# 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 20<sup>th</sup> century.

Darmdo Minyag together with Shimian Minyag have been counted as the languages spoken by Minyag Tibetan people; each autonym is mu<sup>33</sup>na<sup>55</sup> wæ and mu<sup>33</sup>na<sup>55</sup> 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.

one	te <sup>53</sup> lo <sup>33</sup>	six	tc <sup>h</sup> u <sup>53</sup> lo <sup>33</sup>
two	$n^{55}l^{55} / t^{31}d^{55}$	seven	ηu <sup>53</sup> lo <sup>33</sup>
three	so <sup>5</sup> 3lo <sup>33</sup>	eight	cao <sup>5</sup> <sup>3</sup> o <sup>33</sup>
four	rə <sup>5</sup> 3lo <sup>33</sup>	nine	gə <sup>5</sup> 3lo <sup>33</sup>
five	Na <sup>55</sup> lo <sup>33</sup>		

1. From 1 to 9: cardinal number+lo

There are nine roots (1 to 9), among which 'two' has two forms: nə<sup>5</sup>lo<sup>55</sup> and tæ<sup>31</sup>dze<sup>55</sup>. The latter form also has a meaning 'a pair of'. All the numerals above are disyllabic, no monosyllabic form.

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

ten	ha <sup>5</sup> ko <sup>55</sup> lo <sup>3 3</sup>	fifteen	ha <sup>5</sup> Na <sup>55</sup> lo <sup>3 3</sup>
eleven	ha <sup>5</sup> ≹i <sup>55</sup> lo <sup>3 3</sup>	sixteen	60 <sup>5</sup> tc <sup>h</sup> ū <sup>33</sup> lo <sup>3 3</sup>
twelve	ha <sup>5</sup> 3nə <sup>5</sup> 10 <sup>3 3</sup>	seventeen	60 <sup>5</sup> nu <sup>3</sup> no <sup>3 3</sup>
thirteen	ho <sup>5</sup> 30 <sup>55</sup> lo <sup>3 3</sup>	eighteen	60 <sup>5</sup> nu <sup>3</sup> o <sup>3 3</sup>
fourteen	ho <sup>5</sup> tə <sup>55</sup> lo <sup>3 3</sup>	nineteen	ho <sup>5</sup> yə <sup>55</sup> lo <sup>3 3</sup>

The form of 'ten' is  $ha^5 ko^{55}lo^{55}$ ; however, from 'eleven', the element 'ten' is just  $ha^5$  ? which has an allomorph  $ho^5$  ? The cardinal number 'one' for the one's place also changes its sound.

3. From 20s to 40s:

twenty	$n = {}^{38}\alpha n {}^{5} {}^{8}\alpha {}^{3}$
twenty-one	$n a^{3} B u a^{5} a^{5} b a^{3}$
twenty-eight	nə <sup>3</sup> kua <sup>5</sup> ko <sup>5</sup> ło <sup>33</sup>
thirty-one	$so^5 a^5 a^5 b^{3}$
thirty-two	so <sup>5</sup> kua <sup>5</sup> tap <sup>5</sup> tlze <sup>33</sup>
thirty-eight	$so^5 aua^5 aco^5 a^{33}$
forty-one	$r \partial^{55} \kappa u a^5 \partial^{53} a^{53}$
forty-three	rə <sup>55</sup> sua <sup>5</sup> šo <sup>5</sup> lo <sup>3 3</sup>

Based on the table above, Darmdo Minyag employs the decimal system. The construction is: 'ten's number'+  $\mu ua^{5} = (\text{one's number}) + 10$ . The element  $\mu ua^{5} = 3$  is indispensable.

4. From 50	s to 100:
fifty	ηæ <sup>55</sup> ga <sup>5</sup> ło <sup>33</sup>
fifty-four	ŋæ <sup>55</sup> gæ <sup>5</sup> ≹ə <sup>\$</sup> lo <sup>33</sup>
sixty	tc <sup>h</sup> u <sup>5</sup> $a^{5}$ $a^{5}$ $a^{33}$
sixty-five	tc <sup>h</sup> u <sup>5</sup> 改a <sup>5</sup> 改a <sup>55</sup> lo 33
seventy	ημ <sup>33</sup> ga <sup>53</sup> lo <sup>33</sup>
seventy-six	nu <sup>3</sup> ga <sup>5</sup> ℓc <sup>h</sup> u <sup>55</sup> lo <sup>33</sup>
eighty	60 <sup>5</sup> ga <sup>5</sup> ło <sup>33</sup>
eighty-seven	င္၀ <sup>5</sup> ဗွီa <sup>5</sup> <sup>3</sup> nu <sup>55</sup> lo <sup>33</sup>
ninety	ngə <sup>55</sup> ga <sup>5</sup> ło <sup>33</sup>
ninety-eight	ngə <sup>55</sup> ga <sup>5</sup> to <sup>5</sup> to <sup>33</sup>
ninety-nine	ngə <sup>55</sup> ga <sup>5</sup> ħgə <sup>55</sup> lo <sup>33</sup>
hundred	ha 3390 <sup>5</sup> 32a 3310 33

The construction is: 'ten's number'+  $ga^{5}$  <sup>3</sup>+(one's number)+lo <sup>33</sup>. The element  $ua^{5}$  <sup>3</sup> is 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  $\alpha^{55}\,$  and the suffix pa or po. E.g.,

first	a <sup>55</sup> ta <sup>3</sup> bu <sup>5</sup> <sup>3</sup>	third	a <sup>55</sup> soŋ <sup>5</sup> pa <sup>5</sup> 3
second	a <sup>55</sup> ni <sup>33</sup> pa <sup>55</sup>	fourth	$a^{55}$ zə ${}^{3}$ pa ${}^{5}$ 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 +  $ta^{5} mba^{5} + \chi a^{3/} tc^{h} a^{3} ku^{55} +$ denominator, as in:

one fourth	$r \partial^{33} t \partial^{5} i b \partial^{33} \gamma a^{33} t \partial^{5} i b \partial^{33}$
two fifths	ŋa <sup>55</sup> tə <sup>5</sup> mbə <sup>5</sup> €sʰɐ ³kɯ <sup>55</sup> nɯ <sup>55</sup> tɯ <sup>55</sup> mbə <sup>5</sup> ³
one tenth	ĥa <sup>≸</sup> ko <sup>5</sup> ≹ə <sup>55</sup> mbə <sup>55</sup> tɕʰɐ³³kɯ <sup>55</sup> tɐ <sup>55</sup> tə <sup>55</sup> mbə <sup>53</sup>

### 2.4 Multiple number expressions

Darmdo Minyag has two ways of expression for multiple numbers; the one is  $da^{55}$  + cardinal number +  $lo^{55}$ , in which the first syllable is derived from Tibetan *ldab*, the other is Tibetan cardinal number +  $lo^{55}$ . E.g.:

double	da <sup>55</sup> te <sup>5</sup> <b>ł</b> o <sup>55</sup>	triple	$da^{55}na^5 a^{55}$
four times	da <sup>55</sup> soŋ <sup>5</sup> ≹o <sup>55</sup>	sixth times	da <sup>55</sup> ŋa <sup>33</sup> lo <sup>55</sup>
eleven times	da <sup>55</sup> ha <sup>5</sup> ko <sup>5</sup> ło <sup>55</sup>	twelve times	da <sup>55</sup> ĥa <sup>5</sup> ≹i <sup>55</sup> lo <sup>55</sup>

# 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 <sup>55</sup> so <sup>33</sup> (si <sup>33</sup> )
five-six (porcelains)	$Na^{55}$ tc <sup>h</sup> u <sup>53</sup> (phə ${}^{34}a^{33}$ )
Rounded numbers are exp	pressed as "cardinal number + ti $^{33/}$ qa $^{32}$ so <sup>5</sup> $^{32}$
twenties (year-old)	(kui <sup>5</sup> <sup>3</sup> ) ni <sup>3</sup> eə <sup>5</sup> <sup>3</sup> ti <sup>33</sup>
thirties (persons)	(mə <sup>33</sup> ni <sup>5</sup> ) sə <sup>5</sup> tcui <sup>5</sup> <sup>3</sup> qa <sup>3</sup> <sup>3</sup> tşo <sup>5</sup> <sup>3</sup>
eleven or twelve	ha <sup>5</sup> ti <sup>5</sup> <sup>3</sup> ha <sup>5</sup> ni <sup>5</sup> <sup>3</sup> lo <sup>55</sup>
three or four	so <sup>55</sup> rə <sup>53</sup> lo <sup>3 3</sup>

# **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)	$(ma^{33}ni^{55})$ ta $^{55}za^{53}$	one (drop)	ta <sup>5</sup> <sup>3</sup> ndu <sup>5</sup> <sup>3</sup>
one (circle)	ta <sup>5</sup> ko <sup>33</sup> wa	one (time)	ta <sup>5</sup> ≹a <sup>5</sup> 3
one (bowl)	p <sup>h</sup> ə <sup>5</sup> la <sup>55</sup> ta <sup>5</sup> <sup>3</sup> O <sup>33</sup>	one (grass)	hu <sup>\$</sup> ta <sup>\$</sup> zə <sup>5 3</sup>
one (fragment)	ta <sup>5</sup> 3βe 33	one (set)	ta <sup>5</sup> 3tşhə 33
one (cluster)	ta <sup>5</sup> <sup>3</sup> tsu <sup>33</sup>	one (bundle)	ta <sup>5</sup> ³pa ³³tcha ³³
one (rice)	ta <sup>55</sup> 1ø <sup>5</sup> <sup>3</sup>		

# **3.2** Collective classifiers

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

a pair	$ta^{3}ts^{h}ta^{5} a^{3}ta^{5} a^{33}$	a troop	$ha^{55}$ ta ${}^{5}$ tshe ${}^{54}$ / ta ${}^{5}$ ts ${}^{55}$
a few	ta <sup>55</sup> pi <sup>54</sup>	a class	$ta^{55}ts^{h}e^{54}$
a bundle	ta <sup>55</sup> hv <sup>54</sup>	two bundles	ni <sup>54</sup> ha <sup>55</sup>
a cluster	ta <sup>5</sup> ≹su <sup>55</sup> /ta <sup>5</sup> 3bə 33	a bucket	ta <sup>\$</sup> sə <sup>5</sup> 3
a family	ta <sup>5</sup> fce <sup>33</sup>		

# **3.3 Measurement units**

length	$chi [nə {}^{5}ho^{5} ]$ $cun [ta^{5} {}^{3}nə {}^{3}]$
	$mthil[ra^{55}te^{54}ga^{55}la^{3}]$ gao [ta <sup>5</sup> fio <sup>5</sup> ]
	Elbows[ $ta^{54}ts^{h} = 5^{5}ts^{h}a^{55}$ ] bao [ $ta^{5} te^{5}$ ]
weight	<i>jin</i> (half-kilo) [dze <sup>3</sup> ma <sup>5</sup> ] <i>rgya srang</i> [dza <sup>55</sup> do ]
	gramme[ $\gamma a^{2^{t}}$ tho <sup>55</sup> ] <i>khal</i> [te <sup>h</sup> a <sup>55</sup> bi <sup>3</sup> ]
	<i>pidai</i> [ $l \mathfrak{s}^{55}$ ] box [ $k^{h} \mathfrak{o}^{55} \mathfrak{s} \mathfrak{o}^{54}$ ]
	$tong [zo^{55} la^{54}]$ sheng (litre) [ $\gamma a^{24} tho^{55} te^{55} si^{33}$ ]
area	pillar [ta <sup>55</sup> dzə <sup>54</sup> yə <sup>33</sup> window hə <sup>2</sup> do <sup>55</sup>
	mu [ta <sup>55</sup> la <sup>33</sup> square metre $dzo^{55}k^{h}o^{5} te^{55}lo^{3}$
time	hour $[t_{\varepsilon}^{h_{\Theta}} 2^{s} t_{\varepsilon}^{h_{O}} t_{\varepsilon}^{5}]$ minute ka <sup>55</sup> ma <sup>33</sup>
	day [ma <sup>55</sup> tə <sup>33</sup> ]

### 3.4 Verb classifiers

Frequent verb classifiers are as follows:

walk a step	ta <sup>5</sup> ma <sup>33</sup> dzə <sup>33</sup>	once	ta <sup>5</sup> <b>f</b> a <sup>5</sup> 3
cry once	ta <sup>5</sup> kə <sup>55</sup> ra <sup>55</sup>	hit once	ta <sup>5</sup> ℓla / <sup>54</sup> ŋuə <sup>5</sup> 3
take a bite	tap <sup>5</sup> βə <sup>33</sup>	kick once	ta <sup>55</sup> tso <sup>5</sup> <sup>3</sup>
turn once	ta <sup>5</sup> ðlzu <sup>5</sup> 3	once	ta <sup>5</sup> dzu <sup>5</sup> 3
once	ta <sup>5</sup> ກຼີງuວ <sup>5</sup> 3	once	ta <sup>5</sup> <sup>3</sup> z <sub>]</sub> <sup>3</sup> gə <sup>5</sup> <sup>3</sup>

#### **3.5 Indefinite classifiers**

a few (things)	ta <sup>5</sup> 3pə 33	a handful (barley)	ta <sup>5</sup> fha <sup>5</sup> <sup>3</sup>
a little (water)	ta <sup>5</sup> <sup>3</sup> Na <sup>5</sup> <sup>3</sup>	a little (salt)	ta <sup>5</sup> ≹s <sup>h</sup> æ <sup>5</sup> 3
a cluster (of tea)	ta <sup>5</sup> ≹su <sup>5</sup> 3		

### **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	$ta^5 p^{h} a^{55} la^{33}$	a basket of	bə <sup>5</sup> lə 33a 33i 33
a ladle of	ta <sup>5</sup> ≹co <sup>33</sup>	a purse of	lə <sup>24</sup> ta <sup>5</sup> 3i 33
a box of (tsampa)	ta <sup>5</sup> <sup>3</sup> cin <sup>55</sup> dzi <sup>33</sup>	a bag of	p <sup>h</sup> ə <sup>\$</sup> t <sup>h</sup> ə <sup>55</sup> ta <sup>5</sup> <sup>\$</sup> i <sup>33</sup>
a bucket of	ta <sup>31</sup> zu <sup>5</sup> ła <sup>5</sup> 3		

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', ta  ${}^{55}za^5 a$  is reserved for 'persons', ta  ${}^{55}la^5 a$  for 'round or block things', ta  ${}^{55}za^5 a$  for 'long things' (e.g., grass, hair, rope, and bug), and ta  ${}^{53}\beta e a$  for 'chip-like things' (e.g., sheet, leaf, and clothes). A collective classifier 'one block of' has two forms: ta  ${}^{5}a$  and ta  ${}^{5}a$  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,  $/ta^5 p a^{3/3} / a$  few (things)',  $/ta^5 ka^{5/3} / a$  little (water)', and  $/ta^5 t s^h a^{5/3} / a$  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	$p^{h} \mathfrak{F}^{5} l \mathfrak{a}^{55} t \mathfrak{a}^{5} \mathfrak{Z}^{1} l \mathfrak{o}^{33}$	one egg	va <sup>33</sup> va <sup>33</sup> ta <sup>53</sup> -lo <sup>33</sup>
	bowl one-CLS		egg one-CLS
one horse	γĩ <sup>33</sup> ta <sup>5</sup> <sup>3</sup> lo <sup>33</sup>	one rice	$dze^{24} ta^{55}-lo^{33}$
	horse one-CLS		rice one-CLS
three flowers	me <sup>5</sup> to <sup>33</sup> so <sup>5</sup> <sup>3</sup> lo <sup>33</sup>		
eight fish	$\operatorname{kua}^{5} \operatorname{{}^{3}\!Gao}^{5} ^{2}\!\operatorname{Za}^{5}$		

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)  $> t\epsilon^{55}\beta v^{53}$  'one bird' a - $\epsilon$
- (ta)  $> t \phi^{55} l \phi^{53}$  one hat  $a \phi$
- (ta)  $> te^{55}tsa^{53}$  'one story' a e
- (ta)  $> ta^{55}p^{ho}$  'one broom'  $e^{-a}$
- (ta) > tep  ${}^{32}s^{h}i$  'one sentence' e ep
- (ta)  $> te^{55}yu^{55}$  'one time's food' a-e

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

ts<sup>h</sup>u<sup>55</sup> ta<sup>55</sup>-dz $\epsilon$ <sup>5</sup> $m\epsilon$ <sup>33</sup> 'half a kilo of salt' salt one-half kilo ndzu<sup>55</sup> ta<sup>55</sup>-yu<sup>55</sup> 'one time's food' food one-time  $\mathfrak{sa}^{55}$   $\mathfrak{ga}^{55}\mathfrak{p}^{h}\mathfrak{d}^{55}\mathfrak{t}^{h}\mathfrak{d}^{33}$  'five sacks of barley' barley five-sack re  ${}^{3}\mathfrak{h}\mathfrak{a}^{55}$  go  ${}^{3}\mathfrak{d}\mathfrak{e}^{33}$  'ten forearm-lengths' cloth' cloth ten-forearm-length

(3) When a quantifier functions as an adverb, it appears before a predicate head. E.g.,  $ta^{55}$ -zp  $\frac{5}{8}$  k<sup>h</sup>ø  $\frac{33}{3}\epsilon^{5}$  see once' one-time see so<sup>55</sup>-ko<sup>5</sup> 3 wa<sup>33</sup> circumambulate thrice' three-around circumambulate

'I circumambulated the monastery thrice.'

 $\eta \vartheta^{55} gon^{55} pa^{33} - le^{33}$  so<sup>55</sup>-ko<sup>53</sup> wa<sup>33</sup> t \vartheta^{55} t ca<sup>55</sup> t a<sup>33</sup>

I monastery-LOC three-around circumambulate go-PFT

'I went to see my grandfather once.'

$$\begin{split} \eta e^{55} & \beta a^{55} \beta u^{53} \text{-l} e^{33} & t e^{55} \text{-} z e^{35} & k^h \emptyset^{33} \text{-j} \epsilon^{53} k^h u^{55} \text{-} t \epsilon a p^{54} r i^{33} x \alpha^{55} \eta a^{33} \\ \text{I.GEN grandfather-LOC one-time see-go-PFT} \end{split}$$

(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]  $/ta^{55}lo^{55}/$  for round-shaped things, e.g., bowl, egg, rice, eyeball, etc.

[2] /tv<sup>55</sup>zæ<sup>5</sup> <sup>3</sup> for long-shaped things, e.g., water, rope, grass, knife, hair, letter, etc.

$wu^{3} va^{55}te^{55}ze^{5} a^{5}$	'one rope'
ha <sup>55</sup> mo 37e <sup>55</sup> zæ <sup>5</sup> 3	'one root'
te <sup>h</sup> ə <sup>55</sup> tv <sup>55</sup> zæ <sup>5</sup> 3	'one drop of water'
rap <sup>55</sup> te <sup>55</sup> zæ <sup>5</sup> 3	'one road'

[3]  $/te^{55}\beta a^{53}$  for thin-shaped things, e.g., paper, sheet, etc.

$e^{55}ho^{33}te^{55}\beta a^{53}$	'one paper'
hə <sup>55</sup> ri <sup>54</sup> tɐ <sup>55</sup> βæ <sup>5</sup> 3	'one blanket'
$to^{55}va^{54}te^{55}\beta a^{53}$	'one piece of wood'
ce <sup>55</sup> tv <sup>55</sup> βæ <sup>5</sup> 3	'one piece of steel'

[4] $/ta^{33}p^{h}o^{55}/$ for ellips	is-shaped things, e.g., broom, wood, flag, etc.
rə <sup>55</sup> ta <sup>33</sup> pho <sup>55</sup>	'broom'
$dz_{2}^{55}ho^{54}ta^{33}p^{h}o^{55}$	'bamboo-made brush'
$m a^{55} t a^{33} p^h o^{55}$	'one tail'
$ts^{h}i^{55}ro^{33}$ $ta^{33}p^{h}o^{55}$	'one wood'

$[5] /te^{3/3} ce^{5/3}$ for squa	re-shaped things, e.g., stone, mud, cattle excrement, etc
nda <sup>55</sup> pa 37e 38e <sup>5</sup> 3	'one pile of mud'
dzo <sup>55</sup> te 3e <sup>53</sup>	'one stone'
tcha <sup>55</sup> bu 37e 32e <sup>5</sup> 3	'one pile of cattle excrement'
zə <sup>55</sup> tɐ <sup>3 3</sup> ɛɐ <sup>53</sup>	'one piece of field'

(5)	Darmdo	Minyag	has redui	olicated	forms to	express	quantity	. E.g.:
· · /		20	1			1	1 2	$\omega$

tci <sup>33</sup> 2ə	'each'	te <sup>32</sup> 29 <sup>5</sup> te <sup>32</sup> 29 <sup>33</sup> 'some'
ŋa <sup>55</sup> za <sup>33</sup>	'five'	ŋa <sup>55</sup> za <sup>33</sup> ŋa <sup>55</sup> za <sup>33</sup> ' five for each'
ta <sup>55</sup> xa <sup>5</sup> 3	'some'	ni <sup>55</sup> ni <sup>55</sup> ta <sup>55</sup> xa <sup>5</sup> 3'several'
tsə <sup>55</sup> tsa <sup>5</sup> 3	'little'	tsə <sup>55</sup> tsa <sup>5</sup> <del>{</del> sə <sup>55</sup> tsa <sup>5</sup> <sup>3</sup> 'too little'
tc <sup>h</sup> u <sup>55</sup> tə <sup>3</sup> ki <sup>55</sup>	le <sup>33</sup> 'six'	$tc^{h}u^{55}t = {}^{3}ki^{55}le {}^{3}c^{h}u^{55}t = {}^{3}ki^{55}le {}^{3}$ 'six parts

(6) Several classifiers in Darmdo Minyag are loans from Khams Tibetan or Chinese. E.g., $k^{h}e^{5}$   $^{3}tv$   $^{3}to$   $^{33}$  'one gramme' $ts^{h}o^{5}$   $^{4}v$   $^{3}to$   $^{33}$  'one yuan'tsv  $^{4}tv$   $^{3}tz$   $^{5}$   $^{3}$  one line' $go^{2^{55}}li^{5}$   $^{4}v$   $^{3}to$   $^{33}$  one km' $p^{h}e^{33}zi^{55}tv^{55}\beta x^{5}$   $^{3}$  one plate' $mo^{55}fha$   $^{3}ko^{55}si$   $^{33}$  'ten mu' $va^{33}\eta a^{55}$  dza  $^{55}ma^{5}$   $^{3}$  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.

Tibetan	Situ-rGyalrong (lCogtse) <sup>1</sup>	Darmdo Minyag	Geshitsa <sup>2</sup>	Meaning
gteig	kə-tek	tv <sup>5</sup> 3lo <sup>3 3</sup>	rap	one
gnis	kə-nəs	$n a^{53} lo /^{55} dz e^{55}$	wne	two
gsum	kə-sam	so <sup>5</sup> 3lo <sup>3 3</sup>	wshu	three
bzi	kə-wdi	rə <sup>5</sup> 3lo <sup>3 3</sup>	WZa	four
Іŋа	kə-mŋo	Na <sup>55</sup> lo <sup>3 3</sup>	wŋa	five
drug	kə-tşok	t¢ <sup>h</sup> u <sup>5</sup> 3lo <sup>3 3</sup>	wtchap	six
bdun	kə-şnəs	nu <sup>53</sup> lo <sup>3 3</sup>	sne	seven
brgjad	wə-rjat	sye <sup>53</sup> lo <sup>33</sup>	rjɛ	eight
dgu	kə-ngu	gə <sup>53</sup> lo <sup>3 3</sup>	ŋga	nine
bteu	∫t∫ə	tc <sup>h</sup> u <sup>53</sup> lo <sup>3 3</sup>	zra	ten

5 Contractive study of Darmdo Minyag numeral expressions5.1 Contrast of numerals of Darmdo Minyag and rGyalrongic languages

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', gnjis 'two', and gsum 'three' in Tibetan, and wne 'two', wshu 'three', and wza 'four' in Geshitsa. However, the word form for 'ten' is different: ʃtʃə in Situ-rGyalrong, and zva 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)
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<sup>&</sup>lt;sup>1</sup> Qu Ai tang, Jinsong, "The category of Tibetan grammar", *Minority Languages of China*, No. 6, 2016, page 5.

<sup>&</sup>lt;sup>2</sup> Duoerji, A study of the Dao Fu's Geshitsa language, China Tibetology Publishing House, First edition of April 1998, page88.

hundred	ha 330 <sup>5</sup> 33a 330	dza <sup>55</sup>
thousand	tō <sup>5</sup> <sup>3</sup> tō <sup>55</sup> tsha <sup>5</sup> <sup>3</sup>	toŋ <sup>55</sup>
ten thousand	tşhə <sup>5</sup> ³tşhi <sup>55</sup> tshu <sup>5</sup> ³	tşhə <sup>55</sup>
hundred thousand	nbu <sup>3</sup> tşha <sup>5</sup> 3	nbə <sup>55</sup>
million	sa <sup>5</sup> <sup>3</sup> ya <sup>33</sup>	sa <sup>5</sup> <sup>3</sup> ya <sup>33</sup>
ten million	εε <sup>\$</sup> wa	εε <sup>≸</sup> wa
milliard	tõ <sup>2<sup>i</sup></sup> /tõje <sup>5</sup> <sup>3</sup>	doŋ <sup>\$</sup> ຣə <sup>55</sup>

Based on this table, numerals over 'hundred' in Darmdo Minyag are loans from Khams Tibetan except for a native word /fna  $30^5$  ga 30/ '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.

Darmdo Minyag	Khams Tibetan	Meaning
ta <sup>5</sup> ≹ap <sup>5</sup> ≹hap <sup>5</sup> 3xə <sup>33</sup>	عَدِمِ مِحْمَا رَحِيَّا [the <sup>55</sup> tci 3hdzo <sup>55</sup> ]	go once
ta <sup>5</sup> huə <sup>5</sup> 3	هتر ساتحسار [tshar <sup>5</sup> <sup>3</sup> tci <sup>33</sup> ca <sup>5</sup> ]	talk once
ta <sup>5</sup> kap <sup>5</sup> łhap <sup>5</sup> łlzo <sup>33</sup>	শ্ব শহিশা শার্চনা [lɛn <sup>\$</sup> tci <sup>53</sup> toŋ <sup>5</sup> ]	dispatch once
ta <sup>55</sup> tso <sup>5</sup> <sup>3</sup>	ग्रह्म न्यूय [kan <sup>5</sup> do <sup>5</sup> 3tci <sup>5</sup> 3dza33]	kick once
ta <sup>5</sup> $a/^{54}$ yuə <sup>5</sup> <sup>3</sup>	ग्रेया:ग्रुया:या [tci <sup>55</sup> dza <sup>5</sup> 3pa]	hit once
ta <sup>5</sup> kə <sup>55</sup> ra <sup>55</sup>	<u>هَجه: مَحْمَا المَحْمَمَ المَعْمَا المَحْمَمَ المَحْمَة المَعْمَة المَحْمَة المَحْمَة المَحْمَة المَحْمَة الم</u>	shout once

1. Khams Tibetan's word order of classifier, verb, and numeral is: classifier+numeral+verb ইন্ডাপ্রেল্ল্ 'go once' রূমপ্রিণ্যন্দ্র 'tell once'

time 1 go time 1 tell

5.2.2 Contrast of verb classifiers

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

 $ta^{55}ze^{5}k^{h}g^{33}e^{5}$ 'see once'  $ta^{5}k^{55}ra^{55}$ '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, "fia+cardinal number+lo" from ten to nineteen, "ten's place's cardinal number  $+\mu ua^5$  3-one'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: fia <sup>3</sup>go<sup>5</sup> <sup>3</sup>ga <sup>3</sup>ho).

(3) Among ten cardinal numbers from 1 to 10 of Darmdo Minyag, 'two' has two usages: " $na^{55}lo^{55}/ta^{31}dze^{55}$ ", tæ <sup>31</sup>dze<sup>55</sup>. 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  $\kappa ua^5$  <sup>3</sup> 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., "kə/wə+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".