd person feminine	mər	k <sup>h</sup> ətano
3rd person masculine	k <sup>h</sup> ər	k <sup>h</sup> ətano

While the forms found in (41) are considered by speakers to be most strongly associated with Yushu City, there are alternative forms of the second and third person pronouns which are frequently used. The paradigm for these alternative forms can be seen in (42). In Gyegu Tibetan<sup>4</sup>, these forms are completely interchangeable with each other<sup>5</sup>, as seen in (43).

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<sup>4</sup>Sun (personal communication, October 24th, 2024) has noted that these forms are not interchangeable in quotative speech, and one of these sets are used as logophoric pronouns.

<sup>5</sup>I was told by consultants that /hər/, /mər/ and /k<sup>h</sup>ər/ are more stereotypically associated with Yushu City than /hoʔ/, /mo/, and /k<sup>h</sup>o/, which are associated more broadly with Yushu Prefecture.

(42) Gyegu Tibetan Absolutive Pronouns

	Singular	Plural
1st person	ŋa	ŋətano
2nd person	hoʔ	hətano
3rd person feminine	mo	k <sup>h</sup> ətano
3rd person masculine	k <sup>h</sup> o	k <sup>h</sup> ətano

(43) /hər/ and /hoʔ/ used interchangeably (Gyg-007-WL-M)

- a. həɾ ŋa ka reʔ  
2SG 1SG.ABS like COP.OTHER  
'He likes me.'
- b. hoʔ ŋa ka reʔ  
2SG 1SG.ABS like COP.OTHER  
'He likes me.'

In addition to the alternative forms of singular pronouns, /-t<sup>f</sup>əmbə/ is an alternative to the plural ending /-tano/. Once again, /-tano/ is more closely associated with Yushu City, although both forms are frequently used in daily speech. Plural pronouns ending in /-t<sup>f</sup>əmbə/ are seen in (44).

(44) Absolutive plural pronouns ending in /-t<sup>f</sup>əmbə/

	Plural /-t <sup>f</sup> əmbə/ form
1st person	ŋət <sup>f</sup> əmbə
2nd person	hət <sup>f</sup> əmbə
3rd person	k <sup>h</sup> ət <sup>f</sup> əmbə

Although the first person singular has a distinct ergative form, there is no corresponding form specific to the ergative case for second and third person pronouns in the /hər/, /mər/ and /k<sup>h</sup>ər/ paradigm. This can be seen in (45).

(45) Gyegu Tibetan Ergative Pronouns - Yushu City

	Singular	Plural
1st person	ŋi	ŋətano
2nd person	hər	həʔtano
3rd person feminine	mər	-
3rd person masculine	k <sup>h</sup> ər	k <sup>h</sup> ətano

While the ergative form of the first person singular pronoun is typically used to mark the agent of a transitive clause, as seen in (46), and the absolutive form is used to mark the single argument of an intransitive clause, as seen in (47). However, ergative case marking of the subject is optional, and the absolutive pronoun form can also be used to mark the agent of a transitive clause, as in (48).

(46) Ergative first person pronoun (Gyg-007-WL-M)

ŋi            k<sup>h</sup>ər            ka  
 1SG.ERG 3SG.MASC like  
 ‘I like him.’

(47) Absolutive first person pronoun

ŋa            dzo t<sup>h</sup>i  
 1SG.ABS full VIS.PFV  
 ‘I am full.’

- (48) Absolutive first person pronoun being used to mark the AGENT of a transitive clause (Gyg-027-Syn-M)

ŋa kʰapʰar dʒe də sə woʔ  
 1SG.ABS telephone hit DUR PROG EXIST  
 ‘I am making a phone call.’

As seen in (49), although the first person singular pronoun has a dedicated ergative form, the first person plural pronoun does not.

- (49) Lack of distinct ergative form for first person plural pronoun (Gyg-007-WL-M)

a. hoʔ ŋətʰəmbə ka reʔ  
 2SG 1PL like COP.OTHER  
 ‘You like us.’

b. ŋətʰəmbə hoʔ ka  
 1PL 2SG like  
 ‘We like you.’

Despite the first person singular being the only pronoun with a dedicated ergative form in the paradigm shown in (45), other pronouns can be overtly marked for ergative case using the ergative clitic /=gə/, as seen in (50).

- (50) Ergative marking of third person masculine pronoun (Gyg-048-Syn-M)

kʰər=gə sʰuʔ ʒa tʰi  
 3SG.MASC=ERG yak kill VIS.OTHER  
 ‘He killed the yak.’

Although the /hər/, /mər/ and /kʰər/ paradigm in (45) lacks distinct ergative

forms, the /hoʔ/, /k<sup>h</sup>o/, /mo/ paradigm shown in (42) does have distinct ergative forms for singular pronouns, which are seen in (51).

(51) Ergative singular pronoun forms

	Ergative pronoun
1st person	ŋi
2nd person	hu
3rd person feminine	mu
3rd person masculine	k <sup>h</sup> u

Example (52) demonstrates these ergative forms for the third person singular feminine and masculine pronouns.

(52) Ergative marking on third person feminine and masculine pronouns (Gyg-007-WL-M)

a. mu                    ŋa ka reʔ  
 3SG.FEM.ERG 1SG like COP.OTHER  
 ‘She likes me.’

b. k<sup>h</sup>u                    ŋa ka reʔ  
 3SG.MASC.ERG 1SG like COP.OTHER  
 ‘He likes me.’

There are multiple ways to denote possession using pronouns in Gyegu Tibetan. For the first person pronoun, there is a separate genitive form /ŋə/, as seen in (53)<sup>6</sup>. For second and third person pronouns, the absolutive pronoun can simply be placed

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<sup>6</sup>This is unexpected, considering that the genitive and ergative are syncretic elsewhere. However, this does lend support to the analysis that although these cases are homophonous elsewhere, they are distinct cases.

before the noun, as seen in (54) and (55).

(53) First person genitive form /ŋə/

ŋə           <sup>?</sup>ŋI=lə       tʂaɕ<sup>h</sup>i dzo   re?  
 1SG.GEN name=DAT Tashi called COP.OTHER  
 ‘My name is Tashi.’

(54) Second person bare possessive pronoun marking (Gyg-024-Syn-M)

hoʔ jeje   k<sup>f</sup>ana woʔ  
 2SG book where EXIST  
 ‘Where is your book?’

(55) Third person bare possessive pronoun marking (Gyg-015-Nar-M)

ɲm-tseʔ   k<sup>h</sup>ər lo-ra       non=la   t<sup>f</sup>onk<sup>h</sup>u   tɕ<sup>h</sup>embo-ma   tsai woʔ   le  
 day-one 3SG sheep-pen in=LOC hole       big-ADJ       one EXIST PST  
 reʔ                   ‘One day, there was a large hole in his sheep pen.’  
 COP.OTHER

In addition to the genitive clitic /=gə/, there is a separate genitive suffix /-t<sup>f</sup>eʔ/ that does not occur on lexical or proper nouns, but can be used with pronouns. The pronoun forms with the /-t<sup>f</sup>eʔ/ suffix are seen in table (56).

(56) Genitive case-marked pronouns in Gyegu Tibetan

	Singular	Plural
1st person	ŋa-t <sup>f</sup> eʔ	ŋət <sup>f</sup> əmbə-t <sup>f</sup> eʔ
2nd person	hoʔ-t <sup>f</sup> eʔ	hoʔt <sup>f</sup> əmbə-t <sup>f</sup> eʔ
3rd person feminine	mo-t <sup>f</sup> eʔ	-
3rd person masculine	k <sup>h</sup> o-t <sup>f</sup> eʔ	k <sup>h</sup> ət <sup>f</sup> əmbə-t <sup>f</sup> eʔ

An example phrase displaying /-t<sup>h</sup>eʔ/ possession is seen in (57).

(57) Pronoun possession using /-t<sup>h</sup>eʔ/

k<sup>h</sup>o-t<sup>h</sup>eʔ        ta  
 3SG.MASC-GEN horse  
 ‘his horse’

There are no true reflexive pronouns in Gyegu Tibetan. Instead, these constructions are formed by a possessive. Although (58) appears to be an instance of reduplication, it is actually a third person singular pronoun followed by the bare possessive pronoun construction discussed earlier. Example (59)<sup>7</sup> demonstrates this clearly, where the pronoun and possessive construction do not appear immediately adjacent to one another.

(58) Reflexive construction with adjacent pronouns (Gyg-046-Syn-M)

k<sup>h</sup>ər        k<sup>h</sup>ər        lapa tʂə t<sup>h</sup>i  
 3SG.MASC 3SG.MASC hand wash VIS.PFV  
 ‘He washed himself.’ (Lit. ‘He washed his hands.’)

(59) Reflexive example with pronouns not adjacent (Gyg-050-Syn-D)

k<sup>h</sup>ər        tʂ<sup>h</sup>aʒe=gə k<sup>h</sup>ər        lubo tɪm də tʂə ʒɪm to  
 3SG.MASC knife=ERG 3SG.MASC body on CONT cut ?PRF COP.ATT  
 ‘He cut himself with a knife.’ (Lit. ‘His knife cut his body.’)

### 3.5 Determiners

Gyegu Tibetan has a system of proximal and distal demonstratives. Although there is a dedicated indefinite marker, there are no dedicated definite markers that are not also demonstratives. Instead, demonstratives are used to serve the purpose

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<sup>7</sup>This sentence may be ambiguous, and could be interpreted as ‘He<sub>i</sub> washed his<sub>j</sub> hands.’

of marking definiteness. Additionally, the word /tsaiʔ/ ‘one’ can be used to mark a noun as indefinite.

The definite demonstratives can be seen in (60). This is similar to the demonstrative system in the Lab variety described by Sun (2019: 214)<sup>8</sup>. The demonstratives listed under the ‘Distal 1’ category can be translated as ‘that/those over there’, while the demonstrative listed under ‘Distal 2’ can be translated as ‘that’. However, the precise difference between these demonstratives remains unclear.

(60) Gyegu Tibetan demonstratives

	Proximal	Distal 1	Distal 2
Singular	ənde	p <sup>h</sup> e/p <sup>h</sup> ənde	t <sup>fi</sup> e
Dual	əndɛjɛn	p <sup>h</sup> ujɛjɛn	–
Plural	əndet <sup>fi</sup> əmbə	p <sup>h</sup> ujet <sup>fi</sup> əmbə/p <sup>h</sup> uje	–

The difference between singular proximal and distal demonstratives can be seen in (61) and (62). Note that if multiple demonstratives are used to refer to a single noun, both demonstratives must agree and be either +proximal or +distal.

(61) Proximal demonstrative /ənde/ (Gyg-024-Syn-M)

ənde      tɕəʔpəʔ ənde      nabo reʔ  
 PROX.DEM pen      PROX.DEM black COP.OTHER  
 ‘This pen is black.’

(62) Distal demonstrative /p<sup>h</sup>ənde/

p<sup>h</sup>ənde    ŋa      mbi=də    k<sup>hi</sup>    tɕ<sup>h</sup>ə t<sup>fi</sup>e      reʔ  
 DIST.DEM 1SG.ABS bite=CONT NMLZ dog DIST.DEM COP.OTHER  
 ‘That is the dog who bit me.’

<sup>8</sup>According to Sun (2019: 214-215), the dual form of the distal demonstrative /t<sup>fi</sup>e/ in the Lab variety is /t<sup>fi</sup>ɛjɛni/ and the plural form is /t<sup>fi</sup>etəmbə/. However, neither of these forms are present in the corpus of Gyegu Tibetan.

Examples of the dual form of the distal demonstrative is seen in (63).

(63) Distal dual demonstrative (Gyg-046-Syn-M)

p<sup>h</sup>uje-ɲen    ɲi            k<sup>h</sup>ua t<sup>h</sup>aŋ    zi    k<sup>h</sup>ənde reʔ  
 DIST.DEM-DU 1SG.ERG soup drink NMLZ spoon COP.OTHER  
 ‘Those are the two spoons I eat soup with.’

Plural distal demonstratives marking arguments larger than dual have multiple forms. One form adds the plural suffix /-t<sup>h</sup>əmbə/ to the distal demonstrative /p<sup>h</sup>uje/, as seen in (64), while the other is made by combining the distal demonstrative /p<sup>h</sup>uje/ with a number, as seen in (65).

(64) Distal plural demonstrative /p<sup>h</sup>ujet<sup>h</sup>əmbə/ (Gyg-046-Syn-M)

p<sup>h</sup>ujet<sup>h</sup>əmbə ɲi            rai=də    zi    s<sup>h</sup>uʔ saŋ    t<sup>h</sup>e            reʔ  
 DIST.DEM.PL 1SG.ERG see=CONT NMLZ yak three DIST.DEM COP.OTHER  
 ‘Those are the three yaks that I saw.’

(65) Distal plural demonstrative /p<sup>h</sup>uje/ + number (Gyg-048-Syn-M)

p<sup>h</sup>uje            saŋ    ɲa    tsamba    ɲo    s<sup>h</sup>a    ts<sup>h</sup>on-k<sup>h</sup>on    reʔ  
 DIST.DEM.PL three 1SG barley.flour buy NMLZ business-house COP.OTHER  
 ‘Those are the three stores I buy tsampa at.’

There is variety in the number and position of determiners marking a single noun. Nouns may appear with no overt determiner, as in (66), a single determiner before the noun, as in (67), a single determiner after the noun, as in (68), multiple determiners appearing both before and after the noun, as in (69), or up to three determiners if the noun is modified by an adjective, as in (70).

- (66) Bare nouns (Gyg-013-Syn-M)

tɕ<sup>h</sup>ə=gə lələ bi ze re?  
 dog=ERG cat bite PRF COP.OTHER  
 ‘The dog bit the cat.’

- (67) Single determiner before a noun (Gyg-012-Nar-M)

təni [t<sup>fi</sup>e ɕi-li-pa=non tɕ<sup>h</sup>e-tɕ<sup>h</sup>e]<sub>NP</sub>  
 and.then DIST.DEM field-work-NMLZ=PL all-all  
 ‘Then all the farmers...’

- (68) Single determiner after a noun (Gyg-012-Nar-M)

təni [lədzəp<sup>fi</sup>ətɕan t<sup>fi</sup>e=gə]<sub>NP</sub> s<sup>h</sup>en non madze jo wo? le ma  
 and.then shepherd DIST.DEM=ERG heart in at.all put EXIST PST NEG  
 ‘However, the shepherd didn’t take it to heart.’

- (69) Multiple determiners (Gyg-013-Syn-M)

[t<sup>fi</sup>e awo t<sup>fi</sup>e]<sub>NP</sub> [t<sup>fi</sup>e aji t<sup>fi</sup>e=lə]<sub>NP</sub> ka  
 DIST.DEM man DIST.DEM DIST.DEM woman DIST.DEM=DAT like  
 re? ‘The man loves the woman.’  
 COP.OTHER

- (70) Three determiners with a single noun phrase (Gyg-065-Syn-D)

[t<sup>fi</sup>e zorəmbo-ma t<sup>fi</sup>e awo t<sup>fi</sup>e]<sub>NP</sub> [p<sup>h</sup>e aji=lə]<sub>NP</sub>  
 DIST.DEM tall-ADJ DIST.DEM man DIST.DEM DIST.DEM woman=DAT  
 meɕu jm t<sup>hi</sup>  
 flowers give VIS.PFV  
 ‘The tall man gave the woman flowers.’

The indefinite determiners of Gyegu Tibetan consist of the number ‘one’ /tsai?/

and the indefinite morpheme /ze/. In (71), we see /tsaiʔ/ used as an indefinite marker.

- (71) /tsaiʔ/ marking indefinite (Gyg-010-Nar-M)  
 ɲm-tseʔ çm non=lə rugun tsaiʔ tço le reʔ  
 day-one field in-ALL rabbit one run PST COP.OTHER  
 ‘One day a rabbit ran into the field.’

The word /ze/ is a dedicated indefinite marker, and performs this function in example (72). This example is taken from a narrative, where the farmer is being introduced for the first time.

- (72) /ze/ marking indefinite (Gyg-010-Nar-M)  
 naniço çm-li-pa ze woʔ reʔ  
 long.ago field-work-NMLZ INDF EXIST COP.OTHER  
 ‘Long ago there was a farmer.’

After the farmer has been introduced to the discourse, the definite distal demonstrative /t<sup>fi</sup>e/ is used, as seen in (73).

- (73) /t<sup>fi</sup>e/ marking definiteness (Gyg-010-Nar-M)  
 niti çm-li-pa t<sup>fi</sup>e gan tço wo le reʔ  
 and.then field-work-NMLZ DEM happy very EXIST PST COP.OTHER  
 ‘And then the farmer was very happy.’

### 3.6 Adjectives

This section describes the morphology and syntax of adjectives in Gyegu Tibetan. Adjectives in Gyegu Tibetan modify a head noun, occur postnominally, and take a set of suffixes or endings that do not occur on other lexical categories.

### 3.6.1 Adjectival Endings

There are several endings that commonly mark adjectives in Gyegu Tibetan. Sun (2019) analyses these endings as suffixes, although it is unclear whether these are truly productive suffixes synchronically. These endings include: /bo/, /ba/, /mbo/, /mba/, /mo/, and /ma/<sup>9</sup>. The suffix /-ma/ does not occur on ‘bare’ adjectives without one of these other endings, and may only occur after another adjectival ending has been affixed to the adjective stem. Adjectives in Gyegu Tibetan occur postnominally, as seen in (74)<sup>10</sup>.

(74) Adjective position

k<sup>hi</sup> kabo  
yak white  
‘white yak’

Examples of adjectives that take the /mbo/ ending can be seen in (75).

(75) /mbo/ adjectives in Gyegu Tibetan

tɕ <sup>h</sup> embo	ཚེན་པོ	‘big’
rimbo	རིང་པོ	‘long/tall’
kɔmbo	སྐམ་པོ	‘dry’
kumbo	དགོན་པོ	‘rare/uncommon’
mombo	མང་པོ	‘many’

These adjectives sometimes appear without the /mbo/ ending, particularly in citation form. An example of a bare /mbo/ adjective can be seen in (76). It is possible that adjectives appear without additional morphology when used as a predicate, as

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<sup>9</sup>Sun (2019) also notes the suffixes /-wa(?)/, /-wo/, and /-wā/. However, these do not occur in our corpus of Gyegu Tibetan.

<sup>10</sup>Note that there are multiple words for ‘yak’. Both s<sup>hi</sup>u? and k<sup>hi</sup> describe the same animal.

is the case in (76).

(76) Big appearing without /mbo/ (Gyg-003-WL-M)

hoʔ k<sup>h</sup>a tʂamo tʂ<sup>h</sup>e to  
 2SG mouth very big COP.ATT  
 ‘Your mouth is very big.’

Adjectives ending in /mbo/ may also co-occur with the adjectival suffix /-ma/, as seen in (77). In this case, the adjective is attributive rather than a predicate, which may explain the presence of the additional adjectival morphology.

(77) Adjective marked with /-ma/ (Gyg-048-Syn-M)

t<sup>h</sup>e s<sup>h</sup>uʔ kabo tʂ<sup>h</sup>embo-ma t<sup>h</sup>e=gə ŋi dʒa ts<sup>h</sup>e-ts<sup>h</sup>e sa  
 DIST.DEM yak white big-ADJ DIST.DEM=ERG 1SG grass all-all eat  
 ts<sup>h</sup>oʔ t<sup>h</sup>i  
 SENS.SELF VIS.PFV  
 ‘The big white yak ate all of my grass.’

The only example of a non-color adjective ending in /bo/ in the corpus is /ndoʔbo/ ‘fast’. However, this is a common ending for many colors. Examples are given in (78).

(78) Colors ending in /bo/

mabo	མང་ལོ	‘red’
nabo	ནག་ལོ	‘black’
kabo	དཀར་ལོ	‘white’
məbo	–	‘brown’

Examples of adjectives ending in /mba/ are listed in (79).

(79) /mba/ adjectives in Gyegu Tibetan

nimba ལྷིང་བ་ ‘old/ancient’  
limba ལྷོན་བ་ ‘wet’

Examples of adjectives ending in /mo/ are listed in (80).

(80) /mo/ adjectives in Gyegu Tibetan

ŋamo ལྷ་མོ་ ‘early’  
kamo དཀའ་མོ་ ‘hard/difficult’  
mamo – quiet

Examples of adjectives ending in /ba/ are listed in (81).

(81) /ba/ adjectives in Gyegu Tibetan

saba གསར་བ་ ‘new’

### 3.6.2 Adjectives as Manner Adverbs

In Gyegu Tibetan, adjectives are commonly used to convey information that is conveyed using manner adverbs in languages such as English. This can be seen in (82) and (83).

(82) ‘Fast’ as a manner adverb (Gyg-013-Syn-M)

[[s<sup>fi</sup>u=non ndzoʔbo-ma]<sub>NP</sub> dzoʔ=də s<sup>h</sup>ə]<sub>VP</sub> ŋgə  
yak=PL fast-ADJ run=CONT PROG VIS.OTHER  
‘The yaks are running quickly.’ (Lit. ‘The fast yaks are running.’)

(83) ‘Big’ as a manner adverb (Gyg-013-Syn-M)

t<sup>h</sup>e            t<sup>h</sup>ə t<sup>h</sup>e            ki?    t<sup>h</sup>embo-ma zo=də            s<sup>h</sup>ə    ŋgə  
 DIST.DEM dog DIST.DEM voice big-ADJ            bark=CONT PROG VIS.OTHER  
 ‘The dog is barking loudly.’ (Lit. ‘The dog is big voice barking.’)

### 3.6.3 Reduplication

Some adjectives may be reduplicated in Gyegu Tibetan. When adjectives are reduplicated, the meaning of the word is intensified. The example sentence (84) contains the word /t<sup>h</sup>e/ ‘all’ reduplicated.

(84) Adjective reduplication (Gyg-012-Nar-M)

on    çajk<sup>h</sup>ə t<sup>h</sup>an sə    ŋgə            dzo t<sup>h</sup>e-t<sup>h</sup>e=lə mbe wo?    le  
 again wolf    come PROG VIS.OTHER say all-all=ALL yell EXIST PST  
 re?                    ‘He’s yelling to tell everyone that the wolf is coming again.’  
 COP.OTHER

## 3.7 Adverbs

This section discusses time, degree, and manner adverbs. Unlike adjectives, there are no endings that are specifically associated with adverbs. Adverbs can be distinguished from adjectives because they occur before the verbs or adjectives that they modify, and do not occur with adjectival endings. A list of time and degree adverbs found in the corpus are provided in sections 3.7.1 and 3.7.2. As discussed in section 3.6, many concepts that would be expressed using manner adverbs in other languages are expressed as adjectives in Gyegu Tibetan. However, as will be discussed in section 3.7.3, there are a limited number of manner adverbs that do not behave this way morphologically.

### 3.7.1 Time

Just as Sun (2019) observed in the Lab dialect, time adverbs in Gyegu Tibetan can generally be separated into temporal quantity type and time relation type. A list of temporal quantity type adverbs is seen in (85).

(85) Temporal quantity adverbs

nojina	ནམ་ཡིན་ན	‘always; whenever’
ɲimatela	ཉི་མ་དེ་ལ	‘every day; daily’
tɕontɕon	རྒྱ་རྒྱ	‘always; all the time’
nojenome	-	‘occasionally’

Table (86) displays time relation type adverbs found in the corpus.

(86) Time relation adverbs in Gyegu Tibetan

t <sup>h</sup> əni	དེ་ནས	‘then; afterwards’
napi	ན་ཉིང	‘last year; long ago’
izni	-	‘right now’
ta	ད	‘now; presently’
t <sup>h</sup> ata	ད་ལྟ	‘now; at the moment’
t <sup>h</sup> edə	དེ་དུས	‘at that time’

These time relation adverbs relate the time in which a particular event occurred to another reference time. Examples such as /izni/ ‘right now’, /t<sup>h</sup>ata/ ‘now; at the moment’, and /napi/ ‘last year; long ago’ typically relate a particular event to the moment of the utterance. /t<sup>h</sup>əni/ ‘then; afterwards’ and /t<sup>h</sup>edə/ ‘at that time’ may denote the time of an event in relation to another event that was previously introduced in the discourse. /t<sup>h</sup>əni/ ‘then; afterwards’ and /t<sup>h</sup>edi/ ‘at that time’ are particularly prevalent in narratives.

An example sentence containing a time relation adverb is seen in (87).

(87) Time relation adverb example (Gyg-012-Nar-M)

təni t<sup>fi</sup>e ɲɪma ts<sup>h</sup>en on ʒaŋk<sup>h</sup>ə t<sup>h</sup>an le reʔ  
and.then DIST.DEM day late again wolf come PST COP.OTHER  
'And then that (day's) night the wolf came again.'

### 3.7.2 Degree

Degree adverbs in Gyegu Tibetan convey the intensity or extent of an action or the degree to which an adjective characterizes an object. A list of degree adverbs is shown in (88).

(88) Degree adverbs in Gyegu Tibetan

tʂamo ལྷག་མོ་ 'exceptionally'  
kapa – 'very'  
wəhə – 'most'

An example sentence include the degree adverb /tʂamo/ is seen in (89).

(89) Degree adverb /tʂamo/ 'exceptionally' example sentence (Gyg-012-Nar-M)

tʂamo tʂəʔ woʔ le reʔ  
exceptionally afraid EXIST PST COP.OTHER  
'They were exceptionally afraid.'

An example sentence including the degree adverb /kapa/ 'very' is seen in (90).

(90) Degree adverb /kapa/ ‘very’ example sentence

[kapa dzə]<sub>AdjP</sub> woʔ ma  
 very heavy EXIST NEG  
 ‘It is not very heavy.’

However, /kapa/ can also serve as an adjective meaning ‘many’, as seen in (91).

(91) /kapa/ ‘many’ as an adjective (Gyg-015-Nar-M)

k<sup>h</sup>ər [lo kapa]<sub>NP</sub> ts<sup>h</sup>o to woʔ reʔ  
 3SG.MASC sheep many take COP.ATT EXIST COP.OTHER  
 ‘He owned many sheep.’

### 3.7.3 Manner

The only manner adverb found in the corpus that is entirely morphologically distinct from adjectives is /k<sup>f</sup>ale/ ‘slowly’ seen in (92).

(92) /k<sup>f</sup>ale/ ‘slowly’ as a manner adverb (Gyg-012-Nar-M)

t<sup>f</sup>e ʧaŋk<sup>h</sup>ə k<sup>f</sup>ale k<sup>h</sup>ər s<sup>h</sup>a t<sup>h</sup>an reʔ  
 DIST.DEM wolf slowly 3SG.MASC place come COP.OTHER  
 ‘The wolf slowly came to where he was.’

Additionally, /ndzuʔ/ and /ndzuʔbo/ ‘fast’ are found in the Gyegu Tibetan corpus. This lexical item sometimes behaves morphologically and syntactically as an adjective. However, an adverbial suffix /dzeʔ/ can also be affixed to this adjective to turn it into a manner adverb. This adverbial suffix is shown in (94). This adverbial suffix does not appear with any other lexical items in the corpus<sup>11</sup>.

<sup>11</sup>Sun (2019) also notes that in the Lab variety, the adverb /ndzoʔ/ ‘quickly’ appears to be morphologically and syntactically distinct from adjectives. Sun also notes that there is a dedicated adverb morpheme /dziʔ/. An example sentence from the Lab variety, showing /ndzoʔ/ ‘quickly’ and the adverb morpheme /dziʔ/, is seen in (93).

(94) Adverbial suffix /dzeʔ/ (Gyg-060-Syn-D)

ŋa p<sup>h</sup>o=la ndzuʔ-dzeʔ ndzoʔ le  
 1SG there=LOC fast-ADV run PST  
 ‘I ran there quickly.’

### 3.8 Interjections

There are several common interjections in Gyegu Tibetan. The most common are reactions to cold, heat, pain, annoyance, etc. A short list of interjections and their English equivalent can be seen in (95).

(95) Interjections in Gyegu Tibetan

atɕ <sup>h</sup> u	ཨ་རྩུས	‘brr!’ (reaction to cold)
ats <sup>h</sup> a	ཨ་ཚ	‘ouch!’ (reaction to burning or sharp pain)
a	ཨ	‘yeah?’ (used to answer someone calling, or to ask someone to repeat themselves)
ao	ཨ་འོ	‘wow!’ (an amazed or suprised reaction)

### 3.9 Verbs

This section describes lexical verbs, auxiliaries, and copulas found in Gyegu Tibetan, as well as the notions of transitivity, control, tense, aspect, mood, and negation, all of which interact with verbs in significant ways. Lexical verbs can serve as the predicate of a clause and the head of a verb phrase, may have alternative present, past, and imperative forms, and follow the syntactic object and precede aspectual and evidential auxiliaries and copulas. Auxiliary verbs and copulas convey informa-

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(93) /ndzoʔ/ ‘quickly’ as a manner adverb in the Lab variety adapted from Sun (2019: 178)

lɑʔ=ndzəp zɛʔ nzoʔ=dziʔ s<sup>h</sup>ɛ̃  
 late=go FACT quick=ADV walk:IMP  
 ‘We’re going to be late. Hurry up!’

tion related to aspect, evidentiality, and egophoricity and can take the interrogative prefix /əʔ-/ or be negated by /ma-/ or /mə-/.

### 3.9.1 Lexical Verbs

Lexical verbs in Gyegu Tibetan are typically monosyllabic. They may be inflected for tense. However, aspect, egophoricity, and evidentiality are all marked using separate auxiliaries and copulas.

Many verbs in Gyegu Tibetan have different present, past, and imperative forms. These are differentiated by vowel alternation. However, there are some verbs for which this alternation does not exist. Examples of this verb class can be seen in (96).

(96) Verbs that lack different present-past-imperative forms

English translation	Tibetan Script	Present	Past	Imperative
‘to speak’	བཤད	çi	çi	çi
‘to do’	ལས	li	li	li
‘to think’	ཚེན	tʂen	tʂen	tʂen
‘to teach’	སྦྱབ	tʂaʔ	tʂaʔ	tʂaʔ

Some verbs have the same present and past forms, but have a different imperative form. Examples of this verb class are seen in (97).

(97) Verbs with the same present and past forms

English translation	Tibetan Script	Present	Past	Imperative
‘to hear’	མོ	ko	ko	ti
‘to breathe’	–	oŋon	oŋon	oŋun
‘to go’	–	ŋo	ŋo	ŋu

Many verbs share the same form for the past and imperative, but have a different form in the present tense. Examples of this verb class are seen in (98).

(98) Verbs with the same past and imperative forms

English translation	Tibetan script	Present	Past	Imperative
'to eat'	ལ	s <sup>h</sup> a	s <sup>h</sup> u	s <sup>h</sup> u
'to go'	ཕྱིན	ndzɔ	san	san
'to tell'	ལྟུང	dzɔn	dzun	dzun
'to write'	ཡི་ཤེས་	tʂɪ	tʂə	tʂə
'to sew'	–	zo	zu	zu
'to throw'	–	p <sup>h</sup> in	p <sup>h</sup> on	p <sup>h</sup> on

Some verbs have the same present and imperative forms, but a different past tense form. Examples of this verb class are seen in (99).

(99) Verbs with the same present and imperative forms

English translation	Tibetan script	Present	Past	Imperative
'to fly'	འཕྱིར	p <sup>h</sup> ə	p <sup>h</sup> uʔ	p <sup>h</sup> ə

Finally, some verbs have three distinct forms for the present tense, past tense, and imperative. Examples of this verb class are seen in (100).

(100) Verbs with three different forms

English translation	Tibetan script	Present	Past	Imperative
'to hit'	ལྟུང	dziʔ	dzaʔ	dzoʔ
'to watch/read'	ཤེས་	ta	ti	tu
'to boil'	ཕྱིན	k <sup>h</sup> i	k <sup>h</sup> ə	ki

As seen in examples (101a)-(101b), the lexical verb /s<sup>fi</sup>a/ ‘to eat’ serves as the predicate of a clause, the head of a verb phrase, has alternative present and past forms, follows the syntactic object, and precedes aspectual and evidential auxiliaries.

(101) /s<sup>fi</sup>a/ ‘to eat’ present and past forms behaving as typical lexical verbs  
(Gyg-002-WL-M)

- a. k<sup>h</sup>ər        s<sup>fi</sup>ama s<sup>fi</sup>a də    sə    ŋgə  
3SG.MASC food eat CONT PROG VIS.OTHER  
‘He is eating.’
- b. k<sup>h</sup>ər        s<sup>fi</sup>ama s<sup>fi</sup>u t<sup>h</sup>i  
3SG.MASC food ate VIS.PFV  
‘He ate food.’

Notice that the verb in (101b) is marked for past tense, and an auxiliary verb denoting perfective aspect is also used. This interaction between tense and aspect marking is discussed further in section 3.9.5.

### 3.9.2 Complex Verbs

While most lexical verbs in Gyegu Tibetan are monosyllabic, some are morphologically complex. A list of morphologically complex verbs is found in (102).

(102) Complex verbs in Gyegu Tibetan

- a. daiju-tse  
stare-do  
'staring'
  
- b. rə-bei  
mountain-outside  
'run away'
  
- c. p<sup>h</sup>o-s<sup>f</sup>u  
away-ate  
'took away and ate'

The type of complex verb seen in (102a), formed by combining a lexical verb with /tse/ 'do', is relatively common. Other examples of this type are seen in (103).

(103) /tse/ 'do' type complex verbs

- a. kə-tse  
steal-do  
'steal'
  
- b. jon-tse  
put-do  
'put'

While the meaning of the complex verbs in (102a) and (102c) are semantically transparent, the meaning of the compound in (102b) is exocentric and semantically opaque. The meaning of (102b) is related to the fact that Yushu City is completely surrounded by mountains on all sides. Before modern transportation, crossing these

mountains was difficult. If someone wanted to run away, they would go “outside the mountains” where it would be difficult to chase them, giving /rəbei/ the meaning of ‘run away’.

The verb /ru/ ‘help’ is used as a benefactive, which indicates that an action was done on behalf of another person. It appears after the main verb and before sentence final auxiliaries, and always co-occurs with the light verb /ts<sup>hi</sup>/ ‘do’. Example (104) demonstrates this construction.

(104) /ru/ ‘help’ example 1 (Gyg-059-WL/Syn-D)

ama    ɲa    mimba=lə    k<sup>h</sup>ap<sup>h</sup>ar dza ru    ts<sup>hi</sup> ts<sup>h</sup>an  
 mother 1SG doctor=DAT phone hit help do PFV  
 ‘My mother called the doctor for me.’

There is an alternative form of this verb, pronounced as /rup<sup>h</sup>a/ ‘help’, which also co-occurs with the light verb /ts<sup>hi</sup>/ ‘do’, as shown in example (105).

(105) /rup<sup>h</sup>a/ ‘help’ example 2 (Gyg-012-Nar-M)

k<sup>h</sup>ər            rup<sup>h</sup>a ts<sup>hi</sup> san le    reʔ  
 3SG.MASC help do go PST COP.OTHER  
 ‘They went to help him.’

### 3.9.3 Transitivity

Previous authors including Tournadre and Dorje (2003) and Bartee (2007) have noted that many modern Tibetan varieties have verb pairs, one of which is more “transitive” and the other more “intransitive”. Sun (2019) also notes this phenomenon in the Lab variety, but characterizes it as a distinction between “simple action” vs “resultative action”. Still other authors use different terminology including Matisoff’s (2003) use of “inner-directed states or actions” and “outer-directed action” and Tournadre and Dorje’s (2003) use of “resultative” and “causative”.

Such pairs also exist in Gyegu Tibetan, which I classify as a “transitive” vs “intransitive” distinction. The differences between the verb pairs can surface in multiple ways. For example, the initial consonant could differ between aspirated and unaspirated, voiced and voiceless, or prenasalized and plain. A table containing examples of these verb pairs can be seen in (106).

(106) Intransitive and transitive verb pairs in Gyegu Tibetan

Intransitive form	Gloss	Transitive form	Gloss
k <sup>h</sup> ə	‘boil’	kə	‘make boil’
tɕaʔ	‘to break’	dzaʔ	‘to break intentionally’
mbə	‘to burn’	bə	‘make burn’

### 3.9.4 Control and Intention

Previous authors including Bartee (2007) have discussed the role that control and intention play in Tibetan morphology and syntax. According to Bartee (2007: 126) “control verbs are verbs over which a first-person agentive argument can exert control.” and “non-control verbs are verbs over which a first-person agentive argument cannot exert control.” While this distinction does exist in Gyegu Tibetan, the forms of these control versus non-control forms do not appear to be phonologically related.

Two examples are shown in (107).

(107) Control and non-control verbs in Gyegu Tibetan

Control	Gloss	Non-control	Gloss
ta	‘to look at’	rai	‘to see’
ɲa	‘to listen’	guo	‘to hear’

### 3.9.5 TAM Inventory

As discussed in section 3.9.1, many verbs have different present tense and past tense forms. In addition to these verb forms, there is a future tense that is constructed using the modal verb /gu/ meaning ‘want’ or ‘need’. Additionally, Gyegu Tibetan marks aspect using sentence final auxiliaries which include the categories of perfect, perfective, continuous, and progressive.

Although there is no realis/irrealis distinction, the conditional, interrogative, and imperative mood are expressed morphologically. Table (108) displays the tense, aspect, and mood inventory of Gyegu Tibetan.

(108) TAM inventory

Tense	Aspect	Mood
Past	Perfect	Conditional
Present	Perfective	Interrogative
Future	continuous	Imperative
	Progressive	

In addition to tense, aspect, and mood, the language makes use of modal verbs including /t<sup>h</sup>o/ ‘can’, /gu/ ‘need, want’<sup>12</sup>, and /p<sup>h</sup>ə/ ‘dare’, in addition to the adverb /p<sup>h</sup>açi/ ‘maybe’. These modal verbs interact with the pervasive evidentiality system used in the language. This evidentiality system is discussed in detail in Chapter 4.

The present verb form can co-occur with the perfect, perfective, continuous, and progressive aspect. Examples of the present tense verb /s<sup>h</sup>a/ ‘to eat’ occurring with these aspect markers is seen in (109)-(111).

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<sup>12</sup>The verb /gu/ can also be used to convey the meaning of ‘should’, as well as the future tense.

- (109) Present tense /s<sup>fi</sup>a/ ‘to eat’ with perfect aspect auxiliary

ŋa        s<sup>fi</sup>a ts<sup>h</sup>oŋ  
1SG.ABS eat SENS.SELF  
‘I have eaten.’

- (110) Present tense /s<sup>fi</sup>a/ ‘to eat’ with perfective aspect auxiliary

mo        s<sup>fi</sup>a t<sup>hi</sup>i  
3SG.FEM eat VIS.PFV  
‘She ate.’ (And I witnessed it.)

- (111) Present tense /s<sup>fi</sup>a/ ‘to eat’ with continuous and progressive aspect auxiliaries (Gyg-002-WL-M)

mo        s<sup>fi</sup>a də    sə    ŋgə  
3SG.FEM eat CONT PROG VIS.OTHER  
‘She is eating.’ (And I am witnessing it.)

The present tense verb form may also occur with the modal verb /gu/, which is used to mark the future tense. This is seen in (112).

- (112) Present tense /s<sup>fi</sup>a/ ‘to eat’ with future tense modal verb /gu/

ŋa        s<sup>fi</sup>a gu  
1SG.ABS eat want  
‘I will eat.’ (Lit. ‘I want to eat.’)

In the corpus, the future modal auxiliary only occurs with the present tense forms of verbs. There are no instances where it occurs with the past tense form of a verb. Furthermore, there are no instances of the future tense modal auxiliary occurring with perfect or perfective aspect. However, it does occur with the progressive aspect, as seen in (113).

(113) Future modal auxiliary /gu/ with progressive aspect (Gyg-040-Syn-M)

tʃaɕ<sup>hi</sup> lɔdʒa non ndzɔ gu sə woʔ reʔ  
Tashi school in go need PROG EXIST COP.OTHER  
'Tashi should go to school today.'

The conditional can occur in the same clause with the past tense verb form, as seen in (114).

(114) Conditional /nə/ with the past tense /s<sup>hi</sup>u/ 'ate' (Gyg-024-Syn-M)

ŋa mm t<sup>hi</sup>e s<sup>hi</sup>u woʔ nə iz tʃɔʔ ts<sup>h</sup>oʔ sa ŋgə  
1SG medicine DIST.DEM ate EXIST if now recover PRF possibly VIS.OTHER  
'If I had eaten that medicine, I would have recovered.'

The future modal auxiliary /gu/ may also occur in the same clause as the conditional, as seen in (115).

(115) Conditional /nə/ with the future tense /gu/ (Gyg-010-Nar-M)

?ŋm gu sən nə  
money want think if  
'If you think want money...'

The conditional may also occur in the same clause as the continuous aspect, as seen in (116).

(116) Conditional /nə/ with the continuous /də/ (Gyg-015-Nar-M)

[t<sup>fi</sup>e        ɲite        t<sup>fi</sup>e        t<sup>h</sup>odzi ma tsin nə] ɲit<sup>fi</sup>e        t<sup>fi</sup>e        t<sup>h</sup>əna  
DIST.DEM problem DIST.DEM solve NEG do if problem DIST.DEM there  
deʔ=də    reʔ  
sit=CONT COP.OTHER  
'If you don't solve your problems, they won't just go away.'

The polar question marker /əʔ/ may also occur with present tense verb forms, perfective aspect, and the future tense modal auxiliary. Example (117) shows the interrogative marker occurring in a sentence with both a present tense verb form and perfective aspect marker.

(117) Interrogative marker with present tense verb and perfective aspect

dzəʔ əʔ t<sup>h</sup>i  
full Q VIS.PFV  
'Are you full?'

Example (118) demonstrates the interrogative marker occurring with the future tense modal auxiliary.

(118) Interrogative marker occurring with the future tense modal auxiliary

tɕ<sup>h</sup>a əʔ gu  
tea Q want  
'Do you want tea?'

Interrogative constructions will be analyzed and discussed in greater detail in Chapter 4.

### 3.9.6 Copulas

There are three copulas used in Gyegu Tibetan. These copulas can be seen in Table (119).

(119) Gyegu Tibetan copulas

	Tibetan Script	Gloss	Egophoricity
jm	ཡིན	COP.SELF	Self
reʔ	རེད	COP.OTHER	Other
to	–	COP.ATT	–

The copulas /jm/ and /reʔ/ have a strong relationship with egophoricity, where /jm/ is used to refer to SELF, as seen in (120) and /reʔ/ refers to OTHER, as seen in (121).

(120) Reference to SELF using /jm/

ŋa          girgin   jm  
 1SG.ABS teacher COP.SELF  
 ‘I am a teacher.’

(121) Reference to OTHER using /reʔ/ (Gyg-024-Syn-M)

k<sup>h</sup>ər          girgin   reʔ  
 3SG.MASC teacher COP.OTHER  
 ‘He is a teacher.’

In addition to these SELF and OTHER copulas, the copula /to/ is used to attribute properties to the subject, as shown in (122).

(122) /to/ attributive copula (Gyg-048-Syn-M)

ŋə        tatə t<sup>fi</sup>e        petɕ<sup>ha</sup> t<sup>fi</sup>e        dzɔmo joʔ to  
1SG.GEN view DIST.DEM book DIST.DEM very good COP.ATT  
'In my view, that book is very good.'

Although these morphemes frequently serve as traditional copulas, /jm/ and /reʔ/ are polysemous, and their use is often more attributed to their egophoric and evidential meanings rather than their copular function. The relationship of copulas to egophoricity and evidentiality is discussed in further detail in Chapter 4.

### 3.9.7 Auxiliaries

Gyegu Tibetan displays a pervasive system of sentence final auxiliaries used to mark aspect, egophoricity, and evidentiality. These auxiliaries are never inflected, although certain auxiliaries may only co-occur with certain aspects and person. The auxiliaries can be seen in table (123)<sup>13</sup>.

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<sup>13</sup>This table is adapted from the format of Blorgyam's (2024) table of copulas and auxiliaries in a closely related Tibetan variety spoken by the nomads on the sGa sKyalo grasslands along the upper reaches of the Yangtze River.

(123) Gyegu Tibetan Auxiliary Table

Transcription	Tibetan Script	Gloss	Evidentiality	Tense/Aspect					
				Continuous	Progressive	Perfect	Perfective	Past	
ts <sup>h</sup> o?	སྤྲུག	SENS.SELF	✓						
du	འདྲུག	SENS.OTHER	✓				✓		
s <sup>h</sup> i	ཟེར	QUOT	✓			✓			
ŋgə	གྲྲ	VIS	✓		✓				
t <sup>h</sup> i	སྤྲུག	VIS.PFV	✓					✓	
wo?	ཡོད	EXIST							
ts <sup>h</sup> o?	-	PRF.SELF				✓			
ze	-	PRF				✓			
ts <sup>h</sup> an	མྱོད	PFV						✓	
ɲən	མྱོད	EXP				✓			
də	-	CONT		✓					
sə	སྤྲུག	PROG			✓				
le	-	PST							✓

While included above in Table (123), the auxiliaries /ze/ PRF, /də/ CONT, /sə/ PROG, and /le/ PST differ from the other auxiliaries in that they may occur with any grammatical person, only mark aspect, and do not carry other meaning related to evidentiality or egophoricity.

The auxiliaries /ŋgə/ VIS.OTHER, /t<sup>hi</sup>/ VIS.PFV, /tʂ<sup>hoʔ</sup>/ SENS.SELF, /du/ SENS.OTHER, and /s<sup>hi</sup>/ QUOT, as well as the copulas /jm/ COP.SELF and /reʔ/ COP.OTHER are evidential markers which convey the source of information for a statement. Table (100) shows the complete list of evidential copulas and auxiliaries. The ‘evidential category’ column describes the information source associated with a given evidential marker. Whenever possible, I adhere to the labels for evidentiality in “Kham” Tibetan provided in Drolma and Suzuki (2024).

(124) Table of evidential markers in Gyegu Tibetan

Evidential Marker	Tibetan Script	Gloss	Evidential Category
jm	ཡིན	COP.SELF	personal and immediate knowledge (egophoric)
reʔ	རེད	COP.OTHER	factual/statemental
ŋgə	གནས	VIS.OTHER	visual sensory
t <sup>hi</sup>	སྤྲོད	VIS.PFV	visual sensory (perfective aspect)
tʂ <sup>hoʔ</sup>	སྤྲོད	SENS.SELF	non-visual sensory
du	འདྲུག	SENS.OTHER	non-visual sensory
s <sup>hi</sup>	ཟེར	QUOT	hearsay

These evidential auxiliaries and copulas also have a strong relationship with aspect. For instance, /ŋgə/ and /t<sup>hi</sup>/ are both used to indicate that the speaker witnessed a given event. However, /ŋgə/ is only used when the event is currently ongoing, and /t<sup>hi</sup>/ is only used if the action has been completed and occurred in the

past. This relationship with aspect is shown in examples (125)-(126).

(125) /ŋgə/ used to mark an ongoing witnessed event (Gyg-062-Syn-M)

mər gin də sə ŋgə  
she laugh CONT PROG VIS.OTHER  
'She is laughing.' (and I see it)

(126) /t<sup>h</sup>i/ used to mark a completed witnessed event (Gyg-062-Syn-M)

mər gin t<sup>h</sup>i  
she laugh VIS.PFV  
'She laughed.' (and I saw it)

Previous researchers including Shao (2018), Ebihara (2019), and Drolma and Suzuki (2024) differentiate between copulative and existential verbs in Tibetic languages. Of the auxiliaries listed, /woʔ/ EXIST and /ŋgə/ VIS.OTHER are existential. In example (127), these auxiliaries are used in the same sentence to discuss the possibility of ghosts existing.

(127) /woʔ/ EXIST and /ŋgə/ VIS.OTHER used as existentials (Gyg-048-Syn-M)

ŋə tatə ndzɛ woʔ sa ŋgə  
1SG.GEN view ghosts EXIST possibly VIS.OTHER  
'In my view, ghosts possibly exist.'

A deeper analysis of these auxiliaries and their relationship to person, evidentiality, and egophoricity is presented in Chapter 4.

### 3.9.8 Negation

While most sentence final auxiliaries and copulas are negated by adding /ma/ or /mə/, some have specific negative forms. This paradigm can be seen in (128).

(128) Negation of auxiliaries and copulas

	Tibetan Script	Gloss	Negated Form
jin	ཡིན	COP.SELF	min
reʔ	རེད	COP.OTHER	ma reʔ
woʔ	ཡོད	EXIST	miʔ
ɲgə	གངཉ	VIS.OTHER	mə ɲgə
tʂ <sup>h</sup> oʔ	སྲག	SENS.SELF	ma tʂ <sup>h</sup> oʔ
du	དུག	SENS.OTHER	mə du
s <sup>h</sup> e	ཟེད	QUOT	ma s <sup>h</sup> e
t <sup>h</sup> i	ཐས	VIS.PFV	ma t <sup>h</sup> i
ze	–	PRF	ma ze
ts <sup>h</sup> an	སྤྱད	PFV	ma ts <sup>h</sup> an
jən	ཇོད	EXP	ma jə̃

As seen in example (129), the most common form of sentential negation in Gyegu Tibetan involves adding the negator /ma/ before a sentence final copula.

(129) Negation using /ma/

mo        ʒm-pa        ma reʔ  
 3SG.FEM field-NMLZ NEG COP.OTHER  
 ‘She is not a farmer.’

Other modal and lexical verbs may also be negated using /ma/, as seen in (130).

(130) Non-copular modal verb negation

ɲa    tʂ<sup>f</sup>a    mə    gu  
 1SG tea    NEG want  
 ‘I don’t want tea.’

### 3.10 Summary

To summarize, the various parts of speech in Gyegu Tibetan are defined by their morphological, syntactic, and semantic characteristics. Nouns serve as the head of a noun phrase, take case marking, co-occur with a demonstrative or indefinite marker, and take plural morphology. Adjectives take various suffixes and morphological endings not observed marking other parts of speech, modify the head noun of a noun phrase, occur postnominally, and perform the function that manner adverbs perform in many other languages. Adverbs modify a verb phrase or adjective and denote concepts related to time and degree, although they are not associated with any specific morphology as adjectives are. Finally, verbs can serve as the predicate of a clause and the head of a verb phrase, they may have alternative present, past, and imperative forms, they follow the syntactic object and precede aspectual and evidential auxiliaries and copulas, and they can take the interrogative prefix /-əʔ/ or be negated by /ma/ or /mə/.

# Chapter 4

## Clausal Morphosyntax

This chapter describes the clausal morphosyntax of Gyegu Tibetan. I begin with a brief discussion of word order in intransitive, transitive, and ditransitive clauses. In 4.3 and 4.4, I provide a description of relative clauses and polar questions. In 4.5, I discuss nominal, adjectival, adverbial, and verbal coordination structures before moving on to tough constructions in 4.6. In 4.7, I illustrate multi-clausal constructions containing subordinating clauses and conjunctions of various types. In 4.8, I return to tense, aspect, and modality and expand the discussion presented in Chapter 3. In 4.9, I describe the use of auxiliary verbs to mark evidentiality and egophoricity. Finally, in 4.10 I delve into a detailed description of *wh*-questions, focus, and topic, before concluding with a summary of the clausal morphosyntax of Gyegu Tibetan.

### 4.1 Previous Research on Related Varieties

The clausal morphosyntax of related Tibetic languages has been described, including Dongwang Tibetan (Bartee 2007), Amdo Tibetan (Tribur 2019), Lhasa Tibetan (DeLancey 2003; Denwood 1999), and Lab Tibetan (Sun 2019). All of these varieties follow an SOV word order and have a rich system of sentence final auxiliaries

marking aspect, evidentiality, and egophoricity. Additionally, all of these varieties form relative clauses using a series of nominalizers.

Bartee (2007) describes verb phrases in Dongwang Tibetan in great detail, and illustrates the structure of causatives, ditransitives, relative clauses, complement clauses, modal verbs, aspect, sentence final auxiliaries, evidentiality and egophoricity. Although many of these constructions differ from Gyegu Tibetan, there are a variety of similarities, particularly in word order, modal verbs, and relative clauses. Although the evidential system of Dongwang Tibetan contains a wider variety of morphemes and evidential categories, there is a certain amount of overlap, including the use of /t<sup>hi</sup>/ as a perfective visual marker and use of /sə/ as a hearsay marker (equivalent to the Gyegu Tibetan /s<sup>hi</sup>/ QUOT).

Tribur (2019) describes more distantly related varieties of Amdo Tibetan and details copular clauses, verbal clauses, auxiliary verbs, quotative constructions, and “sentence final particles”. Although some broad similarities exist between the Amdo varieties described and Gyegu Tibetan, including the use of a sentence-final auxiliary system to mark aspect, evidentiality, and egophoricity, the phonological forms of these morphemes and their aspectual and evidential inventory diverge in crucial ways.

Delancey (2003) provides a brief overview of constituent order, adverbial clauses, complementation, negation, and question constructions in Lhasa Tibetan. Lhasa Tibetan shares the same SOV word order and a similar sentence final auxiliary system as most Tibetic languages. Additionally, the use of /ma/ and /mi/ in negation is nearly identical to Gyegu Tibetan. Denwood (1999) provides a much more detailed description of the clausal morphosyntax of Lhasa Tibetan, and comprehensively outlines the syntax of verb phrases and use of evidential marking.

Sun (2019) describes verb phrases, simple clauses, and multi-clausal sentences of the Lab variety, including wh-questions, polar questions, and imperatives. As previously mentioned, the Lab variety and Gyegu Tibetan are closely related and

mutually intelligible. As a result, these structures in Lab are extremely similar to those of Gyegu Tibetan described in this chapter.

## 4.2 Word Order

This section describes the observed word order of intransitive, transitive, and ditransitive clauses. Gyegu Tibetan displays a relatively strict word order, particularly the order of auxiliary verbs and copulas. However, in some sentences with overt case marking, some degree of variation in word order is observed, particularly between direct and indirect objects in ditransitive clauses.

### 4.2.1 Intransitive Clauses

Intransitive clauses consist of a subject and predicate, and are verb final. The subject appears in a sentence-initial position and receives absolutive case marking. Verbs are not marked for agreement with person, number, or gender, but are marked for tense, as described in section 3.9.

An example of a basic intransitive sentence is shown in (1).

(1) Basic intransitive clause (Gyg-071-Syn-Ts)

ŋa s<sup>h</sup>a də sə woʔ  
1SG eat CONT PROG SELF  
'I am eating.'

There are no intransitive examples in the corpus where a predicate precedes the subject, or where a subject appears anywhere other than a sentence initial position.



passive construction. In this case ‘An antelope was eaten by a snow leopard.’ It is important to note that although passive and ergative are distinct phenomena, they both assign some properties of a subject to the PATIENT rather than the AGENT of a sentence, and this similarity results in “borderline cases that are not assignable unequivocally to one construction or the other” (Comrie 1988: 9). As a result of this similarity, most ergative languages do not have true passive constructions in the way that nominative-accusative languages do. Therefore, this word order alternation in Gyegu Tibetan does not constitute a true passive, but it does serve to increase the contextual salience of the PATIENT argument. This type of word order alternation is exceedingly rare in the corpus and warrants further investigation.

Examples (5) and (6) further demonstrate SOV word order. In these examples, both sentences contain the arguments /tɕʰə/ ‘dog’ and /lələ/ ‘cat’. When /tɕʰə/ ‘dog’ is acting as the AGENT and subject, it appears in a sentence-initial position and receives ergative case marking. When the roles are reversed and /lələ/ ‘cat’ acts as the AGENT and subject, it appears in a sentence-initial position with ergative case marking.

(5) Basic transitive clause (Gyg-013-Syn-M)

tɕʰə=gə lələ bi zə re?  
 dog=ERG cat bite PRF OTHER  
 ‘The dog bit the cat.’

(6) Basic transitive clause 2 (Gyg-013-Syn-M)

lələ=gə tɕʰə bi zə re?  
 cat=ERG dog bite PRF OTHER  
 ‘The cat bit the dog.’

As described in Chapter 3, some verbs including /ka/ ‘like/love’ assign quirky case, where the object argument receives dative case marking, and the subject receives

absolutive case marking. In such sentences, SOV word order is still observed, as shown in (7) and (8).

(7) Basic transitive clause 3 (Gyg-013-Syn-M)

[t<sup>fi</sup>e        ajə        t<sup>fi</sup>e]        [t<sup>fi</sup>e        awo t<sup>fi</sup>e=lə]        ka re?  
 DIST.DEM woman DIST.DEM DIST.DEM man DIST.DEM=DAT love OTHER  
 ‘The woman loves the man.’

(8) Basic transitive clause 4 (Gyg-013-Syn-M)

[t<sup>fi</sup>e        awo        t<sup>fi</sup>e]        [t<sup>fi</sup>e        ajə t<sup>fi</sup>e=lə]        ka re?  
 DIST.DEM woman DIST.DEM DIST.DEM man DIST.DEM=DAT love OTHER  
 ‘The man loves the woman.’

### 4.2.3 Ditransitive Clauses

Ditransitive clauses typically follow the order of subject - indirect object - direct object - verb. This word order is seen in examples (9) and (10).

(9) Basic ditransitive clause (Gyg-065-Syn-D)

[t<sup>fi</sup>e        awo t<sup>fi</sup>e]        [p<sup>h</sup>e        aje=lə]        meçu jin t<sup>hi</sup>  
 [DIST.DEM man DIST.DEM] [DIST.DEM woman=DAT] flowers handed VIS.PFV  
 ‘The man handed the woman flowers.’

(10) Basic ditransitive clause 2 (Gyg-034-Syn-M)

ts<sup>h</sup>erlajon=gə tʂaç<sup>hi</sup>=lə tsamba di t<sup>hi</sup>  
 Tsiren=ERG Tashi=DAT barley.flour give VIS.PFV  
 ‘Tsiren gave Tashi tsampa.’

However, there are examples in the corpus where word order in ditransitive clauses

is flexible, as long as the subject is marked with the ergative case clitic /gə/, the indirect object is marked with the dative case clitic /lə/, while the direct object receives the unmarked absolutive case. In these examples, the order of the direct and indirect object is variable, but the subject remains in a sentence-initial position. This variation in word order is shown in examples (11) and (12).

(11) S-DO-IO word order (Gyg-034-Syn-M)

dawa=gə tsamba ts<sup>h</sup>erləjoŋ=lə di t<sup>h</sup>i  
 Dawa=ERG barley.flour Tsiren=DAT give VIS.PFV  
 ‘Dawa gave Tsiren tsampa.’

(12) S-IO-DO word order (Gyg-034-Syn-M)

dawa=gə ts<sup>h</sup>erləjoŋ=lə tsamba di t<sup>h</sup>i  
 Dawa=ERG Tsiren=DAT barley.flour give VIS.PFV  
 ‘Dawa gave Tsiren tsampa.’

As in the OSV construction discussed in 4.2.2, which increases the contextual salience of the object, the subject can also appear after both the direct and indirect object in ditransitive clauses. Ditransitive clauses following a DO-IO-S word order also serve to increase the salience of the direct object. An example of such a construction is shown in (13).

(13) DO-IO-S word order (Gyg-050-Syn-D)

tʂaɕ<sup>h</sup>i tsamba ts<sup>h</sup>erləjoŋ=gə jin t<sup>h</sup>i  
 Tashi barley.flour Tsiren=ERG give VIS.PFV  
 ‘Tsiren gave tsampa to Tashi.’

#### 4.2.4 Verb/Auxiliary/Copula Word Order

The order of the main verb, auxiliary verbs, and copulas is very rigid. In the majority of cases, there are five possible slots that can be filled. This template is shown in (14). In this template, the abbreviation V stands for ‘verb’, AUX for ‘auxiliary’, NEG for ‘negation’, QP for ‘question particle’, COP for ‘copula’, and EVID for evidential marker.

- (14) Verb/Auxiliary/Copula word order template  
V1 - (V2) - (V3) - (AUX1) - (AUX2) - (NEG) - (QP) - (COP/EXIST) - (EVID) - (QP)

In the majority of sentences, there is only one main verb. However, in sentences such as (15), two verbs can be used together, exemplifying V1 - (V2) in (14).

- (15) Two main verbs in a single sentence (Gyg-032-Syn-M)
- ɲi            k<sup>h</sup>ap<sup>h</sup>ar dze ɕi  
1SG.ERG phone hit know  
‘I know how to make a phone call.’

The bouletic modal verb /gu/ ‘want/need’ also frequently occurs in the V2 or V3 position. Example (16) shows /gu/ occupying the V3 position.

- (16) /gu/ ‘want/need’ used as V3 (Gyg-062-Syn-D)
- ɲa tɕ<sup>h</sup>e dzən ndzo gu  
1SG car drive go want  
‘I will drive a/my car.’

The AUX1 and AUX2 spots are generally filled by the aspect markers /də/ CONT

and /sə/ PROG. These aspect marking auxiliaries are discussed further in section 4.8.2. However, the AUX1 position can also be filled with the verb /ts<sup>h</sup>i/ ‘do’, which frequently occurs when the V2 spot is filled with the verb /ru/ ‘help’, as shown in (17).

(17) /ts<sup>h</sup>i/ ‘do’ used as V2 (Gyg-062-Syn-D)

k<sup>h</sup>ər      ŋa    tseŋk<sup>h</sup>ara di    ru    ts<sup>h</sup>i ts<sup>h</sup>an  
 3SG.MASC 1SG sugar      give help do    PFV  
 ‘He passed me the sugar.’

The past tense marker /le/ PST can also serve in these auxiliary positions, as evidenced by the fact that it follows a main verb and precedes copulas, as shown in (18). In (18), /ɲo/ ‘buy’ fills the V1 position, and /le/ PST fills the AUX1 position.

(18) /le/ PST in the auxiliary position (Gyg-062-Syn-D)

ŋa    mər      k<sup>h</sup>afesə ɲo    le    ɟɪ  
 1SG 3SG.FEM coffee    buy PST SELF  
 ‘I bought her a coffee.’

An example of this template with a large number of slots filled is shown in (19). In this example, the V1 is filled by /li/, AUX1 is filled by /də/, AUX2 is filled by /sə/, COP/EXIST is filled by /woʔ/, and EVID is filled by /t<sup>h</sup>i/.

(19) Verb template word order example (Gyg-065-Syn-D)

k<sup>h</sup>ər      k<sup>h</sup>omba li    də    sə    woʔ    t<sup>h</sup>i  
 3SG.MASC house    work CONT PROG EXIST VIS.PFV  
 ‘He is building a house.’ (And I know this because I heard building noises.)

### 4.3 Relative Clauses

This section describes the variety of relative clause constructions observed in Gyegu Tibetan. The relative clauses found in the corpus are formed using a nominalized clause to modify a head noun. This construction is typical of modern Tibetic languages (DeLancey 1999: 231; Tournadre & Suzuki 2023: 209). Whenever possible, examples in this section provide both a sentence containing a relative clause construction and a corresponding non-relativized sentence.

The five nominalizers used to form relative clause constructions in Gyegu Tibetan are /k<sup>h</sup>i/, /mə/, /s<sup>h</sup>a/, /tɕə/, and /zi/. Their use is determined primarily by the thematic role of the relativized noun, as seen in Table (20). However, animacy and argument structure may also play a role in which nominalizer is used. The nominalizers /k<sup>h</sup>i/ and /mə/ have overlapping distribution and are both used with AGENT arguments, while /tɕə/ and /zi/ also show overlapping distribution with PATIENT arguments, although only /zi/ is used with INSTRUMENT arguments. The relativizer is determined by the thematic role of the head noun. This relationship between thematic role and relativizer is also observed in Lhasa Tibetan (DeLancey 1999).

(20) Nominalizers in Gyegu Tibetan Relative Clause

Nominalizer	Thematic Role of Relativized Noun
/k <sup>h</sup> i/	AGENT
/mə/	AGENT
/s <sup>h</sup> a/	LOCATION
/tɕə/	PATIENT
/zi/	INSTRUMENT/PATIENT

The relativizer always appears directly preceding the head noun and after the main verb. In instances where there is additional tense or aspect marking within the

relative clause, the tense or aspect marker appears directly after the main verb and before the relativizer.

The nominalizer /k<sup>hi</sup>/ is used to relativize both non-human and human AGENTS, as shown in (21)-(22). In these examples, (a) contains a relative clause while (b) is an approximation of the sentence without a relative clause construction.

(21) Animate non-human relative clause 1

- a. p<sup>h</sup>əndɪ    ŋa    mbi=də    k<sup>hi</sup>    tɕ<sup>h</sup>ə    t<sup>fi</sup>e    reʔ  
 DIST.DEM 1SG bite=CONT REL.AGT dog DIST.DEM COP.OTHER  
 ‘That is the dog that was biting me.’
- b. p<sup>h</sup>e    tɕ<sup>h</sup>ə    t<sup>fi</sup>e    nojena    ŋa    mbi=də    to    reʔ  
 DIST.DEM dog DIST.DEM always 1SG bite=CONT COP.ATT COP.OTHER  
 ‘That dog always bites me.’

(22) Animate human relative clause 1

- a. to    s<sup>hi</sup>    k<sup>hi</sup>    ʔnə    t<sup>fi</sup>e  
 tiger kill REL.AGT person DIST.DEM  
 ‘the person who kills tigers’
- b. [t<sup>fi</sup>e    ʔnə    t<sup>fi</sup>e=gə]<sub>NP</sub>    [to    t<sup>fi</sup>e]<sub>NP</sub>    s<sup>hi</sup>    ə    t<sup>hi</sup>  
 DIST.DEM person DIST.DEM=ERG tiger DIST.DEM kill already VIS.PFV  
 ‘The person killed a tiger.’

Both singular and plural nouns can be relativized using /k<sup>hi</sup>/, as shown in (23) and (24).

(23) /k<sup>hi</sup>/ relativizing a singular noun

- a. ɲi [ɲə mimi dza=də k<sup>hi</sup> s<sup>fi</sup>u? t<sup>fi</sup>e] rai  
 1SG.ERG 1SG.GEN sister hit=CONT REL.AGT yak DIST.DEM see  
 t<sup>hi</sup> 'I saw the yak that hit (headbutted) my little sister.'  
 VIS.PFV
- b. s<sup>fi</sup>u? ɲa mimi dza t<sup>hi</sup>  
 yak 1SG sister hit VIS.PFV  
 'The yak hit (headbutted) my little sister.'

(24) /k<sup>hi</sup>/ relativizing a plural noun

- a. ɲi=gə [ɲə tɕ<sup>h</sup>ə ndzə=də k<sup>hi</sup> s<sup>fi</sup>u?-tano  
 1SG.ERG=ERG 1SG.GEN dog trample=CONT REL.AGT yak-PL  
 t<sup>fi</sup>e] rai t<sup>hi</sup>  
 DIST.DEM see VIS.PFV  
 'I saw the yaks that were trampling my dog.'
- b. s<sup>fi</sup>u? ɲa tɕ<sup>h</sup>ə ndzə sə t<sup>hi</sup>  
 yak 1SG dog trample PROG VIS.PFV  
 'Yaks were trampling my dog.'

The nominalizer /mə/ is synonymous with the nominalizer /k<sup>hi</sup>/, but is perceived as more formal. An example sentence containing /mə/ to form a relative clause is shown in (25).

(25) /mə/ relative clause (Gyg-072-Syn-M)

- [p<sup>h</sup>ənde dzutɕ<sup>h</sup>u dza=də mə pə-non ts<sup>h</sup>e-ts<sup>h</sup>e]  
 DIST.DEM soccer play=CONT REL.AGT.FORMAL boy-PL all-all  
 ndzə=də tɕowu ndzu to  
 run=CONT very quick COP.ATT  
 'All the boys playing soccer run very quickly.'

The nominalizer /s<sup>h</sup>a/ is used as a relativizer for locations. In other contexts,

/s<sup>h</sup>a/ means ‘ground’ or ‘place’. In the corpus, there are no examples of locations relativized by nominalizers other than /s<sup>h</sup>a/. An example of /s<sup>h</sup>a/ relativizing a location is shown in (26).

(26) Location relative clause 1 (Gyg-039-Syn-M)

[p<sup>h</sup>əndɪ ɕo tsan s<sup>h</sup>a ts<sup>h</sup>on-k<sup>h</sup>on t<sup>h</sup>e] re?  
 DEM yogurt sell REL.LOC business-house DIST.DEM COP.OTHER  
 ‘That is the store that sells yogurt.’

Like /k<sup>h</sup>i/, /s<sup>h</sup>a/ can be used to relativize plural nouns, as shown in example (27).

(27) /s<sup>h</sup>a/ used to relativize a plural noun (Gyg-048-Syn-M)

[p<sup>h</sup>uje san ŋa tsamba ɲo s<sup>h</sup>a ts<sup>h</sup>on-k<sup>h</sup>on] re?  
 DIST.DEM three 1SG barley.flour buy REL.LOC business-house COP.OTHER  
 ‘Those are the three stores I buy tsampa at.’

There are some situations where /s<sup>h</sup>a/ is used to relativize nouns that would not be considered a location in other languages, such as a person. Example (28) illustrates a person being relativized as a location.

(28) /s<sup>h</sup>a/ used to relativize a person as a location (Gyg-048-Syn-M)

[t<sup>h</sup>e aji t<sup>h</sup>e=gə] [mər k<sup>h</sup>a-tɕi s<sup>h</sup>a awo  
 DIST.DEM woman DIST.DEM=ERG 3SG.FEM mouth-kiss REL.LOC man  
 t<sup>h</sup>e] ka re?  
 DIST.DEM love OTHER  
 ‘The woman loves the man that she kissed (on).’

The nominalizer /tɕə/ is used to relativize PATIENT arguments. An example of a PATIENT being relativized with /tɕə/ is shown in example (29).

(29) /tɕə/ relativizing a PATIENT (Gyg-072-Syn-M)

mər      ɡan=də      tɕə      kuzi      t<sup>fi</sup>e      ɲa-t<sup>fi</sup>e      reʔ  
3SG.FEM wear=CONT REL.PAT clothes DIST.DEM 1SG-POSS COP.OTHER  
'The clothes that she is wearing are mine.'

An example of /tɕə/ used to relativize a PATIENT argument undergoing a change of state is shown in (30).

(30) /tɕə/ relativizing a PATIENT undergoing a change of state (Gyg-046-Syn-M)

ɲi      tɕaɕ<sup>hi</sup>=lə      non      ru-ts<sup>hi</sup>=də      tɕə      tsamba      t<sup>fi</sup>e  
1SG.ERG Tashi=DAT made help-do=CONT REL.PAT barley.flour DIST.DEM  
'the tsampa I made for Tashi'

The nominalizer /zi/ is used to relativize INSTRUMENT and PATIENT arguments, and therefore has some overlap with /tɕə/. However, only /zi/ is used to relativize INSTRUMENT arguments, as shown in example (31).

(31) /zi/ used to relativize an INSTRUMENT argument (Gyg-039-Syn-M)

ɲi      k<sup>h</sup>ua t<sup>h</sup>aŋ zi      k<sup>h</sup>ənde  
1SG.ERG soup eat REL.INST spoon  
'the spoon that I eat soup with'

However, /zi/ is also frequently used to relativize PATIENT arguments, as shown in examples (32).

(32) /zi/ used to relativize a PATIENT (Gyg-039-Syn-M)

- a.    *ŋi*           *tɕo=də*       *zi*           *tɕoma t<sup>h</sup>e*  
       1SG.ERG plant=CONT REL.PAT tree    DIST.DEM  
       ‘the tree that I was planting’
- b.    *t<sup>h</sup>e*           *ŋi*           *ti=də*                   *zi*           *pentɕ<sup>h</sup>on t<sup>h</sup>e*  
       DIST.DEM 1SG.ERG watch.PST=CONT REL.PAT movie    DIST.DEM  
       *re?*                   ‘That is the movie that I was watching.’  
       COP.OTHER

In some cases, the nominalizer /zi/ is pronounced variably as either [zə], as shown in example (33), or [sə], as shown in example (34).

(33) /zi/ pronounced as [zə] (Gyg-048-Syn-M)

- p<sup>h</sup>uje*    *san*   *ŋi*           *tɕo=də*       *zə*           *tɕoma re?*  
       DIST.DEM three 1SG.ERG plant=CONT REL.PAT tree    COP.OTHER  
       ‘Those are three trees I planted.’

(34) /zi/ pronounced as [sə] (Gyg-072-Syn-M)

- tɕaɕ<sup>h</sup>i=gə*   *ts erləjɔŋ=lə*   *jm=də*       *sə*           *guzi*   *mabo t<sup>h</sup>e*       *gan*  
       Tashi=ERG Tsiren=DAT give=CONT REL.PAT clothes red    DIST.DEM price  
       *tɕon tɕ<sup>h</sup>e re?*  
       very big   COP.OTHER  
       ‘The red clothes that Tashi gave Tsiren are expensive.’

When /zi/ is pronounced as [sə], the word final schwa frequently undergoes devoicing, as described in Chapter 2.

In addition to morphosyntactic and semantic factors restricting the choice of nominalizer, the size of the relative clause and the choice of nominalizer also interact, with certain nominalizers being unable to co-occur with temporal morphology. Ap-

plying a generative syntactic analysis, the nominalizer /zi/ co-occurs with the largest relative clauses in terms of levels of projections, which must at least contain up to a TP projection, which contains tense features. This is supported by /zi/ relative clauses' ability to contain overt tense morphology. In /zi/ relative clauses, a robust range of tense and aspect morphemes are observed, including future tense in (35) and continuous aspect marker in (36), suggesting both the presence of a TP and AspectP<sup>2</sup>.

(35) /zi/ occurring with the future modal /gu/ 'want/need' (Gyg-039-Syn-M)

k<sup>h</sup>ər      çə      gu    zi      s<sup>h</sup>uʔ t<sup>h</sup>e  
 3SG.MASC butcher want REL.PAT yak DIST.DEM  
 'the yak that he will butcher'

(36) /zi/ occurring with the continuous aspect auxiliary /də/ CONT (Gyg-039-Syn-M)

p<sup>h</sup>e      ŋi      rai=də    zi      pə t<sup>h</sup>e      reʔ  
 DIST.DEM 1SG.ERG see=CONT REL.PAT boy DIST.DEM COP.OTHER  
 'That is the boy that I saw.' (Lit. That is the boy that I was seeing.)

Unlike /zi/, /k<sup>h</sup>i/ cannot co-occur with overt tense morphology, such as the future modal /gu/ 'want/need'. This indicates that there is no TP projection. However, the continuous aspect clitic /də/ frequently occurs in /k<sup>h</sup>i/ relative clauses, as previously demonstrated in (23). This indicates that it does contain an AspectP projection. Although /k<sup>h</sup>i/ often occurs with /də/, there are instances where the continuous aspect marker is absent, as shown in example (37).

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<sup>2</sup>AspectP heads contain aspect features. Their presence is indicated by the overt aspect morphology observed in /zi/ relative clauses

(37) /k<sup>hi</sup>/ with no aspect auxiliaries (Gyg-039-Syn-M)

to s<sup>hi</sup> k<sup>hi</sup> ʔ<sub>1</sub>mə t<sup>fi</sup>e  
 tiger kill REL.AGT person DIST.DEM  
 ‘the person who kills tigers’

Example (37) receives a habitual interpretation as a result of the absence of aspect marking. This could be translated as either ‘the person who kills tigers’ or ‘the person (whose job it is) to kill tigers’.

Like /k<sup>hi</sup>/, /tɕə/ does not occur with the future modal /gu/ ‘want/need’ in the data. However, as seen in examples (29) and (30), it can occur with aspectual auxiliaries, indicating the presence of an AspectP.

Although no examples containing the continuous aspect clitic /də/ within /s<sup>ha</sup>/ relative clauses are found within the Gyegu Tibetan corpus, Sun (2019) found examples of such constructions in the Lab variety. Additionally, in conversations with Gyegu Tibetan speakers which were not recorded, consultants stated that such examples also exist within Gyegu Tibetan. This indicates that while it is possible for /s<sup>ha</sup>/ relative clauses to contain an AspectP, this is less common and potentially marked in some way.

The table in (38) summarizes the thematic role associated with each relativizer, whether tense or aspect are allowed relative clause internally, and the formality of each relativizer.

(38) Nominalizers in Gyegu Tibetan Relative Clauses - Summary

Nominalizer	Thematic Role	Tense/Aspect	Formal?
k <sup>hi</sup>	AGENT	Aspect	No
mə	AGENT	Aspect	Yes
s <sup>ha</sup>	LOCATION	Aspect	No
tɕə	PATIENT	Aspect	No
zi	INSTRUMENT/PATIENT	Tense and Aspect	No

## 4.4 Polar Questions

As mentioned in 3.9.5, the interrogative marker /əʔ/ can occur before aspectual and auxiliary verbs to form a polar question. Additionally, the morpheme /dzi/ ‘Q’ can be used to form a polar question. Examples of the morpheme /dzi/ ‘Q’ used to form a polar question are shown in examples (39) and (40).

(39) /dzi/ forming a polar question example 1 (Gyg-065-Syn-D)

s<sup>h</sup>ama s<sup>h</sup>a dzi  
food eat Q  
‘Do you want to eat?’

(40) /dzi/ forming a polar question example 2 (Gyg-065-Syn-D)

ndzo dzi  
go Q  
‘Do you want to go?’

Polar questions may also be formed with a construction which combines the interrogative /əʔ/ ‘Q’ an additional interrogative particle /a/. In such examples, /əʔ/ ‘Q’ is placed before a verb, while the question particle /aʔ/ appears after the verb in a sentence final position. An example sentence demonstrating this construction is shown in (41).

(41) /aʔ/ forming a polar question (Gyg-065-Syn-D)

k<sup>h</sup>ər k<sup>h</sup>omba ze li ʔə ze a  
3SG.MASC house INDF work Q PRF Q  
‘Did he build a house?’

Additionally, the morpheme /ni/ ‘Q’ can be used to form a polar question. In the

corpus, this morpheme is only used in questions with a second person subject. An example of a polar question formed with /ni/ is shown in (42)<sup>3</sup>.

(42) /ni/ polar question (Gyg-063-Syn-D)

hoʔ p<sup>h</sup>e          s<sup>h</sup>uʔ-dzə    jm          ɲo    ɕi    ni  
 2SG DIST.DEM yak-herder COP.SELF face know Q.TAG  
 ‘Do you know that yak herder?’

It is also possible that /ni/ in (42) is a tag question which could be translated as ‘You know that yak herder, right?’. /ni/ ‘Q’ is used to form tag questions in other examples, as shown in (43). This is similar to the use of *ni* in Dongwang Tibetan (Bartee 2007: 420).

(43) *Context: The speaker sees their neighbor working on building a new house. Once the house is finished, the speaker walks over to their neighbor’s land to speak with them and says:* (Gyg-065-Syn-D)

k<sup>h</sup>əra    hoʔ k<sup>h</sup>omba zə    li    ma    ze    ni  
 hey.man 2SG house    INDF work NEG PRF Q.TAG  
 ‘Hey! You built a house, didn’t you?’

## 4.5 Coordination

This section details different coordination strategies observed in Gyegu Tibetan. There are a variety of coordination strategies available, which are determined by the part of speech being coordinated. First, I describe nominal coordination, followed by adjectival coordination and verbal coordination.

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<sup>3</sup>Note that the copula /jm/ does not occur in its canonical position between the main verb and the question particle. Further investigation of /ni/ polar questions is required to determine if this is a regular process and the reasons behind it.

### 4.5.1 Nominal Coordination

Noun phrases are coordinated using either /tetə/ or /te/, both meaning ‘and’. Examples are shown in (44)-(45).

- (44) Nominal coordination with /tetə/ (Gyg-060-Syn-D)

tɕ<sup>h</sup>ə tetə lələ ɲe dzəsə s<sup>fi</sup>a reʔ  
dog and cat two mice eat OTHER  
‘Cats and dogs both eat mice.’

- (45) Nominal coordination with /te/ (Gyg-060-Syn-D)

ŋa tɕ<sup>h</sup>ə te lələ ɲe ka le ʝm  
1SG dog and cat two like PST SELF  
‘I like both dogs and cats.’

Note that example (45) contains the past tense morpheme /le/, even though it receives a present tense interpretation. This is unexpected, and may indicate that /le/ is polysemous.

### 4.5.2 Adjectival Coordination

Unlike nominal coordination, adjectives are not coordinated using either /tetə/ or /te/. Instead, a construction combining the words /ments<sup>hi</sup>/ ‘not only’ and /oʔ/ ‘but also’ is used. This construction is shown in (46). The presence of evidential morphemes in each coordinand indicate that this is a form of clausal coordination. No other construction which coordinates adjectives is found in the corpus.

(46) Adjectival coordination (Gyg-061-Syn-D)

k<sup>h</sup>oʔ      dzelo      woʔ    le    ments<sup>h</sup>i    jə      oʔ      nodzə ɲgə  
3SG.MASC handsome EXIST PST not.only person but.also funny VIS.OTHER  
'He is handsome and funny.'

Multiple adjectives can also modify a single noun phrase without coordination. In these cases, the adjectives appear adjacent to one another without any intervening morphemes. Example (47) illustrates this construction.

(47) Multiple adjectives modifying a single noun phrase (Gyg-061-Syn-D)

ɲa    lələ    goma    nabo    reʔ                    sasə      dʒin    rai    t<sup>h</sup>i  
1SG cat old    black COP.OTHER already kind see VIS.PFV  
'I saw an old black cat.' (Lit. I have seen a (kind of) cat that is old and  
black.)

### 4.5.3 Adverbial Coordination

Only one example of adverbial coordination exists in the data. This example indicates that adverbs are coordinated similarly to adjectives, using /ments<sup>h</sup>i/ 'not only'. However, in adverbial coordination, /oʔ/ 'but also' is not used. This is shown in example (48).

(48) Adverbial coordination (Gyg-061-Syn-D)

k<sup>h</sup>o              ndzu-dze    ts<sup>h</sup>eʔa    dʒən    le    ments<sup>h</sup>i    zale      dʒa    də      sə  
3SG.MASC quick-ADV do      drive PST not.only reckless do    CONT PROG  
ɲgə  
VIS.OTHER  
'He was driving quickly and recklessly.'

#### 4.5.4 Verbal Coordination

Verbal coordination is formed by a set of one main verb and evidential auxiliary immediately followed by another set of a main verb and evidential auxiliary, with no conjunction joining the two verb phrases. An example of this verbal coordination is shown in (49).

(49) Verbal coordination (Gyg-061-Syn-D)

pəɕe=non mər=gə dugədze t<sup>hi</sup>? k<sup>h</sup>əsə ɕo? t<sup>hi</sup>?  
boy=PL 3SG=ERG kick VIS.PFV fist hit VIS.PFV  
'She kicked and punched the boys.'

Interestingly, example (49) displays OSV word order. The subject is overtly marked with the ergative case clitic, which forces the interpretation that /mər/ 'she' is performing the action of kicking and punching, despite the non-canonical word order. This OSV order is exceedingly rare in the corpus. However, this example indicates that it is possible, as long as overt case marking is present. Although the passive marker /ze/ is not present in (49), it is possible that the sentence in receives a passive interpretation due to the non-canonical word order.

### 4.6 Tough Constructions

The only example of a “tough construction” found in the corpus uses the word /k<sup>fi</sup>a/ 'difficult', shown in (50). Tough constructions were first described in English by Lees (1960), and involve adjectives such as hard, difficult, etc. According to Lees (1960: 216), in these constructions “the subject of these sentences is the *object* of the infinitival verb” in English. A similar pattern is observed in Gyegu Tibetan. In (50), although /s<sup>fi</sup>u?/ 'yak' is the subject of the clause, it is interpreted semantically as the object of the verb /ts<sup>h</sup>o?/ 'herd'. The analysis of /s<sup>fi</sup>u?/ 'yak' as the subject of the sentence in (50) is evidenced by the fact that it occurs in a sentence-initial

position and precedes the predicate in an intransitive clause. As described in section 4.2.1, intransitive clauses consist of only a subject followed by a predicate.

(50) Tough construction example (Gyg-060-Syn-D)

s<sup>fi</sup>uʔ ts<sup>h</sup>oʔ=də dzan k<sup>fi</sup>a reʔ  
 yak herd=CONT very difficult COP.OTHER  
 ‘Herding yaks is very difficult.’

## 4.7 Multi-clause Constructions

This section describes a variety of multi-clausal constructions found in Gyegu Tibetan. First, I discuss conditionals before moving on to temporal adverbial clauses, and clauses involving /nau/ ‘although’, /gupats<sup>h</sup>idə/ ‘in order to’, and /tigə/ ‘so’, all of which are subordinating conjunctions.

### 4.7.1 Conditionals

Conditionals in Gyegu Tibetan are formed using the morpheme /nə/ ‘if’. Examples are shown in (53) through (52).

(51) /nə/ ‘if’ conditional example 1 (Gyg-024-Syn-M)

ŋa mi t<sup>fi</sup>e s<sup>fi</sup>u woʔ nə iz dzo ts<sup>h</sup>oʔ s<sup>h</sup>a  
 1SG medicine DIST.DEM ate EXIST if now recover PRF.SELF possibly  
 ŋgə  
 VIS.OTHER  
 ‘If I had eaten the medicine, I would probably have already recovered.’

(52) /nə/ ‘if’ conditional example 2 (Gyg-024-Syn-M)

dogon k<sup>h</sup>onpa mə nə ŋa iz ʎodza ts<sup>h</sup>u to woʔ reʔ  
 last.night snow NEG if 1SG now school attend COP.ATT EXIST OTHER  
 ‘If it hadn’t snowed last night, I would have attended school.’

(53) /nə/ ‘if’ conditional example 3 (Gyg-012-Nar-M)

hər dzaŋk rai nə təni tetə ɲətano hər ten ma zan hər s<sup>f</sup>a le  
 2SG wolf see if then when 1PL 2SG truth NEG trust 2SG eat PST  
 re? dzo tsi wo? re?  
 COP.OTHER speak say EXIST OTHER  
 ‘If you really see wolves and we don’t trust you, then you will be eaten.’ (The  
 boy had lied before about seeing wolves, and the farmers are warning him.)

### 4.7.2 Temporal Adverbial Clauses

Temporal adverbial clauses consist of a subordinate clause which modifies the verb in the main clause by providing additional temporal information. In Gyegu Tibetan, these constructions are formed using the continuous aspect clitic /də/. Examples of a temporal adverbial clause is shown in (54) and (55).

(54) Temporal adverbial clause example 1 (Gyg-060-Syn-D)

[tʂo? t<sup>h</sup>an=də] ɲa dzon tʂo ts<sup>h</sup>o?  
 boss come=CONT 1SG very afraid PRF.SELF  
 ‘When my boss was coming, I was very afraid.’

(55) Temporal adverbial clause example 2 (Gyg-060-Syn-D)

[ɲa ʃodza=no p<sup>h</sup>o ndzo=də] ɲa ama nun də sə ɲgə  
 1SG school=in away go=CONT 1SG mother cry CONT PROG VIS.OTHER  
 ‘When I was going away to school, my mother was crying.’

### 4.7.3 Although

The Gyegu Tibetan word for ‘although’ is /nau/. An example sentence containing /nau/ ‘although’ is shown in (56).

(56) Although example 1 (Gyg-060-Syn-D)

k<sup>h</sup>ər          ndzopa jm          nau          rəni          dzɔn ɲgə  
3SG.MASC nomad COP.SELF although well.educated very VIS.OTHER  
'Although he is a nomad, he is very well educated.'

In the example above, the subordinate clause 'although he is a nomad' precedes and is modifying the main clause 'he is very well educated'.

#### 4.7.4 In Order To

The Gyegu Tibetan word /gupats<sup>h</sup>idə/ 'in order to' combines a main clause with a subordinate clause. This structure is shown in example (57).

(57) /gupats<sup>h</sup>idə/ 'in order to' example (Gyg-048-Syn-M)

ɲi          dzoʔ tɕ<sup>h</sup>i gupats<sup>h</sup>idə ɕəpo          le jm  
1SG.ERG test pass in.order.to work.hard PST SELF  
'I worked hard in order to pass the test.'

In the above example, the subordinate clause 'in order to pass the test' occurs before the main clause '(I) studied hard.', as expected in a left-branching language like Gyegu Tibetan.

#### 4.7.5 'So' Subordinate Clauses

The morphemes /tigə/ 'so' and /tiju/ 'so' are used in subordinate clause constructions indicating causality. These forms are phonologically similar, and it is not possible at this time to determine if they are variants of the same word or separate lexical items with distinct uses and meanings. An example sentence containing /tigə/ 'so' is shown in (58).

(58) /tigə/ ‘so’ example (Gyg-048-Syn-M)

ənde          lonk<sup>h</sup>o ənde          dzɔn joʔdə          tigə ŋi          ɲu          le  
PROX.DEM car      PROX.DEM very good-looking so    1SG.ERG bought PST  
jm  
SELF  
‘This car looks really nice, so I bought it.’

An example of a sentence containing /tiju/ ‘so’ is shown in (59).

(59) Clauses coordinated with /tiju/ ‘so’ (Gyg-060-Syn-D)

ŋa toza    ma ts<sup>h</sup>e tiju ŋa    k<sup>h</sup>ap<sup>h</sup>ar tɛ<sup>h</sup>o sə    t<sup>h</sup>i  
1SG careful NEG do    so    1SG phone    break PROG VIS.PFV  
‘I was not being careful, so my phone broke.’

## 4.8 Tense, Aspect, and Modality

This section expands on the discussion of the tense, aspect, and modality inventory introduced in section 3.9.5. Definitions of each category are provided, and the morphemes that express these categories are presented, and examples of the use of these morphemes are provided.

One common framework for discussing tense and aspect has been developed from Reichenbach’s (1947) work on symbolic logic. Klein (1994) expanded on this work, and describes tense and aspect as a relationship between time of utterance (TU), topic time (TT), and the time of situation (TSit). Using this framework, the future tense describes situations where the TT is after the TU, the past tense as situations where the TT is before TU, and the present tense as situations where the TU is included within the TT. Likewise, the perfect aspect refers to situations where the TU and TT coincide, and the TSit precedes them. The perfective aspect refers to situations where the TSit is completely contained within the TT and precedes the TU. Finally, the progressive aspect refers to situations where the TU and TT coin-

cide, and the TSit contains or is equivalent to the TT. This framework allows us to make predictions about which combinations of tense and aspect should be possible. For example, we would predict that the perfective aspect is incompatible with both the present tense and the progressive aspect, and the perfect and perfective aspects should be in complimentary distribution.

### **4.8.1 Tense**

This section expands upon the description of the tense inventory presented in section 3.9.5. First, I describe the syntax of the future tense before moving on to illustrate the present and past tenses. Examples of the verb forms, modal verbs, and auxiliary verbs used to express tense in Gyegu Tibetan are provided to support my claims.

#### **4.8.1.1 Future**

As mentioned in 3.9.5, the future tense is marked by use of the modal verb /gu/ ‘want’, as seen in (60). The future tense in Gyegu Tibetan is used to discuss events which have not occurred at the time of utterance, but are desired, expected, or planned to happen in the future. As described in section 3.9.5, future marking frequently co-occurs with other tense and aspect markers. Interestingly, in the absence of hearsay or other evidential markers, the future tense may only occur in sentences with first person subjects. Because the future tense is expressed using a verb meaning ‘want/need’, and it is impossible to know the intentions or desires of another person, I hypothesize that it is ungrammatical to use this verb without additional evidential marking indicating how the speaker has learned what a third person intends. The difference in grammaticality between first and third person future marking without evidential markers is shown in (61).

(60) Future tense (Gyg-071-Syn-Ts)

ŋa        ɲi    gu  
1SG.ABS sleep want  
'I will sleep/I want to sleep.'

(61) Third person future tense

\*k<sup>h</sup>ər        ɲi    gu  
3SG.MASC sleep want  
'He will sleep/He wants to sleep.'

It is however possible to mark the future tense using /gu/ 'want' and a third person subject if the hearsay evidential /s<sup>h</sup>i/ QUOT is also used, as shown in example (62).

(62) Third person future tense using /gu/ 'want' and /s<sup>h</sup>i/ QUOT (Gyg-071-Syn-Ts)

k<sup>h</sup>ər        s<sup>h</sup>a gu    s<sup>h</sup>i  
3SG.MASC eat want QUOT  
'He will eat/He wants to eat.' (And I know this because he told me.)

However, it is also possible to discuss future events without any overt morphological marking, as shown in example (63).

(63) Future tense with no overt morphological marking (Gyg-024-Syn-M)

mər        t<sup>h</sup>an        re?  
3SG.FEM come.PRS OTHER  
'She will come.' (This is certain and a fact.)

In the above example, the verb /t<sup>h</sup>an/ 'come' appears in the present tense form

of the verb. Additionally, there are no auxiliary verbs marking aspect or tense. However, the sentence still receives an interpretation that the person has not come yet, but they will in the future.

Another example including no overt tense morphology includes the verb /kɪ/ ‘win’. Example (64) demonstrates a sentence asserting that a specific team will win a sports match that has not occurred yet. However, one of the teams is known to be much better than the other, and it is therefore likely that they will win. It is important to note that although this sentence does not include the future marker /gu/, it does include the adverb /p<sup>h</sup>açi/ ‘maybe’. This adverb is used to express that the speaker is not certain of the outcome, but that based on their current knowledge, this outcome is likely. /p<sup>h</sup>açi/ ‘maybe’ is frequently used when discussing future events and outcomes which are not entirely certain.

(64) Zero marked future tense with /kɪ/ ‘win’ (Gyg-024-Syn-M)

k<sup>h</sup>o-ts<sup>h</sup>o p<sup>h</sup>açi kɪ re?  
 3-team maybe win OTHER  
 ‘Their team will probably win.’

#### 4.8.1.2 Present

As described in section 3.9.1, many verbs have different present, past and imperative forms. In practice, the present tense form of a verb rarely, if ever, occurs on its own without additional aspectual or tense morphology. For events that are ongoing at the time of utterance, a present tense form of the verb is used in addition to continuous and progressive aspect markers. This is shown in example (65).

(65) Present tense with additional aspect morphology (Gyg-062-Syn-D)

p<sup>h</sup>e aje je gin də sə ɲgə  
 DIST.DEM woman there laugh.PRS CONT PROG VIS.OTHER  
 ‘That woman over there is laughing.’

If a present tense verb is used without additional aspect morphology, it is interpreted as habitual. Examples of this habitual interpretation is shown in (66).

(66) Present tense without additional aspect morphology (Gyg-010-Nar-M)

t<sup>fi</sup>e          tɕoma t<sup>fi</sup>e          ɕaʔ=la          ɲe  
 DIST.DEM tree    DIST.DEM under=LOC sleep.PRS  
 ‘(He) just sleeps under the tree all day.’ (Habitually)

Stative verbs may also appear in the present tense form without additional aspect morphology. An example is shown in (67).

(67) Present tense stative verb with no additional aspect morphology (Gyg-024-Syn-M)

ɲi    k<sup>h</sup>ər          lou    ki  
 1SG 3SG.MASC mind lean  
 ‘I believe him.’

#### 4.8.1.3 Past

The past tense is used to convey that an event happened before the time of utterance. Although Gyegu Tibetan has verb forms expressing the past tense, in practice, these verbs always occur with additional tense, aspect, and evidential markers. This is shown in example (68), where the past tense verb /s<sup>fi</sup>u/ ‘ate’ occurs with the perfective aspect marker /t<sup>hi</sup>/ VIS.PFV.

(68) Past tense /s<sup>fi</sup>u/ ‘ate’ with perfective aspect marker /t<sup>hi</sup>/ VIS.PFV (Gyg-002-WL-M)

moʔ          s<sup>fi</sup>ama s<sup>fi</sup>u          t<sup>hi</sup>  
 3SG.FEM food    ate.PST VIS.PFV  
 ‘She ate food.’ (And I saw it.)

There is also a dedicated past tense auxiliary /le/ PST. This auxiliary verb frequently co-occurs with the copulas /jm/ COP.SELF, as shown in (69), and /reʔ/ COP.OTHER, as shown in (70).

(69) /le/ PST occurring with /jm/ COP.SELF (Gyg-061-Syn-D)

ŋətano tɕ<sup>h</sup>a=lə          tenjiŋ ti          le    jm  
 1PL    together=COM movie watch.PST PST SELF  
 ‘We watched a movie together.’

(70) /le/ PST occurring with /reʔ/ COP.OTHER (Gyg-015-Nar-M)

ɲim tsaiʔ k<sup>h</sup>ər          lo-ra          non=la t<sup>h</sup>onk<sup>h</sup>u tɕ<sup>h</sup>embo-ma ze    woʔ    le  
 day one 3SG.MASC sheep-pen in=LOC hole    big-ADJ    INDF EXIST PST  
 reʔ  
 COP.OTHER  
 ‘One day, there was a large hole in his sheep pen.’

In certain rare circumstances, /le/ PST can also appear on its own without a copula, as shown in example (71).

(71) /le/ PST without a copula (Gyg-060-Syn-D)

ŋa p<sup>h</sup>o=la    ndzuʔ-dzeʔ ndzo le  
 1SG there=LOC fast-ADV    run    PST  
 ‘I ran there quickly.’

Importantly, in all of these examples /le/ PST is marking the fact that an event occurred before the time of utterance, without any additional reference to the internal structure of the event.

## 4.8.2 Aspect

As previously introduced in section 3.9.5, aspect plays an important role in the grammar of Gyegu Tibetan, with auxiliaries which mark perfect, perfective, continuous, and progressive aspect. In this section, each of these aspect categories is discussed and examples are provided to illustrate my claims.

### 4.8.2.1 Perfect

There are several auxiliary verbs that mark perfect aspect, including /ts<sup>h</sup>oʔ/ PRF.SELF, /ze/ PRF, and /ɲən/ EXP. As described in 4.8, the perfect aspect refers to situations where the time of utterance and topic time coincide, and the time of situation precedes them. Additionally, it is helpful to note Ritz’s (2012: 883) definition of the “stative perfect”, which “indicates that the result or consequences of a past situation hold at the moment of speech”.

The auxiliary /ts<sup>h</sup>oʔ/ PRF.SELF is used in a wide variety of contexts. In example (72), /ts<sup>h</sup>oʔ/ is used to indicate that the speaker has already completed eating, and that the result is still relevant at the time of utterance. In this example, the present tense form of the main verb ‘eat’ is used.

- (72) /ts<sup>h</sup>oʔ/ PRF.SELF used to describe a completed event relevant to the time of utterance (Gyg-071-Syn-Ts)

ɲa        s<sup>h</sup>a        ts<sup>h</sup>oʔ  
1SG.ABS eat.PRES PRF.SELF  
‘I have eaten.’

In the above example, the consequences of the act of eating are relevant at the moment of speech, i.e. the speaker has already eaten and is still not hungry.

In example (73), /ts<sup>h</sup>oʔ/ is used to indicate that a student has already been expelled, and that the result is relevant at the time of utterance, which is also the

topic time.

(73) /ts<sup>h</sup>oʔ/ PRF.SELF example 2 (Gyg-072-Syn-M)

ŋət<sup>fi</sup>əmbə=gə [nojena ts<sup>h</sup>ə=də k<sup>hi</sup> loma t<sup>fi</sup>e] dzu ts<sup>h</sup>oʔ  
1PL=ERG always late=CONT REL student DIST.DEM expel PRF.SELF  
'We have expelled the student who is always late.'

The auxiliary /ts<sup>h</sup>oʔ/ PRF.SELF can also be used in combination with other auxiliaries, including /s<sup>hi</sup>/ QUOT, as shown in example (74).

(74) /ts<sup>h</sup>oʔ/ PRF.SELF used with /s<sup>hi</sup>/ QUOT (Gyg-071-Syn-Ts)

k<sup>h</sup>ər s<sup>fi</sup>a ts<sup>h</sup>oʔ s<sup>hi</sup>  
3SG.MASC eat PRF.SELF QUOT  
'He told me that he ate.' (And I did not see it.)

In the above example, /s<sup>hi</sup>/ QUOT is required as an evidential marker because the speaker did not see the action, but it was reported to them.

/ts<sup>h</sup>oʔ/ may also occur with the perfective auxiliary /t<sup>hi</sup>/, as shown in example (75).

(75) /ts<sup>h</sup>oʔ/ used with /t<sup>hi</sup>/

k<sup>h</sup>ər s<sup>fi</sup>a ts<sup>h</sup>oʔ t<sup>hi</sup>  
3SG.MASC eat PRF.SELF VIS.PFV  
'He ate.' (And I saw it.)

Based on the framework presented in 4.8, this is unexpected, as the perfect and perfective aspect should be in complementary distribution. However, the perfective aspect marker /t<sup>hi</sup>/ is also used to mark visual evidence and is polysemous. The

inclusion of /t<sup>hi</sup>/ in (75) demonstrates that the visual evidential meaning of this morpheme can override the aspectual interpretation in some instances. As discussed further in section 4.9.3, in Gyegu Tibetan, a speaker must report the source of their information. If the time of situation precedes the time of utterance and was witnessed by the speaker, the only visual evidential marker available to the speaker is /t<sup>hi</sup>/.

/ts<sup>h</sup>oʔ/ PRF.SELF also occurs with the copula /reʔ/ COP.OTHER, as shown in example (76).

(76) /ts<sup>h</sup>oʔ/ PRF.SELF used with /reʔ/ OTHER (Gyg-048-Syn-M)

k<sup>h</sup>ər      p<sup>h</sup>açi jeje ndan ts<sup>h</sup>oʔ      reʔ  
 3SG.MASC maybe book read PRF.SELF OTHER  
 ‘He might have already read the book.’

In the above example, the copula /reʔ/ is used to imply that the statement is a fact, while /ts<sup>h</sup>oʔ/ is marking that the action under question was (likely) already completed by the time of utterance.

The auxiliary /ze/ PRF is also used to mark perfect aspect. The difference between /ze/ and /ts<sup>h</sup>oʔ/ is not entirely clear. The difference appears to lie in egophoricity, where /ts<sup>h</sup>oʔ/ is used to emphasize the viewpoint and personal knowledge of the speaker, and /ze/ is used to state a fact without this emphasis. The difference between SELF and OTHER marking is discussed in greater detail in section 4.9.4. An example sentence containing /ze/ is shown in (77).

(77) /ze/ PRF used to mark perfect aspect (Gyg-027-Syn-M)

hoʔ ŋa k<sup>h</sup>ats<sup>h</sup>o k<sup>h</sup>ap<sup>h</sup>ar dza ze  
 2SG 1SG yesterday phone hit PRF  
 ‘You called me yesterday.’ (And I want to discuss why.)

The auxiliary /ɲən/ EXP is used primarily to express that an event has been experienced at some previous point and is relevant at the time of utterance. Use of this morpheme emphasizes that a given action has occurred before, as seen in (78).

(78) /ɲən/ EXP used to express a previous experience (Gyg-027-Syn-M)

mər      ɲa    k<sup>h</sup>ap<sup>h</sup>ar dze ɲən  
 3SG.FEM 1SG phone hit EXP  
 ‘She has called me before.’

I analyze /ɲən/ EXP as an auxiliary rather than an adverb because it shares the same syntactic position and aspectual interpretation typical of other auxiliaries.

#### 4.8.2.2 Perfective

The auxiliary markers /t<sup>hi</sup>/ VIS.PFV and /ts<sup>h</sup>an/ PFV are used to convey the perfective aspect in Gyegu Tibetan. As described in 4.8, the perfect aspect refers to situations where the time of situation is completely contained within the topic time and precedes the time of utterance.

The auxiliary /t<sup>hi</sup>/ VIS.PFV is the most frequently used perfective aspectual marker in the corpus. In addition to its perfective meaning, it is also used to mark visual evidence as the source of a speaker’s information. This evidential use is discussed in greater detail in section 4.9.3. Example (79) demonstrates the use of /t<sup>hi</sup>/ to describe an event which was completed within the topic time and before the time of utterance.

(79) /t<sup>hi</sup>/ VIS.PFV used as a perfective marker (Gyg-034-Syn-M)

dawa=gə    ts<sup>h</sup>erlajon=lə tsamba    di    t<sup>hi</sup>  
 Dawa=ERG Tsiren=DAT barley.flour give VIS.PFV  
 ‘Dawa gave Tsiren tsampa.’

The auxiliary /ts<sup>h</sup>an/ PFV is also used to mark perfective aspect, and places an emphasis on the fact that an event occurred at some point and was experienced by the speaker, as shown in example (80).

(80) /ts<sup>h</sup>an/ PFV used as a perfective marker (Gyg-063-Syn-D)

k<sup>h</sup>ər        ŋa    tɕ<sup>h</sup>ə=non    nija    dzɔŋ        ts<sup>h</sup>an  
 3SG.MASC 1SG water=in from raise.up PFV  
 ‘He pulled me out of the water.’

Another example containing /ts<sup>h</sup>an/ PFV is shown in (81).

(81) /ts<sup>h</sup>an/ PFV example 2 (Gyg-032-Syn-M)

t<sup>h</sup>iətə        ŋi        k<sup>h</sup>ər=lə        k<sup>h</sup>ap<sup>h</sup>ar    dze    son    ts<sup>h</sup>an  
 at.that.time 1SG.ERG 3SG.MASC=DAT phone hit want PFV  
 ‘At that time, I wanted to call him.’

#### 4.8.2.3 Continuous and Progressive

There are two related but distinct auxiliary verbs used in Gyegu Tibetan to discuss the internal structure of an ongoing and incomplete events. As described in 4.8, the progressive aspect refers to situations where the time of utterance and topic time coincide, and the time of situation contains or is equivalent to the topic time. Although I distinguish between the continuous aspect and progressive aspect in my glosses, the difference between the two aspects remains unclear. The continuous aspect is marked using /də/ CONT, while the progressive aspect is marked using /sə/ PROG. These auxiliaries often occur together, although they can be used separately in certain instances. When used together, /də/ always occurs immediately before /sə/, and /sə/ is phonologically reduced and pronounced with a devoiced final schwa. Example (82) shows these auxiliaries being used together.

(82) /də/ CONT and /sə/ PROG used together (Gyg-064-Syn-D)

k<sup>h</sup>əɾ      k<sup>h</sup>omba li      də      sə      ŋgə  
3SG.MASC house    work CONT PROG VIS.OTHER  
'He is building a house.' (and I see it.)

However, these auxiliaries also appear on their own in certain contexts. /də/ appears alone most frequently in relative clauses, as discussed in section 4.3. However, it also occurs alone in imperatives, as shown in example (83).

(83) /də/ CONT without /sə/ PROG in an imperative sentence (Gyg-060-Syn-D)

p<sup>h</sup>o    san də  
away go    CONT  
'Get going (go away)!'

The progressive auxiliary /sə/ PROG also appears alone, although given the available examples, it is not entirely clear why this auxiliary occurs without /də/ CONT in a given sentence<sup>4</sup>. An example demonstrating /sə/ PROG used alone is shown in (84).

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<sup>4</sup>Further investigation is required to determine the precise difference between these two markers. For example, speakers could be presented with sentences which are actively unfolding versus those which are continuous states that extend over time. It is already known that events which are actively unfolding make use of both auxiliaries. However, based on the examples available in the corpus it is unclear if both auxiliaries would be used to describe continuous states that extend over time. After gathering relevant examples, sentences can be presented to the speaker with one of the auxiliaries missing. Speakers can then be provided with a context and asked if, given the context, the sentence is both true and grammatical.

(84) /sə/ PROG used without /də/ CONT (Gyg-060-Syn-D)

mər      losə      ndzə      sə      t<sup>hi</sup>  
3SG.FEM teacher become PROG VIS.PFV  
'She was becoming a teacher.'

Example (84) also demonstrates the co-occurrence of the progressive and perfective aspects, which are semantically incompatible and predicted to be in complementary distribution based on the framework described by Klein (1994). As with the co-occurrence of the perfect and perfective aspect in 4.8.2.1, it is possible that the polysemous morpheme /t<sup>hi</sup>/ is being used to mark visual evidence rather than perfective aspect.

### 4.8.3 Modality

In addition to the bouletic modal /gu/ 'want/need' discussed in 3.9.5 and 4.8.1, Gyegu Tibetan's modal inventory consists of /tɕ<sup>hu</sup>/ 'can/may', /t<sup>ho</sup>/ 'can/able to', and /p<sup>hə</sup>/ 'dare to'. These modal verbs always directly follow the main verb in declarative sentences.

In addition to its use as a future tense marker, /gu/ can be used to express meanings which translate to the English meaning 'should'. An example of /gu/ used to imply that one *should* do something is shown in (85).

(85) /gu/ used to imply what one should do (Gyg-040-Syn-M)

ŋa    ɿodza    ndzə    gu      re?  
1SG school go    should OTHER  
'I should go to school.'

Example (86) demonstrates use of /tɕ<sup>hu</sup>/ 'can/may' to express the ability, possibility, or permission to do something. In this example, the speaker is expressing the fact that they have the ability to go to America if they so chose.

- (86) /tɕ<sup>h</sup>u/ ‘can/may’ expressing ability, possibility, or permission (Gyg-027-Syn-M)

ŋa amɾiga ndzo tɕ<sup>h</sup>u reʔ  
 1SG America go can OTHER  
 ‘I could go to America.’

Example (87) demonstrates use of /t<sup>h</sup>o/ ‘can/able to’ to express that the speaker has the ability to perform a task; in this case, making a phone call. The speaker is emphasizing that they have the knowledge and equipment required to properly make a phone call.

- (87) /t<sup>h</sup>o/ ‘can/able to’ expressing ability (Gyg-032-Syn-M)

ŋi k<sup>h</sup>ap<sup>h</sup>ar dze t<sup>h</sup>o s<sup>h</sup>a ŋgə  
 1SG.ERG phone hit able possibly VIS.OTHER  
 ‘I am able to make a call.’

The modal verb /p<sup>h</sup>ə/ ‘dare to’ behaves very similarly to *pu* ‘dare to’ found in the Dongwang variety, as described by Bartee (2007: 329). In the Gyegu Tibetan corpus, this verb only appears with negation, as shown in example (88). I consider this verb to be modal, because it is an expression dealing with possible worlds which describes that an action is realizable in some possible worlds if the speaker’s fear and attitude preventing them from undertaking an action is overcome. It is also a negation of epistemic possibility, where ‘based on X, I dare not (or should not) do X’.

- (88) /p<sup>h</sup>ə/ ‘dare to’ with negation (Gyg-032-Syn-M)

ŋi k<sup>h</sup>ap<sup>h</sup>ar dze p<sup>h</sup>ə s<sup>h</sup>a ma tɕ<sup>h</sup>o  
 1SG.ERG phone hit dare possibly NEG SENS.SELF  
 ‘I dare not make that phone call.’

Although /p<sup>h</sup>ə/ ‘dare to’ is often accompanied by /sa/ ‘possibly’, it may also occur without it, as shown in (89).

(89) /p<sup>h</sup>ə/ ‘dare to’ without /sa/ ‘possibly’ (Gyg-032-Syn-M)

ŋi            girgin=lə      k<sup>h</sup>ap<sup>h</sup>ar dze p<sup>h</sup>ə mə du  
 1SG.ERG teacher=DAT phone hit dare NEG SENS.OTHER  
 ‘I dare not call the teacher.’ (The speaker already tried in the past and  
 something went poorly.)

These modals also occur in polar questions in the corpus, as shown in example (90). In such examples, the polar question marker /ʔə/ ‘Q’ occurs between the main verb and modal verb.

(90) /tɕ<sup>h</sup>u/ ‘can/may’ in a polar question (Gyg-027-Syn-M)

ŋa    ŋo=lə    ndzi    ʔə    tɕ<sup>h</sup>u  
 1SG in=LOC come Q can  
 ‘May I come in?’

## 4.9 Evidentiality and Egophoricity

This section expands upon the description of the system of evidentiality and egophoricity markers presented in section 3.9.7. First, I provide a definition of evidentiality and briefly summarize previous research both cross-linguistically and specifically on Tibetic languages. Then, I review the evidential inventory and provide a detailed description of the source of information that each marker encodes. Next, I provide examples of each marker in context, and provide examples of contexts in which these evidential markers are ungrammatical. Finally, I provide a definition for egophoricity that best fits the data in Gyegu Tibetan and illustrate how egophoric marking is used in the language.

Aikhenvald (2004: 3) strictly defines evidentiality as the marking of a speaker’s source of information. Evidentiality does not, however, directly express the strength of evidence or a speaker’s confidence in the validity of a given statement (Aikhenvald 2018: 6). Floyd et al. (2018: 2) define egophoricity as “a general phenomenon of linguistically flagging the personal knowledge, experience, or involvement of a conscious self.” Although researchers including Tournadre and LaPolla (2014) and Drolma and Suzuki (2024) assert that evidentiality and egophoricity are intimately linked and part of the same paradigm in Tibetic languages, other researchers including Shao (2018) and Ebihara (2019) discuss these as distinct categories. Researchers taking a more cross-linguistic view of evidentiality, including Aikhenvald (2004), make no mention of egophoricity at all. If we adopt Floyd et al.’s (2018) definition of egophoricity, then it becomes clear that the two phenomena are closely, if not inseparably, linked. Personal knowledge or experience often serves as the source of a speaker’s information, and this is grammatically expressed in Tibetic languages as a form of evidentiality, including in Gyegu Tibetan. Although this dissertation often makes reference to either evidentiality or egophoricity, and discusses them as distinct phenomena, they are in reality parts of the same paradigm which are deeply intertwined with one another.

#### **4.9.1 Non-Tibetic Evidentials**

Aikhenvald (2004) provides an in-depth discussion of evidentiality cross-linguistically, but does not reference any Tibetic language. The author does, however, discuss the grammatical strategies used to encode these systems in a wide variety of languages. The relationship of these systems to mood, aspect, tense, passives, nominalization, and other constructions are also reviewed, and the semantics of a variety of evidential markers are illustrated in detail. According to Aikhenvald (2004: 1), some form of evidential marking occurs in about a quarter of the world’s languages. Evidential marking is generally obligatory in languages with such systems unless the source of information is “recoverable from the context” (Aikhenvald 2004: 6).

Aikhenvald (2004) classifies languages with evidential systems by the number of evidential categories which are expressed. Systems containing two, three, four, and five evidential categories are illustrated. In section 4.9.3, I describe five evidential categories found in Gyegu Tibetan. However, the evidential categories in Gyegu Tibetan differ slightly from the languages containing five evidential categories described by Aikhenvald. Aikhenvald (2004: 63-64) provides a list of six recurring semantic parameters observed in language's with evidential systems. These are listed and described in (91).

(91) Aikhenvald's (2004: 63-64) semantic parameters

1. VISUAL: covers information acquired through seeing.
2. NON-VISUAL SENSORY: covers information acquired through hearing, and is typically extended to smell and taste, and sometimes also to touch.
3. INFERENCE: based on visual or tangible evidence, or result.
4. ASSUMPTION: based on evidence other than visible results: this may include logical reasoning, assumption, or simply general knowledge.
5. HEARSAY: for reported information with no reference to those it was reported by.
6. QUOTATIVE: for reported information with an overt reference to the quoted source.

Although Gyegu Tibetan has visual, non-visual sensory, and assumption categories, it does not contain an inference category and combines the hearsay and quotative categories.

Aikhenvald (2018) is an anthology covering evidentiality, with contributions touching on the theory, classification, and historical development of evidential systems, in addition to descriptions of these systems from a variety of language families, including Tibetic. The section describing Tibetic languages focuses primarily on the Lhasa

variety. Other language families described include Austronesian, Turkic, Uralic, Mongolic, Algonquian, and Uto-Aztecan. This source largely adopts Aikhenvald's (2004) definition of evidentiality as a grammaticalized way of marking a speaker's source of information, which becomes problematic in capturing the empirical facts related to evidentiality in Tibetic languages, as discussed in 4.9.2.

## 4.9.2 Evidentials in Tibetic Languages

Gawne and Hill (2017) provide a well rounded overview of evidentiality in a wide variety of Tibetic languages. This collection contains detailed descriptions of the evidential systems of Lhasa Tibetan, Purik Tibetan, Denjongke, Dzongkha, Amdo Tibetan, Zollam Tibetan, and Pingwu Baima. The editors discuss Aikhenvald's (2015: 239) definition of evidentiality as "a grammatical expression of information source", and come to the conclusion that this definition may be too narrow, and that finding a single definition of evidentiality for all languages may not be possible. They therefore incorporate Tournadre and LaPolla's (2014: 240) definition of evidentiality in Tibetan, which includes the concepts of "access to information" and "speaker's perspective" and argue that adding these elements to the definition of evidentiality is helpful when analyzing Tibetic languages.

Denwood (1999) discusses what he calls "evidential modality" in Lhasa Tibetan. Denwood (1999: 120) states that the auxiliaries in Lhasa Tibetan which mark evidentiality "may be termed 'evidential' or 'attestative' in that they imply a particular degree of evidence for the statement." However, he does not include a particular source of evidence in his definition, i.e. visual, hearsay, sensory, etc. The copulas *yin* and *red* (equivalent to the Gyegu Tibetan /jm/ and /re?/) are used to represent "an assertion or bald statement of fact" (Denwood 1999: 120). Examples of *yin* and *red* in Lhasa Tibetan taken from Denwood (1999: 121) are shown in (92) and (93).

- (92) Lhasa Tibetan use of *yin* for a statement of fact (Denwood 1999: 121)

*nga. bslab.grwa.ba. yin.*  
I student be  
'(Personally) I'm a student.'

- (93) Lhasa Tibetan use of *red* for a statement of fact (Denwood 1999: 121)

*khong. bslab.grwa.ba. red.*  
3SG student be  
'He's a student.' (Neutral statement of fact)

Denwood (1999) further describes a distinction between evidential auxiliaries marking “witnessed” and “unwitnessed” events, where “witnessed” implies “definite knowledge arising out of first-hand *witness*” (Denwood 1999: 122). This distinction between witnessed and unwitnessed is exemplified by the morphemes *'dug* for witnessed events and *jog.red* for unwitnessed or assumed events. While *'dug* is related to the Gyegu Tibetan /du/ SENS.OTHER and *jog.red* is related to /wo?-re?/, these forms are used differently in Gyegu Tibetan than they are in Lhasa Tibetan, as discussed in 4.9.3. Examples of the distinction between witnessed and unwitnessed events/facts is shown in (94) and (95).

- (94) Lhasa Tibetan use of *'dug* for witnessed facts (Denwood 1999: 121)

*kho.la. deb. 'dug.*  
he-LOC book exist  
'(I see) he has some books.'

- (95) Lhasa Tibetan use of *yog.red* for unwitnessed facts (Denwood 1999: 121)

*kho.la. deb. yog.red.*  
he-LOC book exist  
'He has some books (I assume / so I am told / as is generally known).'

Detailed attention is paid to the interaction between this evidential system and egophoricity, which Denwood terms “viewpoint”. Denwood (1999: 120) distinguished between what he calls “self-centered” and “other-centered” viewpoint. He defines “self-centered” as being personal or subjective and centered on the speaker’s personal knowledge, while “other-centered” is impersonal and objective. In Lhasa Tibetan, there are a variety of morphemes which differ in their self-centered versus other-centered interpretation, including the copulas *yin* (associated with self-centered viewpoint) and *red* (associated with other-centered viewpoint), as demonstrated above in (92) and (93).

Garrett (2001: 4) closely ties the concepts of egophoricity and evidentiality together, and states that “evidentials are always evaluated from the point of view of someone.” He further breaks down evidentials in Standard Spoken Tibetan into three categories: indirect, direct, and ego. Indirect evidentials involve inference, as shown in (96) and hearsay, as shown in (97).

The context surrounding (96) is that the speaker has amnesia, but they remember that their name is Tashi. They have a list of names, and where those people went on holiday. Through looking at this list, they are able to infer that they (Tashi) went to New York (Garrett 2001: 40). In this example, *pa-red* is used to convey indirect evidence (inference) for a past event. This context shows that inference and an “other-centered” viewpoint can grammatically occur even when the speaker is talking about themselves.

- (96) Standard Spoken Tibetan indirect inference evidential example (Garrett 2001: 40)

*nkra.shis New.York-la phyin-pa-red*  
 Tashi New.York-LOC go-[ind past]  
 ‘Tashi went to New York.’

In (97), the speaker is making an assertion based on hearsay. They do not know

from first-hand experience that the wine is good today, but they have been told by others and assume this to be true. Therefore, the sentence is marked with the indirect evidential *yod.red*.

- (97) Standard Spoken Tibetan hearsay evidential example (Garrett 2001: 40)<sup>a</sup>

*de.ring 'dir mchod.chang spro.bo zhe.drag yod.red*  
today here wine tasty very [ind ELPA]  
'The wine here today is very delicious [I've been told; I assume].'

---

<sup>a</sup>ELPA stands for existential, locative, possessive, and attributive.

Direct evidentials involve perceptual evidence, whether visual or other sensory modalities. Example (98) demonstrates the use of *'dug* to mark direct perceptual evidence.

- (98) Standard Spoken Tibetan direct evidential example (Garrett 2001: 72)

*'dir mo.Ta mang.po 'dug*  
here car many [dir ELPA]  
'There are a lot of cars here.'

Finally, ego evidentials imply that a speaker has “intimate and immediate knowledge of a situation“ (Garrett 2001: 5). An example of *yod* used to mark ego evidentiality is shown in (99).

- (99) Standard Spoken Tibetan ego evidential example (Garrett 2001: 113)

*nga-r snyu.gu dgos-yod*  
I-LOC pen need-[ego perf]  
'I need a pen.'

Garrett (2001) goes on to analyze indirect evidentials as a type of performative

epistemic modality. The performative part of this definition involves performing an action using words. Garrett (2001: 23) uses English words like ‘promise’ and ‘christen’ to illustrate this point. By saying ‘I promise to X.’ a speaker is performing the act of promising. He further claims that performatives are a form of “truth by say-so” (Garrett 2001: 29). This concept is then linked with epistemic modality. Garrett (2001: 26) focuses on the fact that necessity modals “have to do with knowledge-based attitudes.” Combining these ideas into performative epistemic modality, Garrett (2001: 32) states that an English equivalent would be similar to “I infer that John is on his way.” This statement is performative, as the speaker is performing the action of inferring by making the statement. Furthermore, all possible worlds are restricted to worlds in which everything the speaker thinks must be true, is actually true. Under this view, using indirect evidentials in Tibetan is also performative, similar to English verbs such as ‘infer’ and ‘promise’.

### 4.9.3 Evidentiality in Gyegu Tibetan

The evidential system in Gyegu Tibetan marks visual evidence, non-visual sensory evidence, hearsay, common knowledge/obvious facts, and knowledge/facts gained through personal experience and privileged information. Although evidentiality in Gyegu Tibetan interacts with epistemic modality in interesting ways, the evidential system itself does not mark a speaker’s confidence in the validity of a statement. An in-depth discussion of /jm/ COP.SELF and /reʔ/ COP.OTHER and their relationship to egophoricity is discussed in more depth in 4.9.4. Table (100) below displays the evidential system found in Gyegu Tibetan, previously introduced in section 3.9.7. For the purposes of this dissertation, I define evidentiality in Tibetan as marking a speaker’s source of information, taking into account sensory information and the speaker’s personal access to either their own knowledge or the general knowledge and intentions of other people.

(100) Table of evidential markers in Gyegu Tibetan

Evidential Marker	Tibetan Script	Gloss	Evidential Category
jm	ཡིན	COP.SELF	personal and immediate knowledge (egophoric)
ref	རེད	COP.OTHER	factual/statemental
ŋgə	གདམ	VIS.OTHER	visual sensory
t <sup>h</sup> i	མས	VIS.PFV	visual sensory (perfective aspect)
tʂ <sup>h</sup> oʔ	ཁྱེན	SENS.SELF	non-visual sensory
du	འདྲག	SENS.OTHER	non-visual sensory
s <sup>h</sup> i	ཟེར	QUOT	hearsay

In Gyegu Tibetan, evidential marking is obligatory in most contexts, although evidential auxiliaries may be omitted in certain instances. An example sentence lacking evidential marking is shown in example (101).

(101) Sentence lacking evidential marking (Gyg-060-Syn-D)

ŋa p<sup>h</sup>o=la ndzuʔ-dzeʔ ndzoʔ le  
 1SG there=LOC fast-ADV run PST  
 ‘I ran there quickly.’

In the example above, the only auxiliary verb is the past tense marker /le/ PAST, with no other evidential auxiliaries or copulas.

There are two evidential markers that indicate the speaker’s source of information came from an eyewitness, visual account. These morphemes are /ŋgə/ VIS.OTHER and /t<sup>hi</sup>/ VIS.PFV. Although both of these evidential markers indicate that the speaker saw something, they differ in their aspectual interpretation. /ŋgə/ VIS.OTHER is used to describe an event that the speaker is currently witnessing, while /t<sup>hi</sup>/ VIS.PFV is used to describe an event which was witnessed by the speaker and has already been completed before the time of the utterance. An example sentence containing /ŋgə/ VIS.OTHER describing an ongoing event that the speaker is witnessing is shown in (102).

(102) Visual evidential /ŋgə/ describing an ongoing event (Gyg-027-Syn-M)

k<sup>h</sup>ər k<sup>h</sup>ap<sup>h</sup>ar dze də sə ŋgə  
 3SG.MASC phone hit CONT PROG VIS.OTHER  
 ‘He is making a call.’

The evidential /ŋgə/ VIS.OTHER most frequently co-occurs with the continuous aspect marker /də/ and the progressive aspect marker /sə/. Additionally, it is ungrammatical to use /ŋgə/ VIS.OTHER for an event which is already completed and

was witnessed by the speaker in this past. This is shown in example (103).

- (103) Visual evidential /ŋgə/ describing a completed event

\*k<sup>h</sup>ər      k<sup>h</sup>ap<sup>h</sup>ar dze ŋgə  
3SG.MASC phone hit VIS.OTHER  
Intended meaning: ‘He made a call.’

Instead, the visual evidential /t<sup>hi</sup>/ VIS.PFV is used to describe completed events that were witnessed by the speaker before the time of utterance. An example is shown in (104).

- (104) Visual evidential /t<sup>hi</sup>/ describing a completed event witnessed by the speaker  
(Gyg-027-Syn-M)

mər=gə      k<sup>h</sup>ats<sup>h</sup>o    k<sup>h</sup>ər=lə      k<sup>h</sup>ap<sup>h</sup>ar dze t<sup>hi</sup>  
3SG.FEM=ERG yesterday 3SG.MASC=DAT phone hit VIS.PFV  
‘She called him yesterday.’

It is ungrammatical to use /t<sup>hi</sup>/ VIS.PFV to describe an ongoing event that the speaker is witnessing. This is the case whether or not the continuous and progressive aspect auxiliaries are used. Ungrammatical examples of /t<sup>hi</sup>/ VIS.PFV being used to describe an ongoing event are shown in (105) and (106).

- (105) Ungrammatical use of /t<sup>hi</sup>/ without continuous and progressive auxiliaries

\*mər=gə      k<sup>h</sup>ər=lə      k<sup>h</sup>ap<sup>h</sup>ar dze t<sup>hi</sup>  
3SG.FEM=ERG 3SG.MASC=DAT phone hit VIS.PFV  
Intended meaning: ‘She is calling him.’

- (106) Ungrammatical use of /t<sup>hi</sup>/ accompanied by continuous and progressive auxiliaries

\*mər=gə      k<sup>h</sup>ər=lə      k<sup>h</sup>ap<sup>h</sup>ar dze də      sə      t<sup>hi</sup>  
 3SG.FEM=ERG 3SG.MASC=DAT phone hit CONT PROG VIS.PFV  
 Intended meaning: ‘She is calling him.’

However, in certain instances this evidential marker’s perfective aspect overrides its visual evidential meaning. An example where the primary interpretation of this auxiliary is its aspectual meaning rather than its evidential meaning is shown in (107).

- (107) /t<sup>hi</sup>/ primarily interpreted as a perfective aspect marker (Gyg-032-Syn-M)

ŋi      k<sup>h</sup>ap<sup>h</sup>ar dze t<sup>h</sup>o ma t<sup>hi</sup>  
 1SG.ERG phone hit able NEG PFV  
 ‘I wasn’t able to make a phone call.’

In this instance, although the speaker was present for the event, they did not visually witness themselves or another person making a phone call. In fact, no phone call was made at all. Rather, /t<sup>hi</sup>/ VIS.PFV is being used primarily for its aspectual meaning. It is also possible that /t<sup>hi</sup>/ VIS.PFV is used as a default if no other evidentiality is marked. In (108), /t<sup>hi</sup>/ VIS.PFV is used as the evidential, even though the speaker did not see the house being built and only heard building noises. However, there is no marker specifically used to mark hearing as a source of evidence in Gyegu Tibetan, and therefore /t<sup>hi</sup>/ VIS.PFV is used as the default.

- (108) /t<sup>hi</sup>/ VIS.PFV used with non-visual evidence (Gyg-065-Syn-D)

k<sup>h</sup>ər      k<sup>h</sup>omba li      də      sə      woʔ      t<sup>hi</sup>  
 3SG.MASC house work CONT PROG EXIST VIS.PFV  
 ‘He is building a house.’ (And I know this because I heard building noises.)

The evidentials /tʂʰoʔ/ SENS.SELF and /du/ SENS.OTHER are used when the speaker's source of information is non-visual sensory evidence. /tʂʰoʔ/ SENS.SELF and /du/ SENS.OTHER are also used when the speaker is discussing personal feelings.

An example of /tʂʰoʔ/ SENS.SELF being used to mark the speaker's source of information as taste is shown in (109).

- (109) /tʂʰoʔ/ used to mark taste as the speaker's source of information (Gyg-024-Syn-M)

ənde        dza-ha-dza    kʰər        li-zə        jɪn        tʂʰoʔ  
 PROX.DEM 100-out.of-100 3SG.MASC work-NMLZ COP.SELF SENS.SELF  
 'He definitely made (cooked) this.' (And I know because I tasted it.)

/tʂʰoʔ/ SENS.SELF can also be used to express that the speaker's source of information is smell, as shown in (110).

- (110) /tʂʰoʔ/ used to mark smell as the speaker's source of information (Gyg-024-Syn-M)

kʰər        pʰaçi        sʰama li    woʔ    tʂʰoʔ  
 3SG.MASC probably food work EXIST SENS.SELF  
 'He probably cooked.' (And I know because it smells like he cooked.)

As previously mentioned, /tʂʰoʔ/ SENS.SELF can also be used to express one's personal feelings. An example is shown in (111).

- (111) /tʂʰoʔ/ used to mark discuss the speaker's personal feelings (Gyg-032-Syn-M)

ŋi        kʰapʰar dze pʰə sʰa        ma    tʂʰoʔ  
 1SG.ERG phone hit dare possibly NEG SENS.SELF  
 'I dare not make the phone call.'

Note that the order of /p<sup>h</sup>açi/ ‘probably’ in (110) and /sa/ ‘possibly’ in (111) differ in relation to the verb. /p<sup>h</sup>açi/ ‘probably’ occurs pre-verbally, while /sa/ ‘possibly’ occurs post-verbally. This indicates that /p<sup>h</sup>açi/ ‘probably’ is acting as an adverb, while /sa/ ‘possibly’ is appearing in a position within the verbal template typically reserved for modal and auxiliary verbs.

/du/ SENS.OTHER is used to focus the viewpoint on the feelings of others, or what the speaker infers that others would think about a given situation. An example demonstrating this is shown in (112). This evidential occurs extremely rarely in the corpus.

(112) /du/ used to mark the implied personal feelings of others (Gyg-032-Syn-M)

ŋi            girgin=lə    k<sup>h</sup>ap<sup>h</sup>ar dze p<sup>h</sup>ə mə du  
 1SG.ERG teacher=DAT phone hit dare NEG SENS.OTHER  
 ‘I dare not call the teacher.’ (And the speaker already tried in the past.)

In the above example, the speaker has already tried to call the teacher, and something about the call did not go well. This is a more general statement than in example (111), and implies that it is a more general fact that they dare not try again and that others would agree that this is not a good idea.

The auxiliary verb /s<sup>hi</sup>/ QUOT is used to indicate that a speaker’s source of information is another speaker’s verbal information or hearsay. When used to indicate hearsay, the speaker does not have direct knowledge of an event or fact, but they have heard someone discuss the event or tell them that a fact is true. An example of /s<sup>hi</sup>/ ‘QUOT’ used to report hearsay is shown in (113).

(113) /s<sup>hi</sup>/ QUOT used to report hearsay (Gyg-024-Syn-M)

ə                    tsaiʔ s<sup>hi</sup>ama dzomo ɕan            reʔ                    s<sup>hi</sup>  
PROX.DEM one food very delicious COP.OTHER QUOT  
'I have been told the food here is very delicious.'

In the above example, the speaker has never eaten the food in question. However, someone else has directly told the speaker that the food is delicious.

Additionally, /s<sup>hi</sup>/ QUOT can be used to directly quote another speaker, as shown in (114).

(114) /s<sup>hi</sup>/ 'QUOT' used to quote someone

mə gu s<sup>hi</sup>  
NEG want QUOT  
'(He) said he doesn't want (it).'

On this occasion, the speaker is conveying the exact words of a specific third person. The listener is aware of who is being quoted and the broader context behind the statement. This differs from the statement of general hearsay in (113), where the listener is not aware of who made the statement or the broader context of the conversation in which the statement was made. This sentence is, however, ambiguous in its interpretation. It could also be taken to mean 'I heard that he doesn't want it.' depending on the context.

Although no specific causative morpheme is found in the corpus, there are multiple constructions which express causative semantics. The auxiliary /s<sup>hi</sup>/ 'say' is commonly used as a semantic causative. This is equivalent to the English "They **told** me to X." This pattern is shown in example (115).

(115) /s<sup>h</sup>/ ‘say’ used as “told me to” (Gyg-063-Syn-D)

ŋa aba tsamba s<sup>fi</sup>u s<sup>hi</sup>  
1SG father barley.flour ate.PST QUOT  
‘My father said ‘eat tsampa.’ (My father made me eat tsampa.)

In addition to visual evidentials, non-visual sensory evidentials, and the hearsay evidential, the copulas /jm/ COP.SELF and /reʔ/ COP.OTHER have evidential meaning. /reʔ/ COP.OTHER is used to state general facts and emphasizes that a given statement is simply a fact, and does not need additional evidential marking.

If the speaker has personal knowledge of an event or fact that is not widely known, or wants to emphasize their involvement or closeness to an event, then they use /jm/ COP.SELF, as shown in example (116).

(116) /jm/ COP.SELF used to state a general fact (Gyg-061-Syn-D)

ŋa k<sup>h</sup>ər tɕ<sup>h</sup>a=la ʎodza-non san le jm  
1SG 3SG.MASC together=COM school-in went PST SELF  
‘I went to school with him.’

When stating a more general fact, particularly one that does not involve the speaker, the copula /reʔ/ COP.OTHER is used, as shown in examples (117) and (118).

(117) /reʔ/ expressing a general fact (Gyg-060-Syn-D)

tɕ<sup>h</sup>ə tetə lələ pe dzəsə s<sup>fi</sup>a reʔ  
dog and cat both mice eat OTHER  
‘Dogs and cats both eat mice.’

(118) /reʔ/ used to state a well known fact (Gyg-062-Syn-D)

mər        dawa dzɔn ne    reʔ  
 3SG.FEM Dawa very hate OTHER  
 ‘She really hates Dawa.’

In example (118), it is a very well known fact that this individual hates Dawa. No additional evidential marking is required to mark the source of information, because this is simply a given and not disputed.

Authors including Denwood (1999) and Garrett (2001) discuss the interpretations of different combinations of evidential markers and copulas in Lhasa Tibetan. One particularly prevalent combination in the literature is /woʔ/ EXIST and /reʔ/ COP.OTHER, which receives an indirect evidential or hearsay interpretation (Denwood 1999: 122; Garrett 2001: 39). However, this is not the case in Gyegu Tibetan, as shown in (119).

(119) /woʔ/ combined with /reʔ/ in Gyegu Tibetan (Gyg-063-Syn-D)

ŋa    tɕ<sup>h</sup>ə-zə    woʔ    reʔ            teʔo    ni    to    woʔ  
 1SG car-NMLZ EXIST COP.OTHER but.also broken COP.ATT EXIST  
 reʔ                    ‘I have a car, but it is broken.’  
 COP.OTHER

In example (119), the speaker’s knowledge of this fact is neither indirect or hearsay, indicating that the construction differs in interpretation from its Lhasa Tibetan counterpart.

#### 4.9.4 Egophoricity

Denwood (1999) describes egophoricity in Tibetan as distinguishing between a self-centered or other-centered “viewpoint”. Garrett (2001: xi) uses the term “ego”, which he describes as a type of evidentiality which indicates “either immediate or

groundless knowledge.” For the purposes of this dissertation, I define egophoricity as a flagging of personal knowledge or involvement in an event or fact and an expression of a self-centered viewpoint. I define self-centered as a statement which takes the knowledge or feelings of the speaker primarily into account. This definition is inherently linked with evidentiality. If a sentence makes use of SELF egophoric marking, then the speaker is stating that the source of information is their own personal knowledge, experience, or involvement. Conversely, OTHER marking emphasizes the viewpoint of others, where the speaker may not have personal knowledge or direct involvement in a situation. As a result, OTHER marking most often occurs with third person subjects. In Gyegu Tibetan, the copulas and auxiliaries with SELF egophoric interpretations are /jm/ COP.SELF, /woʔ/ EXIST, and /tʂʰoʔ/ SENS.SELF. The copulas and auxiliaries with OTHER egophoric interpretations are /reʔ/ COP.OTHER, /ŋgə/ VIS.OTHER, and /du/ SENS.OTHER.

Because SELF marking emphasizes a speaker’s viewpoint, personal knowledge and involvement, SELF marking often co-occurs with first person subjects, or in situations in which the speaker played an active role. A typical example of SELF marking is shown in (120).

- (120) /jm/ SELF used with a first person subject pronoun (Gyg-024-Syn-M)  
 ŋa ɿas<sup>h</sup>a san le jm  
 1SG Lhasa went PST SELF  
 ‘I went to Lhasa.’

A typical example of OTHER is shown in example (121).

- (121) /reʔ/ OTHER used with a third person subject pronoun (Gyg-024-Syn-M)  
 mər ɿas<sup>h</sup>a ndzə reʔ  
 3SG.FEM Lhasa go OTHER  
 ‘She will go to Lhasa.’ (She has not gone yet, but I know this as a fact.)

This SELF versus OTHER distinction is also present in the copulas /woʔ/ ‘EXIST’, which is associated with SELF, and /ŋgə/ ‘VIS.OTHER’, which is associated with OTHER. Examples (122) and (123) demonstrate this distinction. In these examples, /woʔ/ is used to emphasize that the speaker is involved personally in the action and /ŋgə/ is used to emphasize that the speaker is not personally involved in the action, but they did witness the action.

- (122) /woʔ/ EXIST.SELF used with a first person subject pronoun (Gyg-027-Syn-M)

ŋa k<sup>h</sup>ap<sup>h</sup>ar dze də sə woʔ  
 1SG phone hit CONT PROG EXIST.SELF  
 ‘I am making a phone call.’

- (123) /ŋgə/ VIS.OTHER used with a third person subject pronoun (Gyg-027-Syn-M)

k<sup>h</sup>ər k<sup>h</sup>ap<sup>h</sup>ar dze də sə ŋgə  
 3SG.MASC phone hit CONT PROG VIS.OTHER  
 ‘He is making a phone call.’

However, there is not always a one-to-one correlation between SELF copulas and auxiliaries and situations which express the viewpoint of the speaker and privileged personal knowledge. One such example is interrogatives, where the egophoric marker of the expected answer is frequently used. An example of /jm/ SELF being used in an interrogative sentence with a second person subject pronoun is seen in (124).

- (124) /jm/ SELF used in an interrogative with expected SELF answer (Gyg-063-Syn-D)

hoʔ dzutɕ<sup>h</sup>u dze le jm sə lantɕ<sup>h</sup>u dza le jm  
 2SG soccer hit PST SELF or basketball hit PST SELF  
 ‘Do you play soccer or basketball?’

In the above example, the speaker uses SELF marking even though the speaker has no personal knowledge of whether or not the listener plays soccer or basketball. This is because they expect the answer to contain the copula /jm/ SELF. This phenomenon also occurs in spoken Standard Tibetan (Denwood 1999: 130).

Example (125) demonstrates that this phenomenon also extends to the copula /woʔ/ EXIST.

- (125) /woʔ/ EXIST used with in interrogative sentence (Gyg-024-Syn-M)  
hoʔ jeje k<sup>h</sup>ana woʔ  
2SG book where EXIST  
'Where is your book?'

Additionally, while OTHER copulas and auxiliaries frequently occur in sentences with third person subjects, in some environments, the speaker may choose to use either SELF or OTHER marking to express different meanings. This choice is frequently related to the level to which a speaker identifies with a statement, or how widely known they believe a fact to be. An example of this is shown in example (126) and (127).

- (126) /jm/ COP.SELF describing a speaker's profession  
ŋa gɪrɪn jm  
1SG teacher COP.SELF  
'I am a teacher.'

In example (126), the speaker is stating the fact that they are a teacher, and emphasizing their viewpoint. This fact is a property of themselves, of which they have immediate knowledge. However, in example (127) below, the speaker is emphasizing the viewpoint of others. The fact that they are a teacher is well known, and other people identify this as a property of the speaker.

(127) /reʔ/ COP.OTHER describing a speaker's profession

ŋa girgin reʔ  
1SG teacher COP.OTHER  
'I am a teacher, (as is well known).'

There are certain instances where a speaker uses OTHER marking to express a personal belief. To express ideas related to belief, Gyegu Tibetan uses the verb /tatə/ 'view/opinion'. In such examples, /ŋə tatə/, meaning 'In my view', is used as an adjunct to modify a main clause. An example of this construction is shown in (128). In this example, the use of other marking may be attributed to the third person subject of the main clause. It may also be attributed to the fact that the speaker does not have any direct and personal knowledge of whether or not ghosts truly exist. Although (128) uses the visual evidential marker /ŋgə/, there is no direct evidential meaning when used in this context.

(128) /tatə/ 'view/opinion' example (Gyg-048-Syn-M)

ŋə tatə ndze woʔ sa ŋgə  
1SG.GEN view ghosts EXIST possibly OTHER  
'In my view, ghosts possibly exist'.

The perfect SELF marker /ts<sup>h</sup>oʔ/ can also be used with a third person subject, as shown in (129). In this example, although the subject is third person, the speaker is emphasizing their viewpoint and involvement in the event.

(129) /ŋo/ 'to go/to send' used in a causative-like construction (Gyg-060-Syn-D)

k<sup>h</sup>ər ŋa ʃodza=non ŋo ts<sup>h</sup>oʔ  
3SG.MASC 1SG school=in send PRF.SELF  
'He made me go to school.'

## 4.10 WH-Questions, Focus, and Topic

Wh-questions, focus, and topic are realized in a variety of ways cross-linguistically. While some languages displace focused elements to a specific position in the clause, other languages leave focused elements in-situ where they receive prosodic prominence and a focus interpretation (Büring 2009). In this section, I provide a preliminary investigation into wh-questions, focus, and topic in Gyegu Tibetan. This section will first introduce relevant background literature and basic information. Next, evidence will be presented that both focused elements and wh-words are left in-situ and receive prosodic prominence. Then, I describe topic, focusing on topic-comment and contrastive topic constructions. Gyegu Tibetan is then placed within Büring's (2009) typology of focus.

### 4.10.1 Cross-linguistic Review of Focus

The term 'focus' is often vaguely defined and has been used differently by different researchers. One common definition proposes that focus represents 'new information' as opposed to 'given information' or 'presupposition' (Horvath 1986). This 'given information' is taken to be the topic, in juxtaposition to focus. This provides a relatively straightforward and precise way of defining focus, and is therefore adopted for the purposes of this dissertation. Looking at the question-and-answer pair in (130), we see that the question introduces information into the discourse. The fact that Evelyn is the subject and the fact that the discourse participants are discussing what she ate for breakfast, is the 'given information'. That information becomes shared knowledge between all discourse participants. Therefore, when formulating an answer to the question, the knowledge of what Evelyn ate for breakfast is not known to all participants and is introduced to the discourse only in the answer. Therefore, the thing that Evelyn ate for breakfast is considered 'new information' and receives focus.





The above examples demonstrate the variety of syntactic positions in which a focused element may appear cross-linguistically, as well as the cross-linguistic association between focused phrases and prosodic prominence. Researchers have put forward many proposals attempting to explain the relationship between prosody and focus (Büring 2009; Richards 2016; Samek-Lodovici 2005), with some proposing that both focus displacement and in-situ focus can almost entirely be explained using a prosodic account (Büring 2009).

Büring (2009) proposes that languages can be grouped into six categories in terms of their focus marking. These six categories are described in (136).

(136) Table of Büring’s (2009) focus typology

Category Label	Description	Prosodic?
Boundary languages	Focused phrase remains in-situ and is marked by the insertion of a prosodic phrase boundary to the left or right of the focus.	Yes
Edge languages	Focus is marked by non-standard constituent order, with the focus in left- or right-peripheral position.	Yes
Relaxed-edge languages	Focus is marked by non-standard constituent order and occurs towards the left- or right-peripheral position.	Yes
Mixed languages	Focus may optionally remain in-situ and be marked by the insertion of a prosodic phrase boundary or focus may be marked by non-standard constituent order and occur either in or near the left- or right-periphery.	Yes
Particle languages	Focus is marked by the use of a special morpheme.	Yes
Non-marking languages	Focus may remain in-situ and not receive any prosodic prominence.	No

Of the six categories described above, only the non-marking languages cannot be accounted for using a purely prosodic account. In order to solve this problem, Büring

(2009: 205) proposes that focus must always be prominent, but this prominence can be parameterized as either syntax-based or prosody-based.

Evidence is presented in sections 4.10.2 through 4.10.3.4 that Gyegu Tibetan is a boundary language, with a prosodic phrase boundary inserted to the left of the focused phrase.

#### 4.10.2 WH-Questions

In order to determine the position of wh-phrases in Gyegu, I elicited questions with both subject and object wh-words, as seen in (137) - (138).

(137) Subject wh question

s<sup>h</sup>ə tsamba s<sup>fi</sup>a t<sup>hi</sup>  
who barley.flour eat VIS.PFV  
'Who ate tsampa?'

(138) Object wh question

tʂaɕ<sup>hi</sup> s<sup>h</sup>ə ka re?  
Tashi who like OTHER  
'Who does Tashi like?'

In the above examples, both subject and object wh-phrases remain in-situ in their normal syntactic positions. In addition to subject and object wh-phrases, adjunct wh-phrases were also elicited, as seen in (139) and (140).

(139) Where question

tʂaɕ<sup>hi</sup> k<sup>fi</sup>ala dedə wo? re?  
Tashi where live EXIST OTHER  
'Where does Tashi live?'

(140) When question

tʂaɕ<sup>hi</sup> nən s<sup>fi</sup>u t<sup>hi</sup>  
Tashi when ate VIS.PFV  
'When did Tashi eat?'

### 4.10.3 Focus in Gyegu

This section describes the distribution of focused phrases in Gyegu Tibetan. I first provide examples of information focus in Gyegu Tibetan before moving on to focus sensitive operators and corrective focus. I find that phrases receiving information focus or corrective focus, as well as nouns modified by a focus sensitive operator all remain in-situ. After examining the word order and distribution of these constructions, I address questions related to the prosody of focused phrases. I find that focused phrases receive prosodic prominence, with a pronounced rise in pitch and intensity.

#### 4.10.3.1 Information Focus

Examples (141) and (142) show subject wh-question and answer pairs. In these examples, (141a) contains the wh-question and (141b) contains the answer with a focused phrase. Similar to the wh-phrases in section 4.10.2, focused phrases also appear in-situ. Although the focused phrase is not displaced from its canonical sentence position, it does receive prosodic prominence marked by a rise in pitch and intensity. In example (141), 'Tashi' receives information focus, as it is new information introduced into the discourse.

(141) Subject wh-question and answer 1

- a. s<sup>h</sup>ə tsamba s<sup>fi</sup>a t<sup>hi</sup>  
who barley.flour eat VIS.PFV  
'Who ate tsampa?'
- b. tʂaɕ<sup>hi</sup> tsamba s<sup>fi</sup>a t<sup>hi</sup>  
Tashi barley.flour eat VIS.PFV  
'Tashi ate tsampa.'

In (142), /bə/ 'snake' receives information focus.

(142) Subject wh-question and answer 2

- a. s<sup>h</sup>ə tʂaɕ<sup>hi</sup> mbi t<sup>hi</sup>  
what Tashi bite VIS.PFV  
'What bit Tashi?'
- b. bə tʂaɕ<sup>hi</sup> mbi t<sup>hi</sup>  
snake Tashi bite VIS.PFV  
'A snake bit Tashi.'

Focused answers to object wh-questions also remain in-situ in the syntactic position associated with objects, as shown in examples (143) and (144). In (143), /tsamba/ 'barley flour' receives information focus.

(143) Object wh-question and answer 1

- a. tʂaɕ<sup>hi</sup> tɕə s<sup>fi</sup>u t<sup>hi</sup>  
Tashi what ate VIS.PFV  
'What did Tashi eat?'
- b. tʂaɕ<sup>hi</sup> tsamba s<sup>fi</sup>u t<sup>hi</sup>  
Tashi barley.flour ate VIS.PFV  
'Tashi ate tsampa.'

In (144), /pima/ 'Pema' receives information focus.

(144) Object wh-question and answer 2

- a. tʂaɕ<sup>hi</sup> s<sup>hə</sup> ka re?  
Tashi who like OTHER  
'Who does Tashi like?'
- b. tʂaɕ<sup>hi</sup> pɪma ka re?  
Tashi Pema like OTHER  
'Tashi likes Pema.'

The same word order variation observed in declarative ditransitive sentences is observed in wh-questions. An example of this variation is shown in (145), where the order of the direct and indirect object are reversed.

(145) Variable word order in ditransitive wh-questions

- a. dawa tsamba s<sup>hə</sup>=lə di t<sup>hi</sup>  
Dawa barley.flour who=DAT give VIS.PFV  
'Who did Dawa give tsampa to?'
- b. dawa s<sup>hə</sup>=lə tsamba di t<sup>hi</sup>  
Dawa who=DAT barley.flour give VIS.PFV  
'Who did Dawa give tsampa to?'

#### 4.10.3.2 Focus Sensitive Operators

In addition to eliciting wh-questions with focused answers, example sentences containing the focus sensitive operators “only” and “even” were collected. Examples containing ‘only’ are shown in (146) and examples containing ‘even’ are shown in (147). A background context was created for the speaker, in which there is a party, and although many people attend the party, only Tashi ends up eating the tsampa. The response in (146) could be an example of a cleft construction, rather than a more direct equivalent of “Tashi is the only one who ate tsampa.” as desired.

- (146) Focus sensitive operator ‘only’

*Context for (a): There is a party with many food items. However, the only person to eat tsampa is Tashi.*

*Context for (b): There is a party with many food items. Tashi only eats tsampa, and does not eat any other food.*

a. t̥ʂaɕ<sup>hi</sup> k<sup>h</sup>ər k<sup>h</sup>ema tsamba s<sup>fi</sup>u t<sup>hi</sup>  
Tashi himself only barley.flour ate VIS.PFV  
‘Tashi is the only one who ate tsampa.’

b. t̥ʂaɕ<sup>hi</sup> tsamba t<sup>fi</sup>e s<sup>fi</sup>u t<sup>hi</sup>  
Tashi barley.flour DIST.DEM ate VIS.PFV  
‘Tashi only ate tsampa.’

- (147) Focus sensitive operator ‘even’

*Context for (a): There is a party with many food items. It is known that Tashi does not like tsampa. However, on this occasion everyone ate tsampa, including Tashi.*

*Context for (b): There is a party with many food items. It is known that Tashi does not like tsampa. However, on this occasion he ate some of every type of food, including tsampa.*

a. t̥ʂaɕ<sup>hi</sup> ho tsamba s<sup>fi</sup>u t<sup>hi</sup>  
Tashi even barley.flour ate VIS.PFV  
‘Even Tashi ate tsampa.’

b. t̥ʂaɕ<sup>hi</sup> tsamba t<sup>fi</sup>e ho s<sup>fi</sup>u t<sup>hi</sup>  
Tashi barley.flour DIST.DEM even ate VIS.PFV  
‘Tashi even ate the tsampa.’

#### 4.10.3.3 Corrective Focus

Like information focus phrases, corrective focus phrases also remain in-situ. I adopt Gussenhoven’s (2008: 91) definition of corrective focus, which “marks a constituent that is a direct rejection of an alternative, either spoken by the speaker

himself ('Not A, but B') or by the hearer." The corrective focus examples in this section were collected using constructed contexts for elicitation. I described a situation to consultants, provided them with a statement that was incorrect given the context, and they were asked to correct me as if we were in a conversation.

In (148), the context provided to the consultant was: Tashi serves rice that he says Dawa prepared. However, the consultant is aware that Dawa prepared the bread, and not the rice. The initial statement is shown in (a), while the corrective statement is shown in (b).

(148) Corrective focus example 1

- a. dawa ndzi li t<sup>hi</sup>  
Dawa rice make VIS.PFV  
'Dawa made rice.'
- b. ma dawa balo li t<sup>hi</sup>  
NEG Dawa bread make VIS.PFV  
'No, Dawa made the bread.'

In the above example, the object /balo/ 'bread' receives corrective focus. Just as observed in the information focus examples, it is not displaced from its canonical SOV word order to a sentence initial position. Instead, it stays in-situ following the subject and preceding the main verb.

Examples of corrective focus containing the focus sensitive particle /k<sup>h</sup>ira/ 'only' were also collected. Like other examples of corrective focus, NPs modified by /k<sup>h</sup>ira/ remain in-situ. Example (149b) contains an example of /k<sup>h</sup>ira/ 'only' being used with corrective focus. Once again, the question is provided in (a) and the answer in (b).

(149) Corrective focus example containing /k<sup>h</sup>ira/ ‘only’ 1

- a. tɕ<sup>h</sup>u-son ore balo li ɕi ʔə re?  
 you-POSS all bread make know Q OTHER  
 ‘Do you all (your family) know how to make bread?’
- b. [ore li ɕi ma] ts<sup>h</sup>erləjoŋ k<sup>h</sup>ira li ɕi re?  
 all make know NEG Tsiren only make know OTHER  
 ‘No we don’t all know how to make (it), only Tsiren knows how to make it.’

Below, example (150) displays an object NP modified by /k<sup>h</sup>ira/ ‘only’, and provides more clear evidence that these modified NPs are not displaced from their canonical position.

(150) *Question: Do you know how to make yogurt?*

- ŋi balo k<sup>h</sup>ira li ɕi, ɕo li mi ɕi  
 1SG.ERG bread only make know yogurt make NEG know  
 ‘I only know how to make bread, I don’t know how to make yogurt.’

#### 4.10.3.4 Prosodic Prominence

The above examples make it clear that focused phrases are not fronted to a position in the left periphery of the clause, and that there is no specific syntactic position that is associated with focus in Gyegu Tibetan or a dedicated focus marking morpheme. Although the focused phrase is not displaced from its canonical position, it does receive prosodic prominence.

As discussed in Chapter 2, each syllable has either a high or low pitch associated with it, which is determined by the syllable initial. Additionally, the second syllable in a disyllabic word tends to default to high pitch, unless the disyllabic has both a low pitch first syllable and low pitch second syllable. The language does not appear to exhibit a pitch-accent system. At the level of intonational units (IU), there is a

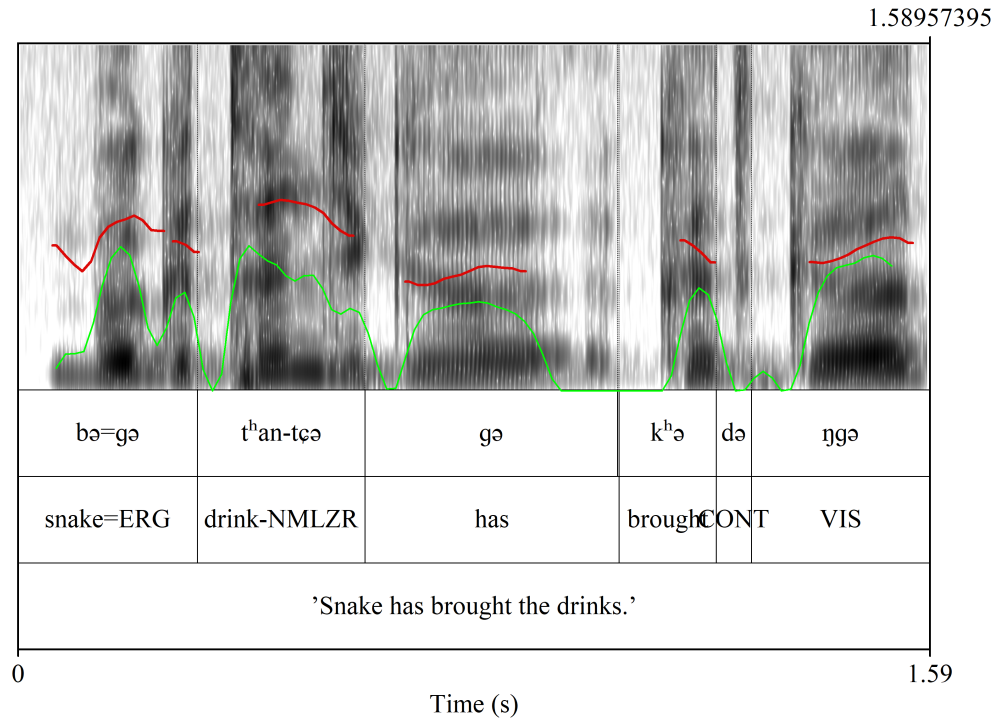


(152) Focused object receiving prosodic prominence

- a. ʔon noze=gə bək<sup>h</sup>ə tɕ<sup>h</sup>ə k<sup>h</sup>ə də ŋgə s<sup>h</sup>i  
again squirrel=ERG snake what brought CONT VIS.OTHER QUOT  
t<sup>h</sup>i  
VIS.PFV  
'Again squirrel asked, what was snake bringing?'
- b. bə=gə t<sup>h</sup>an-tɕəgə k<sup>h</sup>ə də ŋgə  
snake=ERG drink-NMLZ brought CONT VIS.OTHER  
'Snake has brought the drinks.'

Image (153) contains a spectrogram and textgrid which demonstrate the prosodic prominence of the focused phrase. The focused phrase 'drink' has both the highest  $f_0$  and highest intensity, despite not appearing in a sentence initial position. If this were a sentence with no focused phrase, we would expect  $f_0$  and intensity to steadily decrease over the course of the utterance. The fact that this is not the case indicates that 'drink' is receiving prosodic prominence in the form of a rise in pitch and intensity.

- (153) Spectrogram and text grid showing the prosodic prominence of a focused phrase



#### 4.10.3.5 Analysis

Due to the lack of syntactic focus displacement in the data, prosodic prominence of the focused phrase must play an important role in the analysis of Gyegu Tibetan. In terms of Büring’s (2009) typology, Gyegu Tibetan would be classified as a ‘Boundary language’, where the focused phrase remains in-situ and is marked by the insertion of a prosodic phrase boundary to the left or right of the focus (Büring 2009: 183). Based on the available evidence, it appears that a prosodic boundary is inserted to the left of the focused phrase. In Gyegu Tibetan, all phrases within an intonational unit belong to what Büring (2009) refers to as a “phonological phrase”, with the left-most XP in the phrase serving as the head. Because a focused phrase is marked with higher pitch and intensity than the surrounding XPs, we can assume that a prosodic

boundary is inserted to the left of the focused phrase, and it therefore becomes the left-most XP in a given phonological phrase and receives prosodic prominence.

#### **4.10.4 Topic**

For the purposes of this dissertation, I define topic as identifiable and accessible information in the discourse prior to an utterance, following Lambrecht (1994). In other words, topic is ‘presupposition’ or ‘given information’. There are a variety of ways to mark topic in Gyegu Tibetan, including use of a cleft construction to place a topic phrase in a sentence initial position and marking a topic with the morpheme /nə/. The constructions available to mark a given topic depend on whether it is an aboutness/topic-comment construction or contrastive topic construction. In the corpus, examples of topic were elicited through directed narrative, the Questionnaire on Information Structure, and Totem Field Storyboards.

##### **4.10.4.1 Topic-Comment Constructions**

Examples of topic constructions were particularly prevalent in a recorded narrative about a horse racing festival. This narrative was recorded during the field methods class at the University of Washington in Spring 2021. In order to elicit the narrative, the consultant was shown a photograph of her and her family attending the annual Yushu Horse Racing Festival and asked to describe the events surrounding the photo. Although this was not intended to elicit topic constructions, the nature of the task meant that the consultant was frequently pointing to a certain aspect of the photo as the topic, and then commenting on the selected topic, resulting in topic-comment constructions. One such topic-comment construction making use of the topic morpheme /nə/ is shown in (154).

- (154) Topic-comment construction with /nə/ topic marker

tʰɛkə ta-dzəʔ t<sup>fi</sup>its<sup>hi</sup> nə, lolomə da dɪmba ts<sup>hi</sup> ɲɛʒ<sup>hə</sup> ɲa  
 Gyegu horse-race festival TOP every.year month seventh date twenty five  
 ɲəp<sup>h</sup>oʔ t<sup>h</sup>in də sə woʔ reʔ  
 that.day celebrate CONT PROG EXIST COP.OTHER  
 ‘Every year there is a horse racing festival in Yushu being celebrated on July  
 25th.’

It is also possible to place a topicalized phrase in a sentence initial position as a hanging topic, as shown in (156). Cinque (1977: 406) credits the term ‘hanging topic’ to Alexander Grosu, and the definition of a hanging topic as used in this dissertation is best described by De Ambrosi (2023: 11) as “a linguistic phenomenon wherein a topic is introduced at the beginning of a sentence. This means that the initial topic ‘hangs’ or waits for its resolution in the later part of the sentence”. An example of a hanging topic taken from Cinque (1977: 405), is shown in (155) with the topic in bold.

- (155) Example of a hanging topic in English (Cinque 1977: 405)

**Peter**, I saw him with Clara yesterday.

Example (156) contains an example of a hanging topic in Gyegu Tibetan, where the topic appears on the left-periphery of the clause and is followed by a resumptive pronoun. This indicates that the topic is external to the clause beginning with the resumptive pronoun.

- (156) Hanging topic construction

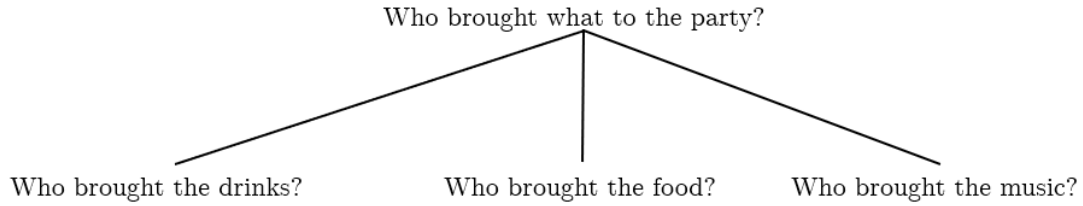
wu ts<sup>h</sup>aitʂən mər dʒa-mu reʔ  
 Wu Caizheng 3SG.FEM Chinese-FEM COP.OTHER  
 ‘Wu Caizheng, she is Chinese.’

#### 4.10.4.2 Contrastive Topic

Unlike *wh*-words and focused phrases, contrastive topics are frequently fronted in Gyegu Tibetan. Following the definition provided in Arregi (2003), I define contrastive topic as a topic included in an answer to a question, where the answer belongs to a set of  $x$  previously established in the discourse for which a given question is relevant.

Example (158) is taken from a recording of a Totem Field Storyboard. In the scenario presented to the consultant, it is already established that food, drink, and music were brought to a party. This party is attended by a scorpion, a bear, a snake, a fish, and a squirrel. Therefore, it is established that food, drink, and music belong to the set of things brought to the party. The consultant was then asked to narrate a story, in which the scorpion asks the squirrel who brought the various items to the party. Therefore, the individual questions in the narrative can be linked to the larger question “Who brought what to the party.” This is linked to Roberts’ (1996) theory of the *question-under-discussion stack*, which “consists of a list of all the questions that are being addressed at a given point in the discourse.” (Constant 2014). Buring (2003) develops this notion further by introducing the idea of the “discourse tree” or *d-tree*. Under Buring’s definition, an answer to a question contains a contrastive topic if there are multiple questions under a parent node in a *d-tree*, and the question being answered is the sister node to other questions under the larger parent node. An illustration of the *d-tree* for the Totem Field Storyboard is shown in (157).

(157) Question tree for the Totem Field Storyboard



In this d-tree, the questions “Who brought the drinks?”, “Who brought the food?”, and “Who brought the music?” are all sister nodes under a single parent node. Therefore, the answers to all of these questions will contain a contrastive topic according to Büring’s (2003) definition. An example of one such question and answer pair from the Totem Field Storyboard narrative told in Gyegu Tibetan is shown in example (158).

(158) Question and answer pair demonstrating contrastive topic

- a. t̄oni t<sup>h</sup>e t̄abaraza=ḡə ənde t<sup>h</sup>an-t̄ə=non s<sup>h</sup>ə  
and.then DIST.DEM scorpion=ERG PROX.DEM drink-NMLZ=PL who  
k<sup>h</sup>ə le re? t̄sa t̄ə le re?  
bring PST OTHER like.that ask PST OTHER  
‘Then the scorpion asked “Who brought the drinks?”’
- b. t<sup>h</sup>an-t̄ə=non t̄s<sup>h</sup>e-t̄s<sup>h</sup>e bə k<sup>h</sup>ə le re?  
drink-NMLZ=PL all-all snake brought PST OTHER  
‘Snake brought all the drinks.’

In both (158a) and (158b), the object ‘drinks’ is not in its canonical SOV sentence position. Instead, it is placed before the subject in a sentence-initial position. This is because ‘drinks’ is a contrastive topic which belongs to a set of  $x$  previously established in the discourse, and for which a given question is relevant. Therefore, it is allowed to be fronted to a sentence-initial position, while the focused phrase ‘snake’

appears after the contrastive topic, but still receives prosodic prominence. This same OSV word order is also observed in the question, indicating that contrastive topic is fronted in both questions and answers.

#### 4.10.5 Interim Conclusion

In summary, *wh*-words and focused phrases in information focus constructions and corrective focus constructions, as well as those accompanied by focus sensitive operators, stay in-situ and receive prosodic prominence which surfaces as a rise in  $f_0$ , an increase in intensity measured in dB, and pitch range expansion. This indicates that Gyegu Tibetan is a ‘Boundary language’ according to Büring’s (2009) typology, and that the prosodic prominence can be explained using Samek-Lodovici’s (2005) Stress-Focus constraint, which states that a focused XP must be prosodically more prominent than other phrases within the focus domain. The fact that focused XPs in Gyegu receive prosodic prominence indicates that this constraint is highly ranked. Furthermore, topic-comment constructions can be formed by adding the topic morpheme /nə/, or by using a cleft construction which places a topicalized phrase in a sentence-initial position. Contrastive topic allows for non-canonical OSV word order, where the contrastive topic is moved to a sentence-initial position.

### 4.11 Summary

This chapter has explored prominent features of the clausal morphosyntax of Gyegu Tibetan. The language follows a relatively strict SOV word order in declarative sentences, although passive constructions and contrastive topic constructions allow for OSV word order. Tense, aspect, and modality are all intimately linked with evidential and egophoric marking, which is pervasive and required in most contexts. Particular attention was also paid to *wh*-questions, focus, and topic. The discussion of these constructions provides valuable insight into sentence level prosody and word order alternations in the language. Although further investigation is needed, this

chapter provides a jumping off point for future research in these areas, and provides the ability to compare Gyegu Tibetan with other Tibetic and non-Tibetic language, contributing to our knowledge of the typology of the language family.

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# Appendices

# A

## The Farmer and the Rabbit

The following story is a narrative told by Mary. In this story, a hardworking farmer gets lucky one day when a rabbit runs into a tree near his field and dies. As a result, the farmer gets an easy meal that day without having to work. After that day, he neglects his duties in the field and waits for another rabbit to die and provide him with another meal. However, this strategy does not pay off for him, and as a result his quality of life suffers. This story conveys the message that you must work diligently for whatever you want in life, and cannot sit idly by and expect good things to happen to you.

The story is broken up into intonational units which are transcribed, glossed, translated, and numbered.

- (1) naniço çm-li-pa ze wo? re?  
long.ago field-work-NMLZ INDF EXIST COP.OTHER  
'Long ago there was a farmer.'
- (2) k<sup>h</sup>o çm jo?-ma li ts<sup>h</sup>owa jo?-ma tç<sup>h</sup>in-də to re?  
3SG.MASC field good-ADJ work life good-ADJ live-sit COP.ATT COP.OTHER  
'He works very hard in his field and lives a great life.'

- (3) ɲɪm-dze ɕɪ non=la ruɡun tsaiʔ ndzɔ də reʔ  
 day-at field in=LOC rabbit one run CONT COP.OTHER  
 ‘One day a rabbit came running into the field.’
- (4) ɕɪm p<sup>h</sup>aka=la tɕoma zə woʔ reʔ  
 field next.to=LOC tree INDF EXIST COP.OTHER  
 ‘There is a tree near the field.’
- (5) təni ruɡun t<sup>fi</sup>e tɕoma ka=la  
 and.then rabbit DIST.DEM tree on=LOC  
 ‘And then the rabbit hit its head on the tree’
- (6) ŋɡo tan sən le reʔ  
 head knock got.PST PST COP.OTHER  
 ‘it knocked its head.’
- (7) ŋɡo tan ts<sup>h</sup>o də ruɡun dɪna ɕə san le reʔ  
 head hit already when rabbit there died went PST COP.OTHER  
 ‘When the rabbit hit its head, it died.’
- (8) niti ɕɪm-li-pa t<sup>fi</sup>e dzamo tɕo woʔ le reʔ  
 and.then field-work-NMLZ DIST.DEM exceptionally happy EXIST PST COP.OTHER  
 ‘Then the farmer was very happy.’
- (9) k<sup>h</sup>ər tɕə tsaiʔ li mə ɡu ɕ<sup>h</sup>a s<sup>fi</sup>a la woʔ le reʔ  
 3SG.MASC what one work NEG need meat eat get EXIST PST COP.OTHER  
 ‘He didn’t need to do any work and he still got meat.’
- (10) təni t<sup>fi</sup>e tsoni k<sup>h</sup>u ma ts<sup>h</sup>a ɕɪm li mə  
 and.then DIST.DEM after.that 3SG.MASC.ERG NEG anymore field work NEG  
 sən  
 want  
 ‘After that, he doesn’t want to work in the field any more.’

- (11) t<sup>fi</sup>e tɕoma t<sup>fi</sup>e ɕ<sup>fi</sup>aʔ=la ɲe  
 DIST.DEM tree DIST.DEM under=LOC sleep  
 ‘just sleeping under the tree,’
- (12) ɲo-delə rugun tɕətɕu kon də də le reʔ  
 day-every rabbit all.the.time wait.for sit CONT PST COP.OTHER  
 ‘every day he was sitting and waiting for a rabbit.’
- (13) dewu rugun ɲo-telu on te ndzɔ ma  
 however rabbit day-every again there go NEG  
 ‘However, rabbits don’t go there every day.’
- (14) ɲətano tɕilə tɕə gu sən nə  
 1PL things what need want if  
 ‘If we want things,’
- (15) <sup>ʔ</sup>ɲɪ gu sən nə  
 money need want if  
 ‘if you want money,’
- (16) tɕə gu sən nə  
 property need want if  
 ‘if you want property’
- (17) tɕə gu sən nə tɕətɕə ɲətano  
 what need want if everything 1PL  
 ‘whatever we want,’
- (18) rurun<sup>hə</sup> ɕ<sup>hə</sup>ɔpɔ təni ɲgaji  
 oneself work.hard and.then only.if.you.do.so  
 ‘only if you work hard,’
- (19) la le reʔ  
 get PST COP.OTHER  
 ‘you get (what you want).’

- (20) təni k<sup>h</sup>o ma-dza ɕɪmapo  
 and.then 3SG.MASC NEG-at.all labor  
 ‘He doesn’t work hard at all.’
- (21) lika mə li  
 work NEG work  
 ‘Doesn’t work,’
- (22) ts<sup>h</sup>o joʔ-ma mə tɕ<sup>h</sup>in  
 life good-ADJ NEG live  
 ‘doesn’t live well,’
- (23) k<sup>h</sup>ər tɕoma ɕ<sup>h</sup>aʔ=la ɕə san le reʔ  
 3SG.MASC tree under=LOC die went PST COP.OTHER  
 ‘he went and died under the tree.’

# B

## Better Late Than Never

The following story is a narrative told by Mary. In this story, shepherd finds a hole in his pen one day. Instead of fixing it, he decides that it is not a big problem. Over the next few days, a wolf eats many of his sheep by sneaking into the pen through the unrepaired hole. Finally, the shepherd repairs the hole, and no more sheep are taken away and eaten by the wolf. The moral of this story is that doing something, no matter how delayed, is better than not doing it at all.

- (1) naniço ʔjə ze woʔ reʔ  
long.ago person INDF EXIST COP.OTHER  
'A long time ago there was a person.'
- (2) k<sup>h</sup>ər lo kapa ts<sup>h</sup>odo woʔ reʔ  
3SG.MASC sheep many take.care.of EXIST COP.OTHER  
'He took care of many sheep.'
- (3) jɪm-tseʔ k<sup>h</sup>ər lo-ra non=la t<sup>f</sup>onk<sup>h</sup>u tɕ<sup>h</sup>embo-ma tsai woʔ le reʔ  
day-one 3SG sheep-pen in=LOC hole big-ADJ one EXIST PST COP.OTHER  
'One day, there was a large hole in his sheep pen.'

- (4) t<sup>fi</sup>e t<sup>h</sup>onk<sup>h</sup>u t<sup>fi</sup>e rai də ta k<sup>h</sup>ər=gə ta t<sup>h</sup>onk<sup>h</sup>u  
 DIST.DEM hole DIST.DEM see when then 3SG.MASC=ERG then hole  
 t<sup>fi</sup>e dʒi jo tɕo reʔ dʒin woʔ le reʔ  
 DIST.DEM leave put fine COP.OTHER think EXIST PST COP.OTHER  
 ‘When he saw the hole, he thought it was fine to leave it there.’
- (5) təni tm tsa dʒi jo le reʔ  
 and.then like that.way leave put PST COP.OTHER  
 ‘And then he left it like that.’
- (6) t<sup>fi</sup>e ɲima ts<sup>h</sup>ə ɕank<sup>h</sup>ə ze t<sup>h</sup>an le reʔ  
 DIST.DEM day late wolf INDF came PST COP.OTHER  
 ‘That night, a wolf came.’
- (7) t<sup>fi</sup>e ɕank<sup>h</sup>ə t<sup>fi</sup>e=gə lo tsaiʔ s<sup>h</sup>i p<sup>h</sup>o-s<sup>fi</sup>u ndzɔ san le  
 DIST.DEM wolf DIST.DEM=ERG sheep one kill away-eat go went PST  
 reʔ  
 COP.OTHER  
 ‘The wolf killed a sheep, ate it, and left.’
- (8) təni t<sup>fi</sup>e ts<sup>h</sup>ə ɲima t<sup>fi</sup>e ʔɲə t<sup>fi</sup>e=gə k<sup>h</sup>ər  
 and.then DIST.DEM late day DIST.DEM person DIST.DEM=ERG 3SG.MASC  
 lo-ra non tatu lo tsaiʔ mi ts<sup>h</sup>oʔ le reʔ  
 sheep-pen in when sheep one lost PRF PST COP.OTHER  
 ‘And then that night when the man look in the pen, he saw that a sheep was  
 missing.’
- (9) teʔon ta k<sup>h</sup>ər lo tsaiʔ k<sup>h</sup>ema mi ts<sup>h</sup>oʔ tɕə tsin  
 although then 3SG.MASC sheep one only lost PRF.SELF what matter  
 tsin ta t<sup>h</sup>onk<sup>h</sup>u t<sup>fi</sup>e ta to tmtsa ts<sup>h</sup>i jo le reʔ  
 thought then hole DIST.DEM then still like.that leave put PST COP.OTHER  
 ‘He thought “It’s only one sheep, it doesn’t matter.” so he left the hole that  
 way.’

- (10) təni k<sup>h</sup>əton ti woʔ le ma  
and.then look.after look.PST EXIST PST NEG  
'And he didn't do anything.'
- (11) təni t<sup>fi</sup>e jima ts<sup>h</sup>ə on ɕank<sup>h</sup>ə t<sup>h</sup>an le reʔ  
and.then DIST.DEM day late again wolf come PST COP.OTHER  
'And then that night the wolf came again.'
- (12) ɕank<sup>h</sup>ə t<sup>fi</sup>e=gə tarpots<sup>h</sup>ə lo jən k<sup>h</sup>ə san le reʔ  
wolf DIST.DEM=ERG this.time sheep two take went PST COP.OTHER  
'This time the wolf came and took two sheep.'
- (13) t<sup>fi</sup>e lo jɪk<sup>h</sup>a s<sup>fi</sup>a ts<sup>h</sup>oʔ le reʔ ɕank<sup>h</sup>ə=gə  
DIST.DEM sheep both eat PRF.SELF PST COP.OTHER wolf=ERG  
'Both sheep were eaten by the wolf.'
- (14) təni t<sup>fi</sup>e ts<sup>h</sup>ə jima t<sup>fi</sup>e ʔjə t<sup>fi</sup>e k<sup>h</sup>ər lo-ra  
and.then DIST.DEM next day DIST.DEM person DIST.DEM 3SG.MASC sheep-pen  
non ta dəta p<sup>h</sup>ots<sup>h</sup>ə lo jən mi ts<sup>h</sup>oʔ le reʔ  
in look when this.time sheep two missing PRF.SELF PST COP.OTHER  
'And then the next day when the man looked in the sheep pen there were two  
sheep already missing.'
- (15) lo jən mi ts<sup>h</sup>oʔ də guo  
sheep two missing PRF.SELF when even  
'Even though he already lost two sheep.'
- (16) ta ŋa lo kapa woʔ reʔ lə lo jən k<sup>h</sup>ema tɕə tsm  
then 1SG sheep many have COP.OTHER reason sheep two only what matters  
tsin ton dzi tsaiʔ jo le reʔ  
think still left one put PST COP.OTHER  
'“I have a lot of sheep, the two that are lost don't mean anything to me.” And  
he left the pen like that.'
- (17) t<sup>fi</sup>e t<sup>h</sup>onk<sup>h</sup>u t<sup>fi</sup>e tonjguo t<sup>h</sup>an=la woʔ le reʔ  
DIST.DEM hole DIST.DEM still there=LOC EXIST PST COP.OTHER



‘So then he filled up the hole.’

- (24) t<sup>fi</sup>e t<sup>h</sup>onk<sup>h</sup>u sən sən ts<sup>h</sup>oʔ      də    təni      ta    lo      tsaiʔ guo mi  
the hole    fill fill PRF.SELF when and.then then sheep one even missing  
woʔ    le    ma  
EXIST PST NEG  
‘After the hole is filled, not even one sheep will go missing.’

# C

## Speaker Initials

Name	Initial
Dennis	D
Mary	M
Tsiren Lhayong	Ts
Wujin	W