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Study on numerals and classifiers in Darmdo Minyag

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1 Darmdo Minyag

Darmdo Minyag is an ethnic language spoken by Tibetans living in the western side of Mt Gongkar, Sichuan Province, China. It characterises most Minyag Tibetans, and it is unintelligible with Khams Tibetan, Amdo Tibetan, and Ersu; among the speakers of Khams Tibetan, it is called *rong skad*. It has received attention from academia since the beginning of the 20th century.

Darmdo Minyag together with Shimian Minyag have been counted as the languages spoken by Minyag Tibetan people; each autonym is $\text{mu}^{33}\eta\text{a}^{55}\text{w}\text{e}$ and $\text{mu}^{33}\eta\text{a}^{55}$ respectively. This article deals with the former, which is distributed in Kangding (Jiju, Gonggashan, Pubarong, Shade, Pengbuxi), Jiulong (Tanggu), and Yajiang (Zhusang, Gala), and among them the dialect of Pengbuxi is a research site.

2 Numerals of Darmdo Minyag

There are five categories: cardinal, ordinal, fraction, multiple, and approximate.

2.1 Cardinal numbers

Darmdo Minyag has two systems: Khams Tibetan type and native type. I present the latter system as follows.

1. From 1 to 9: cardinal number+lo

one	$\text{t}\text{e}^{53}\text{l}\text{o}^{33}$	six	$\text{t}\text{e}^{\text{h}}\text{u}^{53}\text{l}\text{o}^{33}$
two	$\text{n}\text{e}^{55}\text{l}\text{o}^{55} / \text{t}\text{e}^{31}\text{d}\text{z}\text{e}^{55}$	seven	$\eta\text{u}^{53}\text{l}\text{o}^{33}$
three	$\text{s}\text{o}^{53}\text{l}\text{o}^{33}$	eight	$\text{e}\text{a}\text{o}^5 \text{f}\text{o}^{33}$
four	$\text{r}\text{e}^{53}\text{l}\text{o}^{33}$	nine	$\text{g}\text{e}^{53}\text{l}\text{o}^{33}$
five	$\text{n}\text{a}^{55}\text{l}\text{o}^{33}$		

There are nine roots (1 to 9), among which ‘two’ has two forms: $\text{n}\text{e}^{55}\text{l}\text{o}^{55}$ and $\text{t}\text{e}^{31}\text{d}\text{z}\text{e}^{55}$. The latter form also has a meaning ‘a pair of’. All the numerals above are disyllabic, no monosyllabic form.

2. From 10 to 19: fa +cardinal number+lo

ten	$\text{f}\text{a}^5 \text{k}\text{o}^{55}\text{l}\text{o}^{33}$	fifteen	$\text{f}\text{a}^5 \text{n}\text{a}^{55}\text{l}\text{o}^{33}$
eleven	$\text{f}\text{a}^5 \text{i}^{55}\text{l}\text{o}^{33}$	sixteen	$\text{f}\text{a}^5 \text{t}\text{e}^{\text{h}}\text{u}^{33}\text{l}\text{o}^{33}$
twelve	$\text{f}\text{a}^5 \text{a}\text{n}\text{e}^5 \text{f}\text{o}^{33}$	seventeen	$\text{f}\text{a}^5 \eta\text{u}^{33}\text{l}\text{o}^{33}$
thirteen	$\text{f}\text{a}^5 \text{s}\text{o}^{55}\text{l}\text{o}^{33}$	eighteen	$\text{f}\text{a}^5 \eta\text{u}^{33}\text{l}\text{o}^{33}$
fourteen	$\text{f}\text{a}^5 \text{f}\text{e}^{55}\text{l}\text{o}^{33}$	nineteen	$\text{f}\text{a}^5 \text{g}\text{e}^{55}\text{l}\text{o}^{33}$

The form of ‘ten’ is $\text{f}\text{a}^5 \text{k}\text{o}^{55}\text{l}\text{o}^{55}$, however, from ‘eleven’, the element ‘ten’ is just fa^5 which has an allomorph fa^5 . The cardinal number ‘one’ for the one’s place also changes its sound.

3. From 20s to 40s:

twenty	nə ³ ʁud ⁵ ʁo ^{3 3}
twenty-one	nə ³ ʁud ⁵ ʁa ⁵ ʁo ^{3 3}
twenty-eight	nə ³ ʁud ⁵ ʁo ⁵ ʁo ^{3 3}
thirty-one	so ⁵ ʁud ⁵ ʁa ⁵ ʁo ^{3 3}
thirty-two	so ⁵ ʁud ⁵ ʁap ⁵ ʁzɛ ^{3 3}
thirty-eight	so ⁵ ʁud ⁵ ʁo ⁵ ʁo ^{3 3}
forty-one	rə ⁵⁵ ʁud ⁵ ʁa ⁵ ʁo ^{3 3}
forty-three	rə ⁵⁵ ʁud ⁵ ʁo ⁵ ʁo ^{3 3}

Based on the table above, Darmdo Minyag employs the decimal system. The construction is: ‘ten’s number’+ ʁud⁵ ʁ(one’s number)+lo. The element ʁud⁵ ʁis indispensable.

4. From 50s to 100:

fifty	ŋæ ⁵⁵ ga ⁵ ʁo ^{3 3}
fifty-four	ŋæ ⁵⁵ ga ⁵ ʁə ⁵ ʁo ^{3 3}
sixty	tɛ ^h u ⁵ ʁja ⁵ ʁo ^{3 3}
sixty-five	tɛ ^h u ⁵ ʁja ⁵ ʁja ⁵⁵ lo ^{3 3}
seventy	ŋu ³³ ga ⁵³ lo ^{3 3}
seventy-six	ŋu ³³ ja ⁵ tɛ ^h u ⁵⁵ lo ^{3 3}
eighty	ɛo ⁵ ʁja ⁵ ʁo ^{3 3}
eighty-seven	ɛo ⁵ ʁja ⁵³ ŋu ⁵⁵ lo ^{3 3}
ninety	ŋgə ⁵⁵ ga ⁵ ʁo ^{3 3}
ninety-eight	ŋgə ⁵⁵ ga ⁵ ʁo ⁵ ʁo ^{3 3}
ninety-nine	ŋgə ⁵⁵ ga ⁵ ʁgə ⁵⁵ lo ^{3 3}
hundred	ɦa ³³ o ⁵ ʁja ³³ lo ^{3 3}

The construction is: ‘ten’s number’+ ga⁵ ʁ(one’s number)+lo^{3 3}. The element ʁud⁵ ʁis indispensable.

2.2 Ordinal numbers

The ordinal numbers in Darmdo Minyag is the same as Khams Tibetan, which is characterised by the first syllable as a⁵⁵ and the suffix pa or po. E.g.,

first	a ⁵⁵ ta ³ bu ^{5 3}	third	a ⁵⁵ soŋ ⁵ ʁa ^{5 3}
second	a ⁵⁵ ŋi ³ ʁpa ⁵⁵	fourth	a ⁵⁵ zə ³ ʁpa ^{5 3}

For month’s terms, Tibetan forms are used, i.e., Darmdo Minyag uses ordinal numbers: zla dang po ‘January’ and zla drug pa ‘June’.

2.3 Fraction expressions

Fraction expressions in Darmdo Minyag consist of numerator + tə⁵ ʁnbə^{5 3} + ʁæ³³/ tɛ^hɛ³³ku⁵⁵ + denominator, as in:

one fourth	rə ³³ tə ⁵ ʁnbə ³³ ʁæ ³³ tɛ ^h ɛ ³³ tə ⁵ ʁnbə ³³
two fifths	ŋa ⁵⁵ tə ⁵ ʁnbə ⁵ tɛ ^h ɛ ³³ ku ⁵⁵ nu ⁵⁵ tui ⁵⁵ mbə ^{5 3}
one tenth	ɦa ⁵ ko ⁵ ʁtə ⁵⁵ mbə ⁵⁵ tɛ ^h ɛ ³³ ku ⁵⁵ tɛ ⁵⁵ tə ⁵⁵ mbə ⁵³

2.4 Multiple number expressions

Darmdo Minyag has two ways of expression for multiple numbers; the one is da⁵⁵ + cardinal number + lo⁵⁵, in which the first syllable is derived from Tibetan *ldab*, the other is Tibetan cardinal number + lo⁵⁵.

E.g.:

double	da ⁵⁵ te ⁵ ʔo ⁵⁵	triple	da ⁵⁵ na ⁵ ʔo ⁵⁵
four times	da ⁵⁵ soŋ ⁵ ʔo ⁵⁵	sixth times	da ⁵⁵ ŋa ³³ lo ⁵⁵
eleven times	da ⁵⁵ ɦa ⁵ ʔko ⁵ ʔo ⁵⁵	twelve times	da ⁵⁵ ɦa ⁵ ɦi ⁵⁵ lo ⁵⁵

2.5 Approximate number expressions

Approximate numbers in Darmdo Minyag are expressed as a parallel positioning of two close numbers, e.g.:

two-three (days)	nə ⁵⁵ so ³³ (si ³³)
five-six (porcelains)	na ⁵⁵ te ^{ɦu} ⁵³ (phə ³³ ɦa ³³)
Rounded numbers are expressed as “cardinal number + ti ³³ / qa ³³ ʔso ⁵ ʔ”	
twenties (year-old)	(kui ⁵ ʔ) ɦi ³³ ʔe ⁵ ʔti ³³
thirties (persons)	(mə ³³ ni ⁵ ʔ) sə ⁵ teu ⁵ ʔqa ³ ʔso ⁵ ʔ
eleven or twelve	ɦa ⁵ ʔti ⁵ ʔɦa ⁵ ʔni ⁵ ʔo ⁵⁵
three or four	so ⁵⁵ re ⁵³ lo ³ ʔ

3 Classifiers of Darmdo Minyag

The establishment of classifiers is later than numerals. Darmdo Minyag has a rich inventory of classifiers, such as noun classifiers, collective classifiers, measurement units, verb classifiers, indefinite classifiers, and temporary classifiers.

3.1 Noun classifiers

Darmdo Minyag has many noun classifiers with various origins, e.g.:

one (person)	(mə ³³ ni ⁵⁵) ta ⁵⁵ zə ⁵ ʔ	one (drop)	ta ⁵ ʔndu ⁵³
one (circle)	ta ⁵ ʔo ³³ wa	one (time)	ta ⁵ ʔa ⁵ ʔ
one (bowl)	phə ⁵ ʔla ⁵⁵ ta ⁵ ʔo ³³	one (grass)	ɦu ⁵ ta ⁵ ʔzə ⁵ ʔ
one (fragment)	ta ⁵ ʔβe ³³	one (set)	ta ⁵ ʔtshə ³³
one (cluster)	ta ⁵ ʔtsu ³³	one (bundle)	ta ⁵ ʔpa ³³ tcha ³³
one (rice)	ta ⁵⁵ lo ⁵ ʔ		

3.2 Collective classifiers

In using collective classifiers, the numeral ‘one’ is /ta-/, e.g.:

a pair	ta ³³ ʔtshə ⁵ ʔ ta ⁵ ʔzə ³³	a troop	ɦa ⁵⁵ ta ⁵ ʔtshə ⁵⁴ / ta ⁵ ʔzə ⁵⁵
a few	ta ⁵⁵ pi ⁵⁴	a class	ta ⁵⁵ tshe ⁵⁴
a bundle	ta ⁵⁵ ɦe ⁵⁴	two bundles	ni ⁵⁴ ɦa ⁵⁵
a cluster	ta ⁵ ʔtsu ⁵⁵ /ta ⁵ ʔbə ³³	a bucket	ta ⁵ ʔsə ⁵ ʔ
a family	ta ⁵ ʔe ³³		

3.3 Measurement units

length	<i>chi</i> [nə ⁵ hɔ ⁵ ʃ] <i>cun</i> [ta ⁵ ʒnə ³³ ʃ] <i>mthil</i> [ra ⁵⁵ tɛ ⁵⁴ gə ⁵⁵ lə ³³] <i>gao</i> [ta ⁵ hɔ ⁵ ʃ] Elbows [ta ⁵⁴ tɕ ^{hə} ʃtʂa ⁵⁵] <i>bao</i> [ta ⁵ ʒe ⁵ ʃ]
weight	<i>jìn</i> (half-kilo) [dzɛ ³³ ma ⁵ ʃ] <i>rgya srang</i> [dza ⁵⁵ do] <i>gramme</i> [ɣə ² tho ⁵⁵] <i>khal</i> [tɛ ^{hə} ʃbi ³³ ʃ] <i>pidai</i> [lə ⁵⁵] box [k ^{hə} ʃe ⁵⁴] <i>tong</i> [zo ⁵⁵ la ⁵⁴] <i>sheng</i> (litre) [ɣə ² tho ⁵⁵ tɛ ⁵⁵ si ³³]
area	<i>pillar</i> [ta ⁵⁵ dzə ⁵⁴ ɣə ³³] <i>window</i> hɛ ² do ⁵⁵] <i>mu</i> [ta ⁵⁵ la ³³] <i>square metre</i> dzɔ ⁵⁵ k ^{hə} ʃ tɛ ⁵⁵ lo ³³]
time	<i>hour</i> [tɛ ^{hə} ʃ tʂo ⁵⁵] <i>minute</i> ka ⁵⁵ ma ³³] <i>day</i> [ma ⁵⁵ tə ³³]

3.4 Verb classifiers

Frequent verb classifiers are as follows:

walk a step	ta ⁵ ma ³³ dzɔ ³³]	once	ta ⁵ tɛ ⁵ ʃ
cry once	ta ⁵ kə ⁵⁵ ra ⁵⁵]	hit once	ta ⁵ ʃla / ⁵⁴ ŋuə ⁵ ʃ
take a bite	tap ⁵³ βə ³³]	kick once	ta ⁵⁵ tso ⁵ ʃ
turn once	ta ⁵ ʃzu ⁵ ʃ	once	ta ⁵ ʃzu ⁵ ʃ
once	ta ⁵ ŋuə ⁵ ʃ	once	ta ⁵ ʒɿ ³³ ʃɣə ⁵ ʃ

3.5 Indefinite classifiers

a few (things)	ta ⁵³ pə ³³]	a handful (barley)	ta ⁵ ʃla ⁵ ʃ
a little (water)	ta ⁵ ʃnə ⁵ ʃ	a little (salt)	ta ⁵ ʃtʂə ⁵ ʃ
a cluster (of tea)	ta ⁵ ʃsu ⁵ ʃ		

3.6 Temporary classifiers

Temporary classifiers in Darmdo Minyag are mainly derived from nouns. Some are complex classifiers, consisting of a noun + a classifier; the noun is a thing to be counted as a classifier, and is used combined with numerals for counting other things.

a cup of	ta ⁵ ʃhə ⁵⁵ la ³³]	a basket of	bə ⁵ lə ³³ ʃta ³³ ʃi ³³]
a ladle of	ta ⁵ ʃe ³³]	a purse of	lə ²⁴ ta ⁵ ʃi ³³]
a box of (tsampa)	ta ⁵ ʃɛin ⁵⁵ dzi ³³]	a bag of	ʃhə ⁵ tʂə ⁵⁵ ta ⁵ ʃi ³³]
a bucket of	ta ³¹ zu ⁵ la ⁵ ʃ		

As seen above, Darmdo Minyag has a rich number of classifiers; except for measurement units, there are many noun and collective classifiers. Both noun and verb classifiers use the construction of “cardinal number (/ta/ for ‘one’) + noun/verb”. In addition, when noun classifiers are used for ‘one’, ta⁵⁵ zə⁵ ʃ is reserved for ‘persons’, ta⁵⁵ lə⁵ ʃ for ‘round or block things’, ta⁵⁵ zə⁵ ʃ for ‘long things’ (e.g., grass, hair, rope, and bug), and ta⁵³ βə³³ for ‘chip-like things’ (e.g., sheet, leaf, and clothes). A collective classifier ‘one block of’ has two forms: ta⁵ ʃsu⁵⁵ and ta⁵ ʃbə³³, of which the former is used for bigger things and the latter for smaller things.

4 Functions of numerals and classifiers of Darmdo Minyag

Numerals and classifiers of Darmdo Minyag have three principal functions: morphological function, syntactic function, and cultural function. We can assess prominence these functions through a descriptive linguistic method.

4.1 Morphological function

Numerals in Tibetan and Chinese have a strong word-formation competence, for example, compounds and fixed idioms, especially quadrisyllabic expressions, many of which contain numerals. On the other hand, the counterpart of Darmdo Minyag does not often function as a part of word formation. The numeral ‘one’ in Darmdo Minyag displays a very weak competence of making compounds: for example, /ta⁵ pə³ / ‘a few (things)’, /ta⁵ ʔa⁵ ʔ / ‘a little (water)’, and /ta⁵ ʔs^hæ⁵ ʔ / ‘a little (salt)’. Generally, these words are classified into indefinite quantifiers.

4.2 Syntactic function

(1) Darmdo Minyag has a rich number of classifiers; however, they cannot be used alone, and must take a numeral before them. Numerals in Darmdo Minyag, however, can be directly combined with nouns, and do not have to take classifiers to count nouns, e.g.:

one bowl	p ^h ə ⁵ ʔla ⁵⁵ ta ⁵ ʔlo ³³ bowl one-CLS	one egg	va ³³ va ³³ ta ⁵³ -lo ³³ egg one-CLS
one horse	ʔi ³³ ta ⁵ ʔlo ³³ horse one-CLS	one rice	dze ² ta ⁵⁵ -lo ³³ rice one-CLS
three flowers	me ⁵ tɔ ³³ o ⁵ ʔlo ³³		
eight fish	ʔua ⁵ ʔəo ⁵ ʔzæ ⁵		

The situation that numerals directly connected to nouns also appears in Khams Tibetan, e.g., *lcags smyug drug* ‘six pens’, *las don gcig* ‘one thing’, *bzo ba bzhi* ‘four workers’, etc. To the contrary, this type is rare in Chinese. In addition, classifiers in Darmdo Minyag cannot be used alone, and they have to be combined with numerals; when the numeral /ta-/ ‘one’ appear with a classifier, the vowel will change, e.g.:

- (ta) > tɛ⁵⁵βv⁵ ʔ³ ‘one bird’ a -ɛ
- (ta) > tɔ⁵⁵lɔ⁵ ʔ³ ‘one hat’ a -∅
- (ta) > tɛ⁵⁵tɕa⁵³ ‘one story’ a -ɐ
- (ta) > tɔ⁵⁵p^ho ‘one broom’ ɐ -a
- (ta) > tɛp³ʂhi ‘one sentence’ ɐ -ɛp
- (ta) > tɛ⁵⁵ɣu⁵⁵ ‘one time’s food’ a -ɐ

(2) In Darmdo Minyag, the order of a numeral and a classifier is “numeral+classifier”, and a quantifier follows its noun head. E.g.:

- tʂu⁵⁵ ta⁵⁵-dze⁵me³³ ‘half a kilo of salt’
salt one-half kilo
- ndzu⁵⁵ ta⁵⁵-ɣu⁵⁵ ‘one time’s food’

food one-time
 ɛa⁵⁵ ɲa⁵⁵p^{hə}55t^{hə}33 ‘five sacks of barley’
 barley five-sack
 re ʃ^ha⁵⁵ go ʃ^he³³ ‘ten forearm-lengths’ cloth’
 cloth ten-forearm-length

(3) When a quantifier functions as an adverb, it appears before a predicate head. E.g.,

ta⁵⁵-zɸ⁵ k^hø ʃ^he⁵ 3 ‘see once’
 one-time see
 so⁵⁵-ko⁵ 3 wa³³ ‘circumambulate thrice’
 three-around circumambulate

‘I circumambulated the monastery thrice.’

ɲə⁵⁵gon⁵⁵pa³³-le³³ so⁵⁵-ko⁵ 3 wa³³ tə⁵⁵tea⁵⁵ɲa³³
 I monastery-LOC three-around circumambulate go-PFT

‘I went to see my grandfather once.’

ɲe⁵⁵ βa⁵⁵βu⁵³-le³³ tɸ⁵⁵-zɸ³⁵ k^hø³³-jɛ⁵³k^hu⁵⁵-tɛap⁵⁴ri³³xɑ⁵⁵ɲa³³
 I.GEN grandfather-LOC one-time see-go-PFT

(4) When Minyag people observe the external world outside, they tend to classify things based on their external form. Moreover, Minyag people distinguish animate things from inanimate things by using different modifiers, and so do they between human beings and animals. Classifying features reflect Minyag people’s categorisation of knowledge in their language’s lexicon, and they classify things and actions based on things’ form and actions’ way. In addition, several classifiers in Darmdo Minyag can be used not only as quantity but also as a modifying feature. E.g.:

[1] /ta⁵⁵lɔ⁵⁵/ for round-shaped things, e.g., bowl, egg, rice, eyeball, etc.

p^hə ʃ^ha⁵⁵ta⁵⁵lɔ⁵⁵ ‘one bowl’
 va ʃ^ha⁵⁵lɔ⁵⁵ ‘one egg’
 dze ʃ^ha⁵⁵lɔ⁵⁵ ‘one rice’

[2] /tɸ⁵⁵zæ⁵ ʃ/ for long-shaped things, e.g., water, rope, grass, knife, hair, letter, etc.

wu³ va⁵⁵tɸ⁵⁵zæ⁵ ʃ ‘one rope’
 fi⁵⁵mo ʃ^he⁵⁵zæ⁵ ʃ ‘one root’
 tɸ^hə⁵⁵tɸ⁵⁵zæ⁵ ʃ ‘one drop of water’
 rap⁵⁵tɸ⁵⁵zæ⁵ ʃ ‘one road’

[3] /tɸ⁵⁵βæ⁵ ʃ/ for thin-shaped things, e.g., paper, sheet, etc.

ɕe ⁵⁵ ho ³³ tɕ ⁵⁵ βæ ⁵³	‘one paper’
fi ⁵⁵ ri ⁵⁴ tɕ ⁵⁵ βæ ⁵³	‘one blanket’
to ⁵⁵ va ⁵⁴ tɕ ⁵⁵ βæ ⁵³	‘one piece of wood’
ɕe ⁵⁵ tɕ ⁵⁵ βæ ⁵³	‘one piece of steel’

[4] /tɑ³³p^ho⁵⁵/ for ellipsis-shaped things, e.g., broom, wood, flag, etc.

rə ⁵⁵ tɑ ³³ p ^h o ⁵⁵	‘broom’
dzɕ ⁵⁵ ho ⁵⁴ tɑ ³³ p ^h o ⁵⁵	‘bamboo-made brush’
mə ⁵⁵ tɑ ³³ p ^h o ⁵⁵	‘one tail’
tʂi ⁵⁵ ro ³³ tɑ ³³ p ^h o ⁵⁵	‘one wood’

[5] /tɕ³³ɕɐ⁵³/ for square-shaped things, e.g., stone, mud, cattle excrement, etc.

nda ⁵⁵ pa ^{3ɕ} ɕɐ ⁵³	‘one pile of mud’
dzo ⁵⁵ tɕ ^{3ɕ} ɕɐ ⁵³	‘one stone’
tɕ ^h a ⁵⁵ bu ^{3ɕ} ɕɐ ⁵³	‘one pile of cattle excrement’
zɕ ⁵⁵ tɕ ³³ ɕɐ ⁵³	‘one piece of field’

(5) Darmdo Minyag has reduplicated forms to express quantity. E.g.:

tei ^{3ɕ} ə	‘each’	tɕ ^{3ɕ} ə ⁵ tɕ ^{3ɕ} ə ³³	‘some’
ŋa ⁵⁵ za ³³	‘five’	ŋa ⁵⁵ za ³³ ŋa ⁵⁵ za ³³	‘five for each’
ta ⁵⁵ xa ⁵³	‘some’	ni ⁵⁵ ni ⁵⁵ ta ⁵⁵ xa ⁵³	‘several’
tsə ⁵⁵ tʂa ⁵³	‘little’	tsə ⁵⁵ tʂa ⁵⁵ tʂə ⁵⁵ tʂa ⁵³	‘too little’
tɕ ^h u ⁵⁵ tə ^{3ɕ} ki ⁵⁵ le ³³	‘six’	tɕ ^h u ⁵⁵ tə ^{3ɕ} ki ⁵⁵ le ^{3ɕ} tɕ ^h u ⁵⁵ tə ^{3ɕ} ki ⁵⁵ le ³³	‘six parts’

(6) Several classifiers in Darmdo Minyag are loans from Khams Tibetan or Chinese. E.g.,

k ^h e ⁵ tɕ ^{3ɕ} ɕɐ ³³	‘one gramme’	tʂ ^h ə ⁵ tɕ ^{3ɕ} ɕɐ ³³	‘one yuan’
tʂɐ ^ɕ tɕ ^{3ɕ} ɕɐ ⁵³	‘one line’	gɔ ⁵⁵ li ⁵ tɕ ^{3ɕ} ɕɐ ³³	‘one km’
p ^h e ³³ zi ⁵⁵ tɕ ⁵⁵ βæ ⁵³	‘one plate’	mo ⁵⁵ fi ^{3ɕ} ko ⁵⁵ si ³³	‘ten mu’
va ³³ ŋa ⁵⁵ dza ⁵⁵ ma ⁵³	‘five half-kg (2.5 kg) of butter’		

4.3 Cultural function

Chinese numerals have a relatively strong cultural function. “Cultural function” denotes various cultural meanings symbolised by given words and expressions, e.g., ‘how many’, ‘derogatory’, and ‘universal’ meanings. Chinese numerals possess very rich cultural meanings, e.g., ‘three’ denotes ‘many, many times’ (*san fan wu ci* ‘thrice + five times’ = ‘many times’) and universal meaning (*san jiao jiu liu* ‘people of all sorts’); ‘nine’ denotes ‘extremely many’ (*jiu shao* ‘highest heavens’, *jiu si yi sheng* ‘Narrow escape from death’); ‘four’ is considered as an unauspicious word due to its similar sound to ‘die’ and its use in

telephone numbers is avoided. In Tibetan, a cardinal number ‘nine’ (*dgu*) denotes ‘many’ when it is a part of specific compounds, e.g., *skye dgu* ‘people’, ‘*dod dgu* ‘various greeds’, *ngan dgu tshang ba* ‘evils’, and *bzang dgu* ‘all beauties’. Darmdo Minyag lacks this function, and detailed investigations are needed.

5 Contractive study of Darmdo Minyag numeral expressions

5.1 Contrast of numerals of Darmdo Minyag and rGyalrongic languages

Tibetan	Situ-rGyalrong (ICogtse) ¹	Darmdo Minyag	Geshitsa ²	Meaning
gteig	kə-tek	tɛ ⁵³ lo ^{3 3}	rap	one
gn̄is	kə-nəs	nə ⁵³ lo / ⁵⁵ dze ⁵⁵	wne	two
gsum	kə-sam	so ⁵³ lo ^{3 3}	wshu	three
bzi	kə-wdi	rɛ ⁵³ lo ^{3 3}	wza	four
l̄ja	kə-m̄jo	na ⁵⁵ lo ^{3 3}	w̄ja	five
drug	kə-t̄sok	tɛ ^h u ⁵³ lo ^{3 3}	wtehap	six
bdun	kə-ɣnəs	ɲu ⁵³ lo ^{3 3}	s̄ɲe	seven
br̄gjad	wə-r̄jat	ɛyɛ ⁵³ lo ^{3 3}	r̄je	eight
dgu	kə-ŋgu	gɛ ⁵³ lo ^{3 3}	ɲga	nine
bteu	ʃt̄ɣə	tɛ ^h u ⁵³ lo ^{3 3}	z̄ɣa	ten

From a morphological viewpoint, Situ-rGyalrong numerals consist of a prefix and a native word, i.e., “kə/wə+cardinal numeral”; Darmdo Minyag numerals simplified themselves and followed by a suffix, i.e., “cardinal numerals+lo”. Its prefixes have already been integrated to the root, and after that it applied a suffix construction. Geshitsa and Tibetan still maintain the formation “complex initial+root”. E.g., gteig ‘one’, gn̄is ‘two’, and gsum ‘three’ in Tibetan, and wne ‘two’, wshu ‘three’, and wza ‘four’ in Geshitsa. However, the word form for ‘ten’ is different: ʃt̄ɣə in Situ-rGyalrong, and z̄ɣa in Geshitsa; both Tibetan and Darmdo Minyag use a prepalatal affricate initial, but the latter changed into an aspirated initial, which should be investigated.

5.2 Contrast of numerals of Darmdo Minyag and Khams Tibetan

5.2.1 Contrast of numerals over ‘hundred’

Meaning	Darmdo Minyag	Khams Tibetan (Derge)

¹ Qu Ai tang, Jinsong, “The category of Tibetan grammar”, *Minority Languages of China*, No. 6, 2016, page 5.

² Duoerji , *A study of the Dao Fu’s Geshitsa language*, China Tibetology Publishing House, First edition of April 1998, page88.

hundred	fa ³³ o ⁵ ʒa ³³ o	dza ⁵⁵
thousand	tō ⁵ ʔō ⁵⁵ tsha ^{5 3}	toŋ ⁵⁵
ten thousand	tʂhə ⁵ ʔtʂhi ⁵⁵ tshu ^{5 3}	tʂhə ⁵⁵
hundred thousand	nbu ³³ ʂha ^{5 3}	nbə ⁵⁵
million	sa ⁵ ʔa ³³	sa ⁵ ʔa ³³
ten million	ɕɛ ⁵ wa	ɕɛ ⁵ wa
milliard	tō ² /tōje ^{5 3}	doŋ ⁵ ɕə ⁵⁵

Based on this table, numerals over ‘hundred’ in Darmdo Minyag are loans from Khams Tibetan except for a native word /fa³³o⁵ ʒa³³o/ ‘hundred’. Judging from this situation, we can consider that Minyag people have had a number concept up to one hundred and that due to the strengthened recognition on numbers in a recent time they obtained the concept more than one hundred. To sum up, Darmdo Minyag has a multistrata feature of numerals, which implies that numerals belong to an open word class.

5.2.2 Contrast of verb classifiers

Darmdo Minyag	Khams Tibetan	Meaning
ta ⁵ kap ⁵ ʔhap ^{5 3} xə ³³	ཐོང་གཞིག་འགྲོ། [tʰe ⁵⁵ tɕi ³³ ʔhdzɔ ⁵⁵]	go once
ta ⁵ ʔjuə ^{5 3}	ཚར་གཞིག་བཤད། [tʂar ⁵ tɕi ³³ ɕa ⁵ ʔ]	talk once
ta ⁵ kap ⁵ ʔhap ⁵ ʔzo ³³	ལན་གཞིག་གཏོང། [lɛn ⁵ tɕi ⁵³ toŋ ⁵ ʔ]	dispatch once
ta ⁵⁵ tso ^{5 3}	རྒྱ་རྒྱ་གཞིག་རྒྱ། [kaŋ ⁵ dɔ ⁵ tɕi ⁵ ʔdza ³³]	kick once
ta ⁵ ʔa / ⁵⁴ ʔjuə ^{5 3}	གཞིག་རྒྱུ་བ། [tɕi ⁵⁵ dza ⁵ ʔpa]	hit once
ta ⁵ ʔə ⁵⁵ ra ⁵⁵	ཐོང་གཞིག་འབོད། [tʰe ⁵⁵ tɕi ³³ ʔhbo ³³]	shout once

1. Khams Tibetan’s word order of classifier, verb, and numeral is: classifier+numeral+verb

ཐོང་གཞིག་འགྲོ། ‘go once’ ཚར་གཞིག་བཤད། ‘tell once’
time 1 go time 1 tell

2. Darmdo Minyag’s word order of classifier, verb, and numeral is: numeral+classifier+verb

ta⁵⁵ ʔp⁵ k^hə³³ ʔje^{5 3} ‘see once’ ta⁵ ʔə⁵⁵ ra⁵⁵ ‘shout once’
1 time see 1 time shout

To sum up, the word order of the two languages is not the same. The word order of numeral quantifiers in Darmdo Minyag is identical to the counterpart of Chinese, i.e. it consists of a numeral preceding a classifier.

6 Conclusion

Based on the analysis and description above, we can conclude:

(1) Darmdo Minyag has a decimal system, the same as its relative languages, and has the fixed constructions such as “cardinal number+lo” from one to nine, “fa+cardinal number+lo” from ten to nineteen, “ten’s place’s cardinal number +kuə⁵ ʔone’s place’s cardinal number+lo” from twenties to forties, and “ten’s place’s cardinal number +gag+one’s place’s cardinal number+lo” from fifties to nineties.

(2) The numerals of Darmdo Minyag belong to an open class, and they have different origins. The cardinal numbers from 1 to 10 are native words, and those more than 100 are Khams Tibetan loanwords ('100' is a native word: $\text{fa}^{39}\text{o}^5 \text{ʒa}^{39}\text{o}$).

(3) Among ten cardinal numbers from 1 to 10 of Darmdo Minyag, 'two' has two usages: " $\text{nə}^{55}\text{lo}^{55}/\text{tə}^{31}\text{dze}^{55}$ ", $\text{tə}^{31}\text{dze}^{55}$. The latter also means 'a pair of'. Paying attention to the structure, we find many disyllabic or polysyllabic words, and no monosyllabic ones.

(4) Non-rounded numbers of any ten's cannot put ten's place and one's place in parallel, but they need a connecting element ru^5 or gag in between.

(5) In Darmdo Minyag, numerals and nouns are directly connected, and classifiers are unnecessary.

(6) Darmdo Minyag has a rich number of classifiers; of them, except for measurement units, classifiers not only denote a quantity unit but also form a modifying phrase.

(7) Comparing cardinal numbers in Darmdo Minyag with the counterparts in Situ-rGyalrong and Geshitsa, we find that, morphologically, Situ-rGyalrong's construction is "prefix+root", i.e., " $\text{kə/wə}+\text{cardinal number}$ ", whereas Darmdo Minyag's has been simplified and is followed by a suffix. i.e., "root+lo".

(8) Additionally, the competence of lexical derivation and cultural function of Darmdo Minyag cardinal numbers is relatively weak and non-productive.

(9) The word order of a quantifier and a head depends on a noun phrase or a verb phrase. In a noun phrase, the order is "noun+numeral", whereas in a verb phrase, it is "numeral+classifier+verb".