NATIONAL RESEARCH UNIVERSITY
HIGHER SCHOOL OF ECONOMICS

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NUMERALS IN KINA RUTUL

BASIC RESEARCH PROGRAM

WORKING PAPERS

SERIES: LINGUISTICS
WP BRP 100/LNG/2020

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This paper describes numerals in Rutul (Lezgic, East Caucasian). The data presented here were collected during fieldwork in the village of Kina (Rutul district, Republic of Dagestan, Russia) in 2016 to 2019.

JEL Classification: Z

Keywords: numerals; Rutul; Lezgic; East Caucasian

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2 The publication was prepared within the framework of the Academic Fund Program at the National Research University Higher School of Economics (HSE) in 2019– 2020 (grant №19-04-040) and by the Russian Academic Excellence Project "5-100".

1. Introduction

Rutul (Lezgic, East Caucasian) is a left-branching language with ergative case marking and gender agreement on the verb and some forms of numerals (see below). There are four genders, nouns of Gender 1 and Gender 2 denote males and females, respectively; while other nouns are divided between Gender 3 and 4. Rutul nominals inflect for case (including spatial forms) and number.

Rutul numerals may inflect for gender and/or case depending on their syntactic position.

Lezgic languages use one of the two numeral basis, vigesimal or decimal. Some languages (e.g. Lezgian) use both (numerals from 11 to 19 are based on 'ten', while tens after 20 are based on 'twenty'), others only have the decimal system (e.g. Tsakhur and Archi) (Moroz 2012: 75). Modern Rutul uses a consistently decimal numeral system. The vigesimal system is vestigially preserved in ɢ*a-r* (*-b*, *-d*) 'twenty', which, unlike other tens, has a non-derived stem.

This work is based on my own fieldwork as well as on the studies by Ibragimov (1978), Maxmudova (2002) and Alekseev (1994).

Below, the following classes of numerals are described: cardinal, ordinal, distributive, multiplicative, collective, approximate, and fractions. Collective, approximate and fractions are expressed by constructions, while distributive, ordinal and multiplicative numerals are morphologically derived from cardinal forms.

In Rutul, cardinal, ordinal and collective numerals can be used either in the adnominal position, as a modifier of the noun head[3], or independently, as the head of a NP. In (1), the cardinal numeral 'three' modifies the head *riši* 'sister', while in (2), the numeral *sa=xa* 'one' is the head of the NP.

(1) the numeral 'three' in the adnominal position

jiq'i-r	*je-χda*	*d-iʔi*	*xibɨ-r* *riši*
1.die.PFV-CVB	we-SUB	HPL-COP1	three-2 sister

'He died, we were three sisters.' (kna_2018_03_nzle_1963)

3 In this paper I do not discuss the problem of determining the head in numeral expressions. In the text below, I assume that numerals are modifiers of the noun head.

(2) the numeral ‘one’ in the independent position

q’ʷa^{ʕ}-rχɨnɨχ	*χa-ni*		*d-iʔi,*	*sa*	*χɨnχ-ɨ-d*	*juq’u-d*
two-1	child	ASIDE.be-CVB	HPL-COP1	one	child-OBL-ATTR	four-4
sen	*xu-d*	*sen=kal-dɨ*	*jiʔi,*	*sa=xa*	*t’it’-e-χda*	
year	five-4	year=SIMIL-ATTR	4.COP1	one=ADD	nipple-OBL-SUB	
gi-d		*k’aʔ-dɨ*	*i.*			
UNDER.be-ATTR		small-ATTR	4.COP1			

‘There were two children: one was four or five years old, the other was a nursing baby.’ (kna_2017_08_mhsp_1950)

Headless numerals used in the absolutive, as *sa=xa* ‘one’ in (2), unlike other headless attributes, preserve agreement. While when in the oblique, numerals are substantivized, as *sanuwɨs* ‘one’ in (3), and inflected according to the attributive declension (see Table 1). For example, see (4), where the substantivized proximal demonstrative is used as the third person pronoun.

(3) the numeral ‘one’ in the independent position

sa	*sa-nuwɨ-s*		*kumag*	*haʔa-r=a*
one	one-OBL-DAT		help	4.do.IPFV-CVB=be

‘We help each other ' lit. ‘one to another’ (kna_2018_21_nn_0000)

(4) the proximal demonstrative in the independent position

mi-now-a	*iχdɨlet*	*hɨʔɨ-r=a*		*jiʔi*
this-OBL-ERG	story	4.do.PFV-CVB=be		1.COP1

‘He told a story.’ (kna_2017_06_nzle_1963)

Table 1. The attributive declination (a fragment)

	SG.H		
	'this'	**'old'**	**'four'**
ABS	*mi-d*	*q'aˤs-dɨ*	[*juq'u-r/-b/-d*]
ERG	*mi-now(-a)*	*q'aˤs-now(-a)*	*juq'-now-a*
DAT	*mi-nowɨ-s*	*q'aˤs-nowɨ-s*	*juq'-nowɨ-s*

I will discuss the behavior of cardinal, ordinal and collective numerals in adnominal and independent positions separately in the relevant chapters.

Below, Section 2 to 4 describes the inventory and derivation of cardinal, ordinal and collective numerals, respectively, and provides an overview of the inflection of these classes in headless and modifier positions. Section 5 to 8 describe distributive, multiplicative numerals, fractions and approximate numerals, respectively.

2. Cardinal numerals

In Rutul, cardinal numerals serve as the base to produce all other series of numerals. In Table 2, cardinal forms from 1 to 20 and tens are presented[4].

Table 2. Cardinal numerals

1	*sa*	11	*c'ɨsa*		
2	*q'ʷaˤ-d*	12	*c'uq'ʷaˤ-d*	20	*ɢa-d*
3	*xibɨ-d*	13	*c'ɨxibɨ-d*	30	*xibc'ɨr*
4	*juq'u-d*	14	*c'ujuq'u-d*	40	*jowc'ur*
5	*xu-d*	15	*c'uxu-d*	50	*xuc'ur*[5]
6	*rixɨ-d*	16	*c'ɨrixɨ-d*	60	*rixc'ɨr*

4 Here and below, the form of Gender 4 is used as their citation form.

5 The form *xudc'ur* is also attested.

7	*juɣu-d*	17	*c'ujuɣu-d*	70	*jiɣc'ɨr*[6]
8	*mɨje-d*	18	*c'ɨmɨje-d*	80	*mɨjc'ɨr*
9	*juč'u-d*	19	*c'ɨjuč'u-d*	90	*juǯur*
10	*jic'ɨ-d*				

The cardinals from 11 to 19 are formed by prefixing *c'ɨ-* (*c'u-*) 'teen' (< *jic'ɨd* 'ten'), to the numerals from 1 to 9. Tens from 30 to 90 also have the decimal basis and consist of a stem[7] from 3 to 9 + *c'ɨr* (*c'ur*) (< *jic'ɨ-r* 'ten-1/2'), e.g. *rixc'ɨr* 'sixty' < *rix* 'six' + *c'ɨr*, with certain phonological changes:

In 'forty', the ejective /q'/ changes to /w/, *jowc'ur* < /*juq'*/+/*c'ɨr*/[8].

In 'seventy', /u/ changes to /i/, *jiɣc'ɨr* < /*juɣ*/+/*c'ɨr*/.

In 'ninety', the ejective affricates /č'/ and /c'/ on the morphemic boundary fuse into the voiced affricate /ǯ/, *juǯur* < /*juč'*/+/*c'ɨr*/.

As stated above, numeral ɢ*a-r* (*-b*, *-d*) 'twenty' has a non-derived stem, that is cognate to 'twenty' in some Lezgic languages that use the vigesimal basis (e.g *q̄ad* in Lezgian (Haspelmath 1993: 231)).

For 'hundred' and 'thousand', Rutul uses *weš* and *haʁzɨr*. The word for 'thousand' is borrowed from Persian (Ibragimov 1978: 72), as in other Lezgic languages (e.g. in Lezgian (Haspelmath 1993: 231) and Tsakhur (Kibrik 1999: 155)).

In complex numerals (compounds including two or more numerals), addition is always signaled by the coordinating enclitic *=na* 'and' (see (6)-(8)). The *=na* clitic is a standard means for coordinating two NPs, see (5).

The nasal in the clitic *=na* assimilates the gender suffix in the numeral ɢ*a-d* 'twenty', so the gender distinction is neutralised (cf. ɢ*an=na* < /ɢ*a-r=na*/; /ɢ*a-b=na*/; /ɢ*a-d=na*/).

6 Unlike other tens where the *-c'ɨr* copies the stem vowel (*xuc'ur* 'fifty' < /*xu*/+/*c'ɨr*/), in 'seventy' the stem vowel copies /ɨ/ of the *-c'ɨr* part (*jiɣc'ɨr* < /*juɣ*/ + /*c'ɨr*/).

7 In all numerals (except for numerals based on CV stems, like *sa* 'one') there are epenthetic vowels that occur before the gender suffix. I do not count them as a part of a stem.

8 Notably, the only ten-based stem of tens in Lezgian, *jaxc'ur* 'forty' (Haspelmath 1993: 231), is quite similar to the Rutul numeral.

(5) the coordinating clitic

ha-biši-χda	*a-ni*	*d-iʔi*	*sa*	*rɨš=**na***	*duχ*
that-OBL.PL-SUB	be-CVB	HPL-COP1	one	girl=AND	son

'They had a daughter and a son' (kna_2018_08_msrt_1978)

(6)

Gan=*na*	*xu-d*
twenty=AND	five-4

'25' (elicitation)

(7)

weš=na	Gan=*na*	*juč'u-d*
hundred=AND	twenty=AND	nine-4

'129' (elicitation)

(8)

q'ʷa^{ʕ}-d	*haʁzɨr=na*	*xu-d*	*weš=na*	*xibc'ɨr=na*	*rixɨ-d*
two-4	thousand=AND	five-4	hundred=AND	thirty=AND	six-4

'2536' (elicitation)

As the examples show, in hundreds and thousands the 'multiplicative operation' is expressed by simple juxtaposition of a numeral form 'one' to 'nine' with *weš* 'hundred' or *haʁzɨr* 'thousand', with the former agreeing in Gender 4. This corresponds to the regular absolutive NP structure with a numeral (see Section 2.1).

Rutul does not have special numerals for counting and uses cardinal numerals.

2.1. Inflection in the adnominal position

The form of a cardinal numeral as a modifier depends on the case form of the head. When

the head is in the absolutive, cardinal numerals only inflect for gender, as in (9). The *-r* suffix is used when the nominal head is in Gender 1 or 2, while *-b* and *-d* mark agreement with nouns of Gender 3 and 4, correspondingly. Only numerals from 2 to 20 and numerals that contain them inflect for gender.

(9=1) *jiq'i-r* *je-χda* *d-iʔi* *xibɨ-r* *riši*
1.die.PFV-CVB we-SUB HPL-COP1 three-2 sister
'He died, we were three sisters.' (kna_2018_03_nzle_1963)

With the head in an oblique case, cardinal numerals occur in the attributive form with the suffix *-dɨ*, as in (10).

(10) *babaj* *argɨ-r* *muˤGʷ-a* *juq'-dɨ*
grandmother 1.stay.PFV-CVB village-IN four-ATTR
jetim-a-kʷan
orphan-OBL-COM
'The grandmother stayed in the village with four children.' (kna_2018_03_nzle_1963)

The cardinal numerals 'two', 'five' and 'twenty' (also 'twelve' and 'fifteen' which are based on the numerals 'two' and 'five') manifest agreement in case (case concord in terms of (Polinsky 2015: 3)) with the noun head, which means that the numeral distinguish two stems: one occurs with the absolutive head, as *q'ʷaˤ-* 'two' in (11), while the other — with the head in an oblique case, as *q'uˤn-* 'two.OBL' in (12).

(11) agreement in case of the cardinal numeral 'two'
haj-a *ix-dɨ* *did-dɨ* *jiq'i-ga* *ix-dɨ*
there-EL our-ATTR father-ATTR 1.die.PFV-TEMP our-ATTR

did-dɨ *xibc'ɨr=na* *q'ʷaˤ-d* *sen* *i*

father-ATTR thirty=AND two-4 year COP2

'When our father died, he was thirty-two years old.' (kna_2018_03_nzle_1963)

(12) agreement in case of the cardinal numeral 'two'

xibc'ɨr=na *q'uˤn-dɨ* *sɨd-ɨ-la* *ix-dɨ* *did*

thirty=AND two.OBL-ATTR year-OBL(SUP)-EL our-ATTR father

jiq'i-r

1.die.PFV-CVB

'Our father died at the age of thirty-two.' (kna_2018_03_nzle_1963)

In tables from 3 to 5 absolutive and oblique numeral forms from 1 to 10, 'teens' and tens are presented, correspondingly.

Table 3. Forms of cardinal numerals used in the adnominal position

	ABS			Oblique
	1+2	3	4	
1	*sa*			(*sɨn-dɨ*)
2	*q'ʷaˤ-r*	*q'ʷaˤ-b*	*q'ʷaˤ-d*	*q'uˤn-dɨ*
3	*xibɨ-r*	*xib*	*xibɨ-d*	*xib-dɨ*
4	*juq'u-r*	*juq'u-b*	*juq'u-d*	*juq'-dɨ*
5	*xu-r*	*xu-b*	*xu-d*	*xud-dɨ*
6	*rixɨ-r*	*rixɨ-b*	*rixɨ-d*	*rix-dɨ*
7	*juɣu-r*	*juɣu-b*	*juɣu-d*	*juɣ-dɨ*
8	*mɨje-r*	*mɨje-b*	*mɨje-d*	*mɨj-dɨ*
9	*juč'u-r*	*juč'u-b*	*juč'u-d*	*juč'-dɨ*
10	*jic'ɨ-r*	*jic'ɨ-b*	*jic'ɨ-d*	*jic'-dɨ*

Table 4. Forms of 'teens' used in the adnominal position

	ABS			Oblique
	1+2	3	4	
11	*cʼɨsa*			(*cʼɨsɨn-dɨ*)
12	*cʼuqʼʷaˁ-r*	*cʼuqʼʷaˁ-b*	*cʼuqʼʷaˁ-d*	*cʼuqʼuˁn-dɨ*
13	*cʼɨxibɨ-r*	*cʼɨxib*	*cʼɨxibɨ-d*	*cʼɨxib-dɨ*
14	*cʼujuqʼu-r*	*cʼujuqʼu-b*	*cʼujuqʼu-d*	*cʼujuqʼ-dɨ*
15	*cʼuxu-r*	*cʼuxu-b*	*cʼuxu-d*	*cʼuxud-dɨ*
16	*cʼɨrixɨ-r*	*cʼɨrixɨ-b*	*cʼɨrixɨ-d*	*cʼɨrix-dɨ*
17	*cʼujuɣu-r*	*cʼujuɣu-b*	*cʼujuɣu-d*	*cʼujuɣ-dɨ*
18	*cʼɨmɨje-r*	*cʼɨmɨje-b*	*cʼɨmɨje-d*	*cʼɨmɨj-dɨ*
19	*cʼɨjučʼu-r*	*cʼɨjučʼu-b*	*cʼɨjučʼu-d*	*cʼɨjučʼ-dɨ*

Table 5. Forms of tens used in the adnominal position

	ABS			Oblique
	1+2	3	4	
20	G*a-r*	G*a-b*	G*a-d*	G*ad-dɨ*
30	*xibcʼɨr*			*xibcʼɨr-dɨ*
40	*jowcʼur*			*jowcʼur-dɨ*
50	*xucʼur*			*xucʼur-dɨ*
60	*rixcʼɨr*			*rixcʼɨr-dɨ*
70	*jiɣcʼɨr*			*jiɣcʼɨr-dɨ*
80	*mɨjcʼɨr*			*mɨjcʼɨr-dɨ*

90	*juʒur*	*juʒur-dɨ*

The numeral ‘one’ does not take gender suffixes and has the same form *sa* whatever the gender of the head.

The Gender 3 form *xib* of the numeral *xibɨd* ‘three’ can be explained as fusion of the gender suffix *-b* with the last consonant of the stem (*xib* < /*xibɨb*/).

Numerals ‘one’, ‘two’ and ‘eleven’,‘twelve’ based on them have suppletive oblique stems (-)*sɨn-*, (-)*q’uˤn-*. Numerals ‘twenty’, ‘five’ and ‘fifteen’ based on it also have suppletive oblique stems ɢ*ar-* and (-)*xur-* which changed into ɢ*ad-* and (-)*xud-* before the attributive suffix *-dɨ* (*xud-dɨ* ‘five-ATTR’ < ‘/*xur*/ + /*dɨ*/’, *c’uxud-dɨ* ‘fifteen-ATTR’ < ‘/*c’uxur*/ + /*dɨ*/’ and ɢ*ad-dɨ* ‘twenty-ATTR’ < ‘/ɢ*ar*/ + /*dɨ*/’). Cf. multiplicative forms of these numerals presented in Section 6 where the oblique stems ɢ*ar-* and (-)*xur-* are preserved.

Uses of the oblique stem *sɨn-* ‘one’ in the adnominal position with an oblique head are not attested in the Kina corpus, in this context the form *sa* is used instead, as in (13). While Mukhad Rutul in such contexts uses the form *sɨn-dɨ* ‘one-ATTR’ derived from the suppletive oblique stem *sɨn-* (Maxmudova 2002: 208).

(13) the numeral ‘one’ modified an oblique head

ha-d *sa* *edemi-ji-d* *gwalaχ diš*

that-ATTR one man-OBL-ATTR job COP.NEG

ha-d *xib-dɨ* *juq’-dɨ* *edemi-ji-d* *gwalaχ w-iʔi*

that-ATTR three-ATTR four-ATTR man-OBL-ATTR job 3-COP1

‘It is not one man’s job, it is a job for three or four people.’ (kna_2018_21_nn_0000)

The noun head modified by a numeral usually takes the singular form (cf. (9)), but there are some examples in the corpus where the head is in the plural, as *juldaš-er* ‘friend-PL’ in (14).

(14) the plural noun head modified by a numeral

sa *gruzin,* *sa* *armenin,* *sa* *musulman=xa* *xibɨ-r* *juldaš-er*

one Georgian one Armenian one Muslim=ADD three-1 friend-PL

d-iši-r=xa *gaˤš-dɨ*

HPL-become.PFV-CVB=ADD hunger-ATTR

'The Georgian, the Armenian and the Muslim, three friends, became hungry' (kna_2018_17_gljh_1942)

In a complex numeral, only the last numeral agrees in gender with the head, as *xu-d* 'five-4' agrees with the head *kilo-bɨr* (kilogram[R]-PL) in (15), and only the last numeral takes the suffix *-dɨ* if the head is in an oblique case, as the numeral *q'uˤn-dɨ* 'two-ATTR' in (16).

(15) the agreement of a complex numeral: head in the absolutive

<...> ɢ*a-d* ɢ*a=na* *xu-d* *kilo-bɨr*

twenty-4 twenty=AND five-4 kilogram[R]-PL

'<...> twenty-twenty five kilograms' (kna_2018_21_nn_0000)

(16=12)the agreement of a complex numeral: head in an oblique

xibc'ɨr=na *q'uˤn-dɨ* *sɨd-ɨ-la* *ix-dɨ* *did*

thirty=AND two.OBL-ATTR year-OBL(SUP)-EL our-ATTR father

jiq'i-r

1.die.PFV-CVB

'Our father died at the age of thirty-two.' (kna_2018_03_nzle_1963)

Numerals *weš* 'hundred', *haʁzɨr* 'thousand' morphologically behave like nouns; they do not take any gender markers. In a complex form, the numeral expressing the number of hundreds, thousands etc. agrees with them by taking Gender 4 marker *-d*. Some examples of complex numerals are presented in Table 6.

Table 6. Complex numerals used in the adnominal position

	ABS			Oblique
	1+2	3	4	
31	*xibcʼɨr=na sa*			(*xibcʼɨr=na sɨn-dɨ*)
2536	*qʼʷaˀ-d haʁzɨr=na xu-d weš=na xibcʼɨr=na rixɨ-r*	*qʼʷaˀ-d haʁzɨr=na xu-d weš=na xibcʼɨr=na rixɨ-b*	*qʼʷaˀ-d haʁzɨr=na xu-d weš=na xibcʼɨr=na rixɨ-d*	*qʼʷaˀ-d haʁzɨr=na xu-d weš=na xibcʼɨr=na rix-dɨ*

2.2. Inflection in the independent position

As shown in Table 7 and 8, when used headlessly, in the absolutive (unmarked) case cardinal numerals from 2 to 20 and complex numerals that contain them distinguish the gender of the referent. The form is thus the same as in the adnominal position. In oblique cases, forms of numerals are derived by adding oblique stem suffixes *-now-* (for human referents) or *-di-* (for non-human referents) and then the case suffix to the stem of a numeral.

Table 7. Case inflection of the substantivized cardinal numeral ‘four’

	1+2	3	4
ABS	*juqʼu-r*	*juqʼu-b*	*juqʼu-d*
ERG	*juqʼ-now-a*	*juqʼ-di-ra*	
DAT	*juqʼ-nowɨ-s*	*juqʼ-di-s*	
ATTR	*juqʼ-now-dɨ*	*juqʼ-di-d*	

Table 8. Case inflection of the substantivized cardinal numeral ‘eleven’

	1+2	3	4
ABS	*cʼɨsa*		

ERG	*c'ɨsɨ-now-a*	*c'ɨsɨn-di-ra*
DAT	*c'ɨsɨ-nowɨ-s*	*c'ɨsɨn-di-s*
ATTR	*c'ɨsɨ-now-dɨ*	*c'ɨsɨn-di-d*

The /n/ consonant of the stem *c'ɨsɨn-* 'eleven' merges with /n/ of the oblique suffix *-now(ɨ)-*, *c'ɨsɨnow-* < /*c'ɨsɨnnow-*/.

When used independently, numerals from 'one' to 'five' also have plural forms, cf. plural forms of the numeral 'one' presented in Table 9. Plural forms are mainly used in the meaning of school grades (*q'ʷaˤdbɨr* 'two's').

Table 9. Case/number inflection of the cardinal numeral 'one'

	SG			**PL**		
	1+2	**3**	**4**	**1+2**	**3**	**4**
ABS	*sa*			*sa-bɨr*		
ERG	*sɨ-now-a*	*sɨn-di-ra*		*sa-biš-e*	*sa-mɨ-ra*	
DAT	*sɨ-nowɨ-s*	*sɨn-di-s*		*sa-biše-s*	*sa-mɨ-s*	
ATTR	*sɨ-now-dɨ*	*sɨn-di-d*		*sa-biš-dɨ*	*sa-mɨ-d*	

3. Ordinal numerals

Ordinal numerals are formed by adding suffix *-xus-* (from *huxus* 'to say') (Nasledskova, Netkachev submitted), (Maisak 2016: 609-611), (Arkadiev, Maisak 2018: 20) to the cardinal absolutive form and the attributive suffix *-dɨ*. For some examples see Table 10.

Table 10. Ordinal numerals 'first', 'second' 'third'.

	Cardinal	**Ordinal**
1	*sa*	*sa-xus-dɨ*
2	*q'ʷaˤ-d*	*q'ʷaˤ-d-xus-dɨ*

3	*xibɨ-d*	*xibɨ-d-xus-dɨ*

3.1. Inflection in the adnominal position

An ordinal numeral used as a modifier of the noun head agrees with it in gender and takes the attributive suffix *-dɨ* both when the head is in the absolutive (as in examples from (17) to (19) where the numeral *xibɨdxusdɨ* 'third' agrees with the head *dahar* (stone), *c'ɨc'* (grasshopper) and *edemi* (man), respectively) and in an oblique case (as in (20) the numeral agrees with the head *edemi-je-s* (man-OBL-DAT)).

(17) *xib-xus-dɨ* *dahar*
three.3-ORD-ATTR stone
'a third stone' (elicitation)

(18) *xibɨ-d-xus-dɨ* *c'ɨc'*
three-4-ORD-ATTR grasshopper
'a third grasshopper' (elicitation)

(19) *xibɨ-r-xus-dɨ* *edemi*
three-1-ORD-ATTR man
'a third man' (elicitation)

(20) <…> *xibɨ-r-xus-dɨ* *edemi-je-s*
three-1-ORD-ATTR man-OBL-DAT
'[I gave the money] to the third man' (elicitation)

3.2. Inflection in the independent position

Inflection of headless ordinal numerals does not differ from the inflection of other headless attributes. As other substantivized forms, ordinal numerals in the independent position are inflected for case, number and gender. In Table 11, some forms of a substantivized ordinal numeral 'sixth' are presented.

Table 11. Inflection of the substantivized ordinal numeral 'sixth'

	1+2		3		4	
	SG	**PL**	**SG**	**PL**	**SG**	**PL**
ABS	*rixi-r-xus-di*	*rixi-r-xus-di-bir*	*rixi-b-xus-di*	*rixi-b-xus-di-bir*	*rixi-d-xus-di*	*rixi-b-xus-di-bir*
ERG	*rixi-r-xus-now-a*	*rixi-r-xus-di-biš-e*	*rixi-b-xus-di-ra*	*rixi-b-xus-di-mi-ra*	*rixi-d-xus-di-ra*	*rixi-d-xus-di-mi-ra*
DAT	*rixi-r-xus-nowi-s*	*rixi-r-xus-di-biši-s*	*rixi-b-xus-di-s*	*rixi-b-xus-di-mi-s*	*rixi-d-xus-di-s*	*rixi-d-xus-di-mi-s*
ATTR	*rixi-r-xus-now-di*	*rixi-r-xus-di-biš-di*	*rixi-b-xus-di-d*	*rixi-b-xus-di-mi-d*	*rixi-d-xus-di-d*	*rixi-d-xus-di-mi-d*

The oblique singular forms, as stated for Mukhad Rutul in (Maxmudova 2002: 210-211), usually contain the attributive suffix *-di*, that can however be omitted (for example, *rixirxus-now-a* 'sixth-OBL-ERG' instead of *rixirxus-di-now-a* 'sixth-ATTR-OBL-ERG' and *rixibxus-di-ra* 'sixth-OBL-ERG' instead of *rixibxus-di-di-ra* 'sixth-ATTR-OBL-ERG'). For Kina Rutul only the singular forms with the omitted *-di* are attested; the plural forms with omission have not been checked.

4. Collective numerals

Based on (Melchuk 1985: 37) and (Heim, Kratzer 1998: 154), Russkih (2019: 117) proposes the following definition of collective numerals: a collective numeral is a quantifier that choses N elements from the set of N elements. As examples (21) and (22) show, the use of collective numerals has a presupposition that the total number of items in the set equals the number of items selected by the numeral. This distinguishes collective numerals from cardinal numerals, cf. (22) and (23).

(21) *There were two apples on the table. John ate both of them*.

(22) *There were three apples on the table. #John ate both of them.*

(23) *There were three apples on the table. John ate two of them.*

In Rutul, collective numerals are derived from the respective cardinal forms by adding *sin* 'all', see (24). I refer to this combination as 'a collective numeral', despite the fact that the numeral and the quantifier 'all' behave more like a construction than a single morphological word (see discussion in 4.1.).

(24) *uǯe* *sa* *ostanovka-j-a* *mi-bɨr* *q'ʷaˁ-rsin*

already[R] one bus.stop[R]-OBL-SUP this-PL two-1 all

s-e<l>č'u-r=a

DOWN-<HPL>move.PFV-CVB=be

'They both got off (the bus) at the bus stop.'

The word *sin* is also used independently as a quantifier (as in (25)).

(25) *nes-dɨ* *q'aˁs-dɨ* *ix-dɨ* *insan-aš-e* *sin*

before-ATTR old-ATTR we-ATTR person-OBL.PL-ERG all

χɨl-i-ra *haʔa-r-i-j* *ǯu-du*

hand-OBL-ERG 4.do.IPFV-CVB-COP1-PST self.OBL.M-ATTR

*'*Our old people did everything with their own hands' (kna_2018_10_nzle_1963)

As a reaction to collective forms in a Russian stimulus (like *troje* (all two)*, dvoje* (all three)), Rutul speakers tend to use simple cardinal forms:

(26) *xibɨ-r* (*wɨɣɨldɨ*)

three-1 man

‘All three (men)’ (elicitation)

Rutul also has a special word for the meaning ‘pair’ - *čut.*

4.1. The morphological status of collective numerals

The morphological status of collective numerals is ambiguous. It is unclear to what extent the combination of a cardinal numeral with the quantifier ‘all’ behaves as two separate words or a construction. The examples from (27) to (29) show that the numeral and the quantifier modify an NP and behave more like separate items. For example, both the numeral and ‘all’ take the attributive suffix in (28) and (29) when modifying NPs in an oblique case. Also in (27), the numeral agrees in gender with the head in the absolutive.

(27) *xib sin hejwan w-aχɨ-r*

three.3 all horse 3-run.PFV-CVB

‘All three horses ran away’ (elicitation)

(28) *xib-dɨ sin-dɨ šu-s urus č’el w-ac’a-r=a*

three-ATTR all-ATTR brothers-DAT russian language 3-know.IPFV-CVB

‘All three brothers know Russian’ (elicitation)

(29) *za-d xib-dɨ sin-dɨ hejwana-s korma hɨwɨ-r*

I.OBL-ERG three-ATTR all-ATTR horse-DAT feed 4.give.PFV-CVB

‘I fed all three horses’ (elicitation)

When a collective numeral is used independently in the absolutive, it behaves same as in the adnominal position. In (30), the numeral takes the gender suffix *-r*.

(30=24)*uǯe* *sa* *ostanovka-j-a* *mi-bɨr* *q'ʷaˤ-rsin*

already[R] one bus.stop[R]-OBL-SUP this-PL two-1 all

s-e<l>č'u-r=a

DOWN-<HPL>move.PFV-CVB=be

'They both got off (the bus) at the bus stop.' (kna_2018_05_gljh_1942)

When a headless collective numeral is in an oblique case, as in (25) and (26), both the substantivized numeral and 'all' take the oblique stem suffix *-now-*, but only 'all' takes a case suffix (the attributive in (25) and the dative in (26)). Thus, case is marked on the whole group of the numeral and the quantifier 'all'.

(25) *q'uˤ-now* *si-now-dɨ* *wɨɣle* *dɨ-rq'ɨrq'ɨ* *haʔa-r=a*

two-OBL all-OBL-ATTR man.PL HPL-die.IMP 1.do.IPFV-CVB=be

daˤʔwi-j-a

war-OBL-IN

'Both (women) had their husbands killed in the war.' (kna_2017_01_mhsp_1950)

(26) *za-χda* *xibɨ-r* *šu,* *xib-now* *si-nowɨ-s* *urus*

I-SUB three-1 brother three-OBL all-OBL-DAT russian

č'el *w-ac'a-r=a*

language 3-know.IPFV-CVB=be

'I (have) three brothers and all three know Russian.' (elicitation)

This indicates that collective numerals have constructional properties. Interestingly,

consultants believe that, as a part of a collective numeral, the cardinal numeral and the quantifier ‘all’ should be written together as one word.

5. Distributive numerals

According to (Cable 2014: 563), distributive numerals are ‘morphosyntactic constructions containing a numeral, whereby (i) the sentence as a whole receives a distributive reading, and (ii) under the allowable readings, the numeral contained within the construction must be interpreted as if it is within the scope of a distributive operator’ (see (27)).

(27) *w-ij-a* *xixba-na* *eč*
3-give-IMP by.three-ADV apple
‘Hand out apples in threes!’ (elicitation)

In Rutul, distributive numerals may have two forms, either a short form or a *-na* form, the latter being derived from the former by adding the adverbial suffix *-na* (see Table 12). The distribution of *-na* forms and short forms is not clear, nor is it clear whether short and *-na* forms are in free variation or complementary distribution.

The forms denoting ‘by one’, ‘by two’, ‘by three’, ‘by five’, ‘by twenty’ are produced involving partial left-to-right ~CV reduplication from cardinal stems. The numeral ‘by eleven’ is produced by reduplication of *sa* alone. Forming distributive numerals by reduplication is a fairly common strategy, including in East Caucasian languages (see Gil 2013).

Other forms have the epenthetic vowel /a/ or /e/ after the stem. Perhaps, this is evidence that the forms with *-na* are primary, while the short forms truncate the adverbial suffix, but the epenthetic vowel remains as a trace. Some of the short forms coincide with short multiplicative forms (see Section 6).

Table 12. Distributive numerals

	Distributive forms	**Cardinal stems**

by 1	*sa~sa*(*-na*)	*sa*
by 2	*q'ʷaˤ~q'a*(*-na*)	*q'ʷaˤ-*
by 3	*xi~xba*(*-na*)	*xib-*
by 4	*juq'a*(*-na*)	*juq'-*
by 5	*xu~xa*(*-na*)	*xu-*
by 6	*rixa-na/rixba*	*rix-*
by 7	*juɣa*(*-na*)	*juɣ-*
by 8	*mɨje*(*-na*)	*mɨj-*
by 9	*juč'e*(*-na*)	*juč'-*
by 10	*jic'a*(*-na*)	*jic'-*
by 11	*c'ɨsa~sa*(*-na*)	*c'ɨsa*
by 20	G*a*~G*a*(*-na*)	G*a-*
by 40	*jowc'ur*	*jowc'ur*
by 50	*xuc'ur-na/xuc'ura*	*xuc'ur*
by 100	*weše*(*-na*)	*weš*

Probably because of articulation complexity, the second part of the reduplication complex of the numeral 'by 2' loses the labialization on /q'/ and pharyngealization on /a/ (*q'ʷaˤ~q'a*</*q'ʷaˤ~q'ʷaˤ*/).

The numeral 'by 3', in addition to reduplication, undergoes metathesis of /x/ and /b/, *xixba*</*xib~xi*/. Apparently, these changes occurred in the Kina variant of Rutul but not in other dialects; cf. a straightfoward reduplication *xib~xe* in Mukhad Rutul (Maxmudova 2002: 212).

I cannot account for the presence of /b/ in the shortened form of the numeral 'by six' *rixba*.

For distributive numerals produced from 'hundred' and 'fifty' there are also simple reduplicated forms *weš~weš* and *xuc'ur~xuc'ur* 'by hundred/fifty grams', used in reference to distributive quantities of alcohol.

It seems that in Kina Rutul derivation of distributive forms by reduplication is less common than in Mukhad Rutul. For example, for Mukhad Rutul the following reduplicated forms are reported: 'by four' (*juqud~juqud-na*) in (Ibragimov 1978: 74), 'by hundred' (*weše~weše*), 'by eight' (*mɨje~mɨje*), 'by seven' (*jɨwa~jɨwa*) in (Maxmudova 2002: 212). In our data for Kina Rutul, these

forms are not attested. In Mukhad Rutul, according to (Ibragimov 1978: 74), the *-na* forms are inflected for gender (1,2 *juqu-r~juqu-r-na,* 3 *juqu-b~juqu-b-na,* 4 *juqu-d~juqu-d-na*), which is not the case in Kina.

6. Multiplicative numerals

Multiplicative numerals express the number of times that a situation repeats, e.g 'twice', see (28).

(28) *he-mi* *qi̵-wi̵lc'a-r=a-ni* *xib-a-rʒiken*
EMPH-this RE-4.give.IPFV-CVB=be-CVB three-MULT1-MULT2
t'alak' *za-d* *he-mi-d* *allah-a-d*
divorce I-ERG EMPH-this-ATTR Allah-OBL-ATTR
siqrigi̵n *kar*
divorce thing
'Three times in front of Allah talaq made, I gave (her) a divorce'

Multiplicative numerals have two forms: one is formed by adding suffix *-a* (*-e*) to a cardinal stem and the other also takes *-rʒiken* (some consultants pronounce as *-raʒiken*),[9] see Table 13. According to consultants, the *rʒiken* form is an older one. Some of the short forms coincide with the short distributive forms (see Table 12).

Table 13. Multiplicative numerals

	Multiplicative form		Cardinal stems
	Full forms	Short forms	
ones	*sada-rʒiken*	*sada*	*sa*
twice	*q'uˤn-e-rʒiken*	*q'uˤn-e*	*q'uˤn-*

9 Etymology of this suffix is not entirely clear. (Ibragimov 1978: 75) suggests for Mukhad Rutul that the multiplicative suffix *-riʒikim* comes from *raʒ* 'queue'. In (Maxmudova 2002: 214) *raʒiken* is written separately from the numeral, so its morphological status is also ambiguous.

thrice	*xib-a-rǯiken*	*xib-a*	*xib-*
four times	*juq'-a-rǯiken*	*juq'-a*	*juq'-*
five times	*xur-a-rǯiken*	*xur-a*	*xur-*
six times	*rix-a-rǯiken*	*rix-a*	*rix-*
seven times	*juɣ-a-rǯiken*	*juɣ-a*	*juɣ-*
eight times	*mɨj-e-rǯiken*	*mɨj-e*	*mɨj-*
nine times	*juč'-e-rǯiken*	*juč'-e*	*juč'-*
ten times	*jic'-a-rǯiken*	*jic'-a*	*jic'-*
twenty times	*Gar-a-rǯiken*	*Gar-a*	*Gar-*
hundred times	*weš-e-rǯiken*	NA	*weš-*

The multiplicative numerals 'twice', 'five times' and 'twenty times' are derived from the oblique stems *q'uˤn-*, *xur-* and *Gar-* which also occur in the oblique cardinal forms used as modifiers, see Section 2.1. The multiplicative numeral *sada* is an independent lexeme 'once'.

7. Fractions

In Rutul, there is a special strategy for forming fractions 'NUM-4 NUM-DAT', where the first numeral form, the one that expresses the numerator, takes Gender 4 suffix, and the second numeral, the one that expresses the denominator, takes the dative suffix (see (29)). Usually however, numerals borrowed from Russian are used in these contexts (e.g *tri pyat-ɨx*; Rus. three fifth-GEN; '⅗').

(29) *xibɨ-d xud-di-s*

three-4 five-OBL-DAT

'⅗' (elicitation)

This construction is different from fraction forms in Mukhad Rutul, where the inter-elative suffix is used (Ibragimov 1978: 76) instead of the dative observed in Kina.

To express the meaning of one and a half Rutul has a special construction ‘X and a part’, see (30) and (31).

(30) the construction ‘X and a part’

q’ɨʔ-dɨ	*riši-d*	*jiʔi*	*waz=na*	*sur*
small-ATTR	sister-ATTR	4.COP1	month=ADD	part

‘The younger sister is one and a half months old’ (kna_2018_03_nzle_1963)

(31) the construction ‘X and a part’

saˤʔaˤt=na	*sur*
hour=AND	part

‘1.5 hours’ (elicitation)

The word *sur* can also be used independently, in the meaning of ‘side’, as in (32).

(32) *sur* ‘side’

lec’-ur-dɨ	*ti-ʔ*	*sur-u=xʷa*	*χɨnime-r*
river-OBL-ATTR	yonder-LAT	side-OBL(SUP)=ADD	child.PL-PL

xij-e	*a-d-ubʁɨ-r=a*	*d-iši-r*
water.OBL-IN	PV-HPL-bathe.IPFV-CVB=be	HPL-become.PFV-CVB

ani	*d-iʔi*	*lec’-ur-a*	*samur*	*lec’-ur-a*
be-CVB	HPL-COP1	river-OBL-IN	Samur	river-OBL-IN

‘And on the other side of the river, children were bathing in water <...> in the river < ... > in the Samur river’ (kna_2017_03_said_1973)

By analogy with Russian, to denote fractions with a numerator equal to one, ordinal

numerals can be used, as in (33).

(33) *juq'u-d-xus-dɨ* *sur*
four-4-ORD-ATTR part
'a quarter', lit. 'the fourth part' (elicitation)

8. Approximate numerals

To convey the approximate meaning, a construction consisting of a sequence of two numerals incrementally increased by one is used, see (34) and (35).

(34) *haj-a* *qu-ʔ* ***q'uˤn-dɨ*** ***xib-dɨ*** *wazɨr-a*
there-EL back-LAT two.OBL-ATTR three-ATTR month.OBL-IN(ESS)
je-k^{w}*an* *q-i<r>ši-r*
we-COM RE-<2>become.PFV-CVB
'After that she stays with us about two-three months' (kna_2017_08_mhsp_1950)

(35=13)*ha-d* *sa* *edemi-ji-d* *gwalaχ diš*
that-ATTR one man-OBL-ATTR job COP.NEG
ha-d ***xib-dɨ*** ***juq'-dɨ*** *edemi-ji-d* *gwalaχ w-iʔi*
that-ATTR three-ATTR four-ATTR man-OBL-ATTR job 3-COP1
'It is not one man's job, it is a job for three or four people.' (kna_2018_21_nn_0000)

9. Conclusion

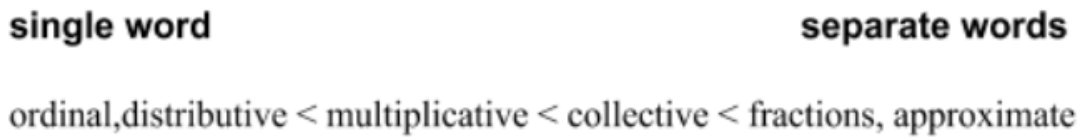
In this paper, I have described numerals in Kina Rutul. Most of the classes of numerals are similar to those in other documented Rutul dialects (save some phonetic differences). Kina Rutul has a consistently decimal numeral system, with the numeral ɢ*ad* 'twenty' as the only trace of the old

vigesimal system.

The cardinal numerals ‘two’, ‘five’, ‘twelve’, ‘fifteen’ and ‘twenty’ manifest agreement in case with the noun head. Unlike Mukhad Rutul, in Kina Rutul, in the adnominal position with an oblique head, the numeral ‘one’ does not use its oblique form (*sɨn-dɨ* ‘one-ATTR’) and uses the form *sa* instead.

All described numeral classes were ‘numerals’, but the question about the morphological status of some classes remains. Cardinal (smaller) numerals are underived and are morphologically the most simple of all (not to count the gender agreement slot). Ordinal, distributive (and multiplicative) numerals are morphologically complex (derived from the cardinal) but behave like morphological words. Collective forms (as briefly discussed in Section 4.1) behave more like two separate words, though they do show some evidence of cohesion. For example, case marking on the whole complex, that may be one of the evidences of grammaticalization of the quantifier ‘all’. Finally, fractions and approximate numerals are constructions of two separate words. See Fig. 1.

Fig. 1. Scale of morphological cohesion



In Kina Rutul, some distributive numerals are derived by reduplication, which is a common strategy in the languages of the world and is widely attested in Daghestan. But in Kina Rutul, reduplication is not as productive as in other dialects of Rutul and in closely related languages (for example Lezgian (Haspelmath 1993: 235)), and not all numerals have reduplicated forms in distributive.

Distribution of full and short forms of distributive and multiplicative numerals remains unclear. It remains to be seen whether the short forms are just a phonetic simplification of the full forms or they are syntactically or semantically distributed.

List of abbreviations

1 – first gender

2 – second gender

3 – third gender

4 – fourth gender

ADD – additive

ADV – adverbial

AND – conjunctive

ASIDE – preverb ‘aside’

ATTR – attributive

COM – comitative

COP – copula

CVB – converb

DAT – dative

DOWN – preverb ‘down’

EL – elative

EMPH – emphatic

ERG – ergative

ESS – essive

H – human

HPL – human plural

IMP – imperative

IN – localization ‘inside’

IPFV – imperfective stem

LAT – lative

M – masculine

MULT – multiplicative

NEG – negation

OBL – oblique stem

ORD – ordinal

PFV – perfective stem

PL – plural

PST – past tense

PV – preverb (verbal prefix)

R – borrowed from Russian

RE – refactive

SG – singular

SIMIL – similative

SUB – localization ‘under’

SUP – localization ‘on’

TEMP – temporal converb

UNDER – preverb ‘under’

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