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The morphology of numerals and classifiers in Japhug*

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Abstract: This paper describes the morphology and syntactic uses of numerals and classifiers in Japhug, and discusses the Burmo-Qiangic origins of the numeral prefixal paradigm.

Keywords: Japhug, numerals, classifiers, Naish, Pumi, Lolo-Burmese, analogy, *status constructus*

1 Introduction

In many Burmo-Qiangic languages, including Lolo-Burmese (Bradley 2005) and Naish (Michaud 2011, 2013), the combination of numerals with classifiers is an area of grammar (indeed, in some languages, the only area of grammar) where morphological irregularities and complex alternations are attested.¹

Somewhat paradoxically, in Rgyalrong languages, otherwise known for their polysynthetic and irregular verbal morphology (Sun 2014; Jacques 2012b), numerals and classifiers present relatively simple and predictable alternations.

In this paper, we first present a description of the morphology and morphosyntax of numerals and classifiers in Japhug and other Rgyalrongic lan-

*Glosses follow the Leipzig rules, to which the following are added: FACT factual, GENR generic, EMPH emphatic, IFR inferential, INV inverse, LNK linker, SENS sensory. The Tibetan transcription is based on Jacques (2012a).

¹In the interest of space, we do not present here data on languages other than Japhug and Stau; the reader is invited to consult the cited sources for comparison.

guages (going beyond the account in [Jacques 2008](#)) based on both corpus data and elicitation for some paradigms.

Then, we evaluate several competing analyses to account for the observed data. First, Japhug may never have developed these irregular systems: as shown by [Bradley \(2005\)](#), most alternations in Lolo-Burmese and other languages are the indirect effects of lost final obstruents. Since Japhug preserved all final obstruents as distinct segments, the basic conditions for the alternations to develop might not have been present in the first place. Second, the system found in Japhug could have recently been completely innovated. Third, it could be cognate with the numeral + classifier paradigms in Lolo-Burmese and Naish but have been thoroughly simplified by analogical levelling.

2 Numerals and classifiers in Japhug

In this section, I present a synchronic description of the syntax and morphology of numerals and classifiers in Japhug, with some additional data on Stau, another Rgyalrongic language, for comparison.

First, I describe the structure of the noun phrase and the place of numerals and classifiers in it. Second, I provide an account of the morphology of numerals up to one hundred. Third, I compare the plain numerals with the numeral prefixes used on classifiers. Fourth, I discuss the numerals above one hundred. Fifth, I briefly mention the approximate numerals, which appear to be specific to Rgyalrong languages.

2.1 Word order

The noun phrase in Japhug presents the following word order:²

- (1) DEM-NOUN^{modifier}-NOUN^{head}-ADJ-NUM-DEM

Numerals and classifiers appear after nouns and adjectives as in examples 2 and 3.

- (2) **tyɣtso χsum, rgarguun ɣnuwz, nu ra kɣ-fstun**
 child three old.people two DEM PL INF-serve
pu-ra
 PST.IPFV-have.to

²Note that attributive adjectives are all relative clauses; pre-nominal attributive adjectives are rare, but not wholly unattested.

She had to take care of three children and two old people (on her own). (Relatives, 27)

- (3) **tɕe u-mat tu-rdoɣ u-ŋgu u-ryi**
 LNK 3SG.POSS-fruit one-piece 3SG-inside textsc3sg.poss-see
tu-rdoɣ ma me.
 one-piece apart.from not.exist:FACT
 There is only one seed in (each one) of its fruit. (Cherry, 89)

The use of classifiers in Japhug is quite restricted in comparison with languages such as Naish, Lolo-Burmese or Lizu/Ersu (see Lidz 2010, 216-224, Zhang 2014). There are a few classifiers specific for particular shapes such as **tu-ldza** ‘one long object’, **tu-p^hu** ‘one tree’, or **tu-mpɕar** ‘one sheet’. However, most nouns (including nouns with animate or inanimate referent) use the generic classifier **tu-rdoɣ** ‘one piece’ (from Tibetan **rdoɣ**).

Classifiers are not used in Japhug to express indefinite reference (unlike in languages such as Na, cf Lidz 2010, 206). The indefinite determiner and numeral **ci** ‘one, a’ is used for this purpose.

Some classifiers express a specific quantity, size or number of individuals (such as **tu-boɣ** ‘one group’ or **tu-spra** ‘a handful of’). Most classifiers, however, are used either to convey a distributive meaning, as in the example 4, or to single out an individual from a group, as in 5.

- (4) **turme tu-rdoɣ ku c^hymdɣru tu-ldza**
 people one-CL ERG drinking.straw one-CL
tu-nu-ndɣm
 IPFV-AUTO-take[III]
 Each person takes one straw. (Alcohol, 37)

- (5) **u-tɕu kuβde pu-tu ri, uzo ku-fse**
 3SG.POSS-son four PST.IPFV-exist but 3SG NMLZ:S/A-be.like
ku-ɕqraɣ tu-rdoɣ cinɣ pu-me
 NMLZ:S/A-be.intelligent one-piece even PST.IPFV-not.exist
ɲu-ŋu
 SENS-be
 He had four sons, but not even one of them was as smart as he.
 (The smart one, 3)

Numerals and classifiers can be used without nouns. Repetition of a classifier with the same numeral prefix expresses a regular distribution as in 6.

- (6) **tu-rdoʁ tu-rdoʁ ku-fse tu-foʁ ɲu ma**
 one-CL one-CL NMLZ:S/A-be.like be:FACT IPFV-come.out LNK
mɣ-arɣk^huɪmk^hɣl.
 NEG-be.in.clusters:FACT

(The mushrooms) grow one by one separately, (they do not grow) in clusters. (22-BlamajmAG, 129)

2.2 The morphology of plain numerals

Rgyalrongic languages differ from otherwise closely related languages such as Naish (Michaud 2011) or Pumi (Daudey 2014, 141, Ding 2014, 91-2) in that the numerals 11, 12, 13, 16 and in some languages 14, present a labial linker element between the root for ‘ten’ and that of the unit. This labial linker is variously realized as a stop, a labio-dental fricative or the nasal **m** depending on the following consonant.

The linker appears whenever the root of the unit does not contain an initial cluster. Note that the bare root of the numeral does not always correspond to the simple numeral. In Japhug **ɲnuuz** ‘two’ and **χsum** ‘three’ have a uvular prefix; in Stau **ɲni** ‘two’, **xsə** ‘three’, **ɣɛdə** ‘four’ and **xtɕ^hu** ‘six’ have a velar fricative prefix which is lost in the numerals between 11 and 20, and which appears to correspond to the presyllable **ku-** found in the numerals from four to nine in Japhug.³

Since the numerals which do not have the linker element (15, 17, 18 and 19) are also the ones whose bare root contains an initial cluster, the labial linker can be considered to appear between the two numerals roots in numerals between 11 and 19, whenever no cluster is present in the second root.

It is unclear to what extent this linker is a Rgyalrongic innovation, or an archaism, lost in other languages due to analogy, but its complete absence outside of Rgyalrongic suggests that the first option is more probable.

Numerals between twenty and 99 in Japhug can be generated by combining the tens with the units, replacing the **-sqi** element with the appropriate teen form, as indicated for numerals between 21 and 29 in Table 1.

³On the simplification of presyllables in Japhug and their sensitivity to onset complexity, see Jacques (2014).

Table 1: Comparison of basic numerals in Japhug and Stau

Numeral	Japhug	Stau
1	tɣɣ / ci	ru
2	ɤ-nuuz	ɣ-ni
3	χ-sum	x-sə
4	ku-βde	ɣ-ɬdə
5	ku-mɲu	mbe
6	ku-tɣɣ	x-tɕ ^h u
7	ku-ɕnuuz	zɲi
8	ku-rcat	rje
9	ku-nguut	ŋgə
10	sqi	zɤa
11	sqa-p-tuɣ	ɤa-v-ru
12	sqa-m-nuuz	ɤa-m-ɲi
13	sqa-f-sum	ɤa-f-sə
14	sqa-βde	ɤa-v-ɬdə
15	sqa-mɲu	ɤa-mbe
16	sqa-p-rɣɣ	ɤa-p-tɕ ^h u
17	sqa-ɕnuuz	ɤa-zɲi
18	sqa-rcat	ɤa-rje
19	sqa-nguut	ɤa-ŋgə
20	ɣɲɣ-sqi	ɣnə-sq ^h a
21	ɣɲɣ-sqaptuɣ	nə-ɣru
22	ɣɲɣ-sqamnuuz	nə-ɣni
23	ɣɲɣ-sqafsum	nə-x-sə
24	ɣɲɣ-sqaβde	nə-ɣɬdə
25	ɣɲɣ-sqamɲu	nə-mbe
26	ɣɲɣ-sqaprɣɣ	nə-xtɕ ^h u
27	ɣɲɣ-sqaɕnuuz	nə-zɲi
28	ɣɲɣ-sqarcat	nə-rje
29	ɣɲɣ-sqanguut	nə-ŋgə
30	fsu-sqi	x-sə-sq ^h a
40	kuβdɣ-sqi	ɣɬə-sq ^h a
50	kumɲɣ-sqi	mbe-sq ^h a
60	kutɣɣ-sqi	xtɕ ^h u-sq ^h a
70	kuɕɲɣ-sqi	zɲi-sq ^h a
80	kuɣrcɣ-sqi	rje-sq ^h a
90	kuŋɣu-sqi	ŋgə-sq ^h a

2.3 Numeral prefixes

In contrast with the relatively complex forms of the numerals 11 to 19, the combinations of numerals and classifiers in Japhug and Stau are relatively simple.

Table 2 illustrates the numeral prefix paradigm in Japhug: the final consonants of the numeral root are lost, and the vowels **a** and **i** change to **ɣ** and **u** respectively, but no other change takes place. In the case of the numerals above ten, prefixal form is optional; it is possible to use the free form instead. Prefixal forms for other numerals under 100 can be generated with the same rules.⁴

The numerals **kuβde** ‘four’ and **kumŋu** ‘five’ have two variants **kuβde-** / **kuβdɣ-** and **kumŋu-** / **kumŋɣ-** in the prefixal paradigm, the first of which is most common.

⁴The final stop **-t** in **kungut** ‘nine’ is unexpected (it is not even found in the closely related Situ language where we have **kəngu** ‘nine’), and most probably due to analogy with the coda of **kurcat** ‘eight’.

Table 2: Numeral prefixes in Japhug

Numeral	Free form	–sɲi ‘day’	–rʒaʁ ‘night’
1	tɾɣ	tu-sɲi	tɾ-rʒaʁ
2	ʁnuwz	ʁnu-sɲi	ʁnɾ-rʒaʁ
3	χsum	χsu-sɲi	χsɾ-rʒaʁ
4	kuβde	kuβde-sɲi	kuβdɾ-rʒaʁ
5	kumɲu	kumɲu-sɲi	kumɲɾ-rʒaʁ
6	kutʂɾɣ	kutʂɾ-sɲi	kutʂɾ-rʒaʁ
7	kuçnuwz	kuçnu-sɲi	kuçnɾ-rʒaʁ
8	kuɾcat	kuɾcɾ-sɲi	kuɾcɾ-rʒaʁ
9	kungut	kungu-sɲi	kungɾ-rʒaʁ
10	sqi	squ-sɲi	squɾ-rʒaʁ
11	sqaptuɣ	sqaptu-sɲi	
12	sqamnuwz	sqamnu-sɲi	
13	sqafsum	sqafsum-sɲi	
14	sqaβde	sqaβde-sɲi	
15	sqamɲu	sqamɲu-sɲi	
16	sqaprɾɣ	sqaprɾ-sɲi	
17	sqaçnuwz	sqaçnu-sɲi	
18	sqarcat	sqarcɾ-sɲi	
19	sqanguɣ	sqangu-sɲi	
20	ɣnɾsqi	ɣnɾsqu-sɲi	

In addition, **kɾntɕ^hu** ‘many, several’ (the participle of **antɕ^hu** ‘be many’) and the interrogative pronom **t^hɾstuwɣ** ‘how many’ have the prefixal forms **kɾntɕ^hu-** and **t^hɾstuw-** (as in **kɾntɕ^hu-xpa** ‘many years’ and **t^hɾstuw-turpa** ‘how many pounds’).

All classifiers in Japhug except **–rʒaʁ** ‘night’ follow the paradigm of **–sɲi** ‘day’. The classifier **–rʒaʁ** ‘night’ is the only one with irregular forms, and even **–rʒaʁ** can be used with the regular paradigm.

In Stau, only the numeral prefixes ‘one’ **e-** and ‘two’ **ɣnə-** have a special form, the rest is identical to the free numerals.

2.4 Other numerals

Numerals above one hundred present less morphological alternations than the units and tens.

There are two ways of expressing ‘one hundred’ in Japhug. First, the noun-like numeral **ɣurʒa** ‘one hundred’ can be employed as in 7.

- (7) **azo kuu-fse kuu-c^hu~c^ha zo ʒzʉnuu**
 1SG NMLZ:S/A-be.like NMLZ:S/A-EMPH~can EMPH young.man
yurza kurcat ra
 hundred eight need:FACT
 I need one hundred and eight able young men like me. (Slobdpon, 16)

The numeral **yurza** cannot be combined with unit numerals to express numbers between 200 and 900. The classifier **tu-ri** ‘one hundred’ is used for this purpose, as in 8 (see section 2.3 for an account of the numeral prefixes).

- (8) **χsu-ri jamar ndyre tu-nu ko, tu-tuphu nu**
 three-hundred about LNK exist:FACT-PL SFP one-hive DEM
 There are about three hundred of them, in one hive. (Bees, 48)

Numerals above the hundreds are all borrowed from Tibetan: **stonṭsu** ‘thousand’, **k^hruṭsu** ‘ten thousand’, **mbuṃχtṛ** ‘hundred thousand’ from **stṅ**, **k^hri** and **nbum.t^her** respectively. These numerals appear after the noun they qualify like **yurza** ‘hundred’.

2.5 Approximate Numerals

There are three strategies in Japhug to express an approximate number.

First, there is a restricted set of approximate numerals for numerals under ten (Table 3).

Table 3: Approximate numerals in Japhug

	Numeral	Numeral prefixes (with -sṅi ‘day’)
a few	laṅnuz	laṅnu-sṅi
2-3	laṅnuχsum	laṅnuχsu-sṅi
4-5	lχβdelχṅu	lχβdelχṅu-sṅi
5-6	lχṅtṣṅ	lχṅtṣṅ-sṅi
7-8	ṅṅcat	ṅṅcṅ-sṅi
9-10	kungusqi	kungusqu-sṅi

Second, it is possible to repeat the same classifier with a different numeral prefix, as in 9.

- (9) **kuβde-turpa kumju-turpa jamar ma tu-zyut**
 four-pound five-pound about apart.from IPFV-reach
mγ-cha
 NEG-can:FACT

It can only reach four or five pounds. (Hen, 14)

Third, for numerals above 99, it is possible to add a third person singular possessive prefix to express an approximate value, as in **u-yurza** ‘several hundreds’, **u-k^hruitsu** ‘several dozen of thousand’ etc.

3 Possible pathways of development for the numeral prefix paradigms in Rgyalrongic

There are three logical possibilities to account for the regularity of numeral/classifiers paradigms in Rgyalrongic.

First, it could be a conservative feature, namely the non-development of complex alternations due to the fact that Rgyalrong languages preserve final obstruents, unlike Pumi or Naish languages. Second, it could be due to the fact that the whole system of numeral prefixes was recently innovated. Third, the system itself could be cognate to the one found in Naish and Pumi, but have been renewed by analogy.

3.1 Archaism

Rgyalrong languages, and Japhug in particular, preserve final obstruents fairly well. This is obvious in the case of words borrowed from Tibetan (see Table 4) and also in the inherited vocabulary. The final stops **-b**, **-d**, **-g** or Old Tibetan correspond to Japhug **-β**, **-t**, **-γ** / **-ɣ** respectively: the dental stop is preserved as a stop, and the other stops appear as fricatives.

Table 4: Preservation of final obstruents in Tibetan loanwords in Japhug

Japhug	Tibetan	Meaning
rɣɿlk^hɣβ	rg^jal.k^hab	country
βdwt	bdud	demon
tuɣ	dug	poison
praɣ	brag	cliff
sɲaɣspa	sɲags.pa	sorcerer

In Burmo-Qiangic languages other than Rgyalrongic (except the Burmish branch), final stops are invariably lost. In the case of Naish loss of final obstruents had already happened at the proto-Naish stage (Jacques & Michaud 2011).

There is some evidence that the final stops in pre-proto-Naish left a trace in the patterning of tonal alternation in the numeral + classifier paradigms. As shown by Michaud (2011, 16-17), the comparison of the three Naish languages Na, Laze and Naxi reveals that numerals under 10 can be classified into several groups based on their tonal alternations. The numerals 3, 7, 9 and 10 have specific alternations, but 1, 2, 4, 5 and 6, 8 respectively always have the same tonal class. The group 6, 8 is particularly significant, as it is the only group of non-contiguous numerals, and both 6 and 8 have final obstruents in conservative languages (Tibetan **drug** and **brgjad**, for instance).

Thus, it can be hypothesized that (i) although final stops were lost, they were partially transphonologized as tonal contrasts and (ii) the development of the classifier system in Naish predates the loss of final stops.

This also suggests that languages that have not lost final stops, like Japhug, would be unlikely to have developed complex tonal or segmental alternations in their classifier system, since the transphonologization of obstruent codas did not occur. Japhug, in this view, would be conservative in preserving a regular system with little phonetic accident. Yet, such a hypothesis is untenable.

While Japhug does preserve final stops in isolation, these final stops are lost in classifier + numeral combinations, and always in the same way. If the Japhug paradigm were really conservative, the final stops of the numerals should combine in complex ways with the onset of the classifier. For instance, we know from comparison that the proto-Rgyalrong group ***pk** recently changed to Japhug **βγ** (as in **βγaza** ‘fly’ cognate with Situ **kəpos tsa**, see Jacques 2004, 272). This implies that classifiers with initial **p-** should *lautgesetzlich* have an allomorph **βγ** following numerals with a coda coming from ***-k** (ie ‘one’ and ‘six’). For instance, the classifier **-pɣrme** ‘year (of life)’ should have had the form ***τβγrme** from proto-Japhug ***tek-perme** instead of regular **tu-pɣrme** ‘one year (old)’ if the whole form had been inherited. The fact that not a single classifier presents any alternation of this type proves that the system as such cannot be archaic.

3.2 Innovation

An alternative possibility would be that the numeral + classifier systems found among Burmo-Qiangic languages are only superficially similar: it could be proposed that these paradigms are analogous rather than homologous, and result from independent parallel grammaticalizations.

In this hypothesis, it would not be surprising that Japhug and Stau have few irregular alternations: it might just imply that these systems are very young and have not yet had the time to develop irregular alternations.

Yet, there is evidence that the numeral + classifier systems in Rgyalrongic languages are actually cognate to the systems of at least some of other languages of the Burmo-Qiangic group, and thus have some degree of antiquity. The only type of evidence that can show that the classifier systems are not independently innovated is to find irregular or suppletive patterns in the paradigms common between Rgyalrongic and non-Rgyalrongic languages.

Although, as mentioned above, the numeral + classifiers paradigms in Rgyalrongic languages are very regular, there are nevertheless a few cases of suppletion found across Burmo-Qiangic, showing that the numeral + classifier paradigms are not mere parallel developments, but should be reconstructed back to an intermediate node of the group.

The first such evidence concern the numerals for ‘hundred’. We saw that in Japhug two roots are used to express ‘one hundred’, **ɣurza** and the classifier **-ri** ‘one hundred’. The former appears for numerals up to 199, while the second is used to express the hundreds from 200 to 900; for ‘one hundred’. This particularity is shared with other Burmo-Qiangic languages. Pumi has the noun-like **ɕí** ‘hundred’ and the classifier **-ɕej** (Daudey 2014, 101) with distributions very similar to the Japhug etyma. Moreover, note that the correspondences **-i** : **-a**⁵ and **-ej** : **-i** between Wadu Pumi and Japhug are widely attested (see examples in Table 5).

Hence, there is little doubt that the pair of roots for hundred in Japhug and Pumi are cognate. Since in both languages one of the members is a classifier, obligatorily taking a numeral prefix, it is unlikely that the classifier system of Pumi and Japhug were independently grammaticalized. Rather, it suggest that the two roots corresponding to Japhug **ɣurza** and **-ri** can both be reconstructed back to the common ancestor of Rgyalrong languages and Pumi, and that the ancestral form of **-ri** was already a classifier in the proto-language; hence, the classifier system was already in existence at that time.

⁵Exclusively before palatalized onsets; **-ə** : **-a** in other contexts.

Table 5: Correspondences between Japhug and Pumi

Japhug	Meaning	Pumi	Meaning
-sla	month	zǐ	month
χt̥suɪdza	butter tea (from Tibetan dkrug.dza)	dzǐ	tea (from Tibetan dza)
-pi	elder sibling	pěj	elder sibling
wxti	be big	tėj	be big

The second piece of evidence for the antiquity of the classifier system is the suppletion in the word for ‘year’ (about which see [Jacques & Michaud 2011](#) and ?). Naish and Qiangic languages (but not Lolo-Burmese) share a suppletion whereby a root with a labial onset is used in the year ordinals ‘last year, this year, next year’ (in Stau **-və**) and a root with a velar onset is used as a classifier (in Stau **-fku**), as illustrated in Table 6.⁶

Table 6: Suppletion in the forms of ‘year’ in Burmo-Qiangic.

Meaning	Tangut	Japhug	Stau	Pumi (Shuiluo)	Muya	Proto-Naish
Last year	𐄂𐄂𐄂 .ji².wji¹	japa	javə	zépə	jø³³za²⁴	*C-ba
This year	𐄂𐄂𐄂 pji¹.wji¹	ɣuɟpa	pəvə	pəpə	pə³³βə⁵³	*C-ba
Next year	𐄂𐄂𐄂 sjj¹.wji¹	fsaqhe	sevə	zəkhiú	sə³³βə⁵³	*C-ba
One year	𐄂𐄂𐄂 .a-kjiw¹	tuw-xpa	e-fku	tʃ-kó	tə⁵⁵-kui⁵³	*k ^h u
Two years	𐄂𐄂𐄂 nji¹-kjiw¹	ʁnuw-xpa	ɣnə-fku	ɲí-kó		*k ^h u

This implies that at the stage of the common ancestor of Naish and Qiangic, the root ancestral to Stau **-fku** was already a classifier and thus confirms the idea that the classifier system with numeral prefixes already existed.

These data show that for some subbranch of Burmo-Qiangic (but perhaps not at the Burmo-Qiangic level), a numeral + classifier paradigm has already been grammaticalized, and that the present systems have not been independently re-created, but are at least partially inherited from it.

3.3 Analogical levelling

The third possibility to explain the simplicity of the morphology of numeral + classifier paradigms in Rgyalrongic is that although their origin

⁶Rgyalrong languages, including Japhug, are an exception in that they have generalized the labial root to the ordinal too, but this must be a late common Rgyalrong innovation since the closely related Khroskyabs and Stau languages preserve the two roots.

goes back to the common ancestor of Naish, Pumi and Rgyalrongic, they have undergone several layers of analogical levelling which have erased irregular alternations.

The regular alternations between numerals and their prefixal forms, involving centralization of vowels ($-u \rightarrow -\gamma$, $-i \rightarrow -\mathbf{u}$) are similar to the *status constructus* alternations that apply to the first member of compounds in Japhug (see Jacques 2012b), as in Table 7. The loss of final consonants (including $-\gamma$, $-z$, $-t$, $-m$) found in the numeral prefixes is not generally observed in *status constructus* forms.

Table 7: Regular *status constructus* forms in Japhug.

First element	Second element	Compound
$-\mathbf{ku}$ ‘head’	$-\mathbf{rme}$ ‘(body) hair’	$\mathbf{k\gamma-rme}$ ‘(head) hair’
\mathbf{si} ‘tree, wood’	$-\mathbf{rtax}$ ‘branch’	$\mathbf{su-rtax}$ ‘tree branch’
$\mathbf{zru\gamma}$ ‘louse’	\mathbf{ndza} ‘eat’	$\mathbf{zru\gamma-ndza}$ ‘praying mantis’

However, a few examples of compounds whose first element loses its coda are attested, mainly, but not exclusively, where the second element has a complex cluster (Table 8). None of these alternations are productive.

Table 8: Loss of final consonants in *status constructus* forms in Japhug.

Coda	First element	Second element	Compound
$-\beta$	$\mathbf{nqia\beta}$ ‘dark side of the mountain’	$\mathbf{zw\gamma r}$ ‘mugwort’	$\mathbf{nqia-zw\gamma r}$ ‘Artemisia sp.’
$-t$	\mathbf{xtut} ‘be short’ $\mathbf{ts^h\gamma t}$ ‘goat’	$\mathbf{r\eta\eta i}$ ‘be long’ $-\mathbf{br\mathbf{u}}$ ‘horn’	$\mathbf{xtu-r\eta\eta i}$ ‘length (n)’ $\mathbf{ts^h\gamma-br\mathbf{u}}$ ‘goat horn’
$-z$	$\mathbf{qarts^haz}$ ‘deer’	$-\mathbf{ndzi}$ ‘skin’	$\mathbf{qarts^h\gamma-ndzi}$ ‘deer hide’
$-r$	$\mathbf{zw\gamma r}$ ‘mugwort’ $\mathbf{\text{ɕ}\gamma r}$ ‘night’	$\mathbf{w\gamma rum}$ ‘be white’ $-\mathbf{\chi\gamma l}$ ‘middle’	$\mathbf{zw\gamma-\gamma rum}$ ‘Artemisia sp.’ $\mathbf{\text{ɕ}\gamma-\chi\gamma l}$ ‘middle of the night’
$-\gamma$	$\mathbf{t\gamma jm\gamma\gamma}$ ‘mushroom’ $\mathbf{tu-mt^h\gamma\gamma}$ ‘waist’	$-\mathbf{sti}$ ‘alone’ $\mathbf{r\eta\eta\gamma\beta}$ ‘attach’	$\mathbf{jm\gamma-t\gamma sti}$ ‘species of mushroom’ $-\mathbf{mt^h\gamma-r\eta\eta\gamma\beta}$ ‘(tucking into one’s) trousers’
$-\mathbf{x}$	$\mathbf{\text{ɕ}\gamma\mathbf{x}}$ ‘buckwheat’ $\mathbf{pa\mathbf{x}}$ ‘pig’	$\mathbf{w\gamma rum}$ ‘be white’ $\mathbf{u-qa}$ ‘foot’	$\mathbf{\text{ɕ}\gamma-\gamma rum}$ ‘buckwheat sp.’ $\mathbf{p\mathbf{x}-qa}$ ‘stuffed pig feet’

The limited amount of phonological alternations observed in numeral prefixes can thus be treated as a particular case of *status constructus*, generalized to all classifiers, although it originally probably was restricted to classifiers with a particular type of onset (in particular those with complex

consonant clusters).⁷

The fact that some numerals have two competing prefixal forms (for instance **kumŋu-** vs **kumŋɣ-** for **kumŋu** ‘five’) shows that analogy is still synchronically at work in the system, and therefore that a massive generalization of one particular allomorph is probable to have occurred several times in the history of Japhug and other Rgyalrongic languages, on the basis of phonological alternations otherwise attested in the language.

4 Conclusion

The present paper contributes in two ways to the comparative linguistics of Burmo-Qiangic languages.

First, it provides detailed information on numerals and classifiers in Japhug, complementing the brief description in Jacques (2008, 185-194).

Second, it presents a model explaining how the numeral prefixal system found in Japhug came to be the way it is, and documents irregular cases of *status constructus* involving loss of final consonants.

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⁷Note however that not a single case of loss of **-m** could be found in Japhug compounds. Table 8 is almost completely exhaustive.

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