

THE VERBAL MORPHOLOGY OF KULUNG

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1. KULUNG AND ITS DIALECTS

Kulung (autonym *kulu riŋ*) is a Rāi language spoken by an estimated 7,000 people in about ten villages along the upper reaches of the Hoŋgu river (a tributary of the Dudhkoṣī in Solu Khumbu District of Sagarmāthā Zone in eastern Nepal. Rāi languages belong together with Limbu and Yakkha to the Kiranti branch of the Tibeto-Burman language group. Kiranti languages are characterised by an elaborate system of verbal endings, which is said to have been the result of a historical process that traditionally has been called 'complex pronominalising', that is the incorporation of personal pronouns in the verb system. Kiranti languages have been provisionally divided into Eastern Kiranti languages, that is languages spoken east of the Sālpā pass, and the rest (van Driem 1990). Limbu is classified as an Eastern Kiranti language and the majority of the Rāi languages, with the exception of Lohorung, Yakkha and Yamphu, belong to the rest. A more detailed picture of Kiranti phylogeny is suggested by Michailovsky's (1994) Kiranti sound laws. The closest relative of Kulung appears to be Khaling (Khālīn).

The main Kulung-speaking villages are Chemsīn and Cheskām. According to Kulung oral tradition the ancestor of the Kulung, *k^həp*, had two sons, *c^hemsi* and *tamsi*, who founded the settlements Chemsīn and Cheskām respectively. The language in those two villages is considered by the Kulung to be the most original form of the language. From there, the offspring of *c^hemsi* and *tamsi* are said to have gone downstream at both sides of the Hoŋgu river to the villages that are now called Lujām, Gudel, Cācālun, Nāmlun, Pelmān, Buñ, Chekmā, and Sātḍi.

The Kulung living in the village Sotān call their language *sottō riŋ* 'Sotān language', but consider themselves to be Kulung and easily understand the Kulung language spoken in Chemsīn and Cheskām. The dialect spoken in Sotān shows the result of historical phonological processes. For example the Kulung phoneme /u/, which has an allophone [ü] before the vowel /e/, was further fronted in the Sotān dialect to merge with the phoneme /i/, so that Kulung *tu-e* [tū-e] 'it is' has become *ti-e* in the Sotān dialect. Other processes include secondary vowel length as a result of consonant cluster reduction. As a dialect study will be part of my forthcoming *Grammar of Kulung*, I will provide only the above example. Further downstream in the village Hulu, people refer to themselves as Nachering, but their language may also be considered as a dialect of Kulung with further dialectal developments. It is interesting that the oral tradition of the migration of the Kulung people is supported by

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linguistic evidence. The present study is based on research conducted in the Kulung-speaking area in the summer of 1993 in the village Cheskām.¹

2. PHONOLOGY

The inventory of Kulung phonemes is given below. Vowel phonemes are described in terms of the distinctive features height, backness, rounding and length. A total of fourteen vowel phonemes are found.

Vowel phonemes

	front unrounded	central unrounded	back rounded
high-close	<i>i/i:</i>		<i>u/u:</i>
mid-close	<i>e/e:</i>	<i>ə/ə:</i>	
mid-open			<i>ɔ/ɔ:</i>
low-open	<i>a/a:</i>		

Kulung distinguishes six places of articulation of consonant phonemes: glottal, dorso-velar, palatal, dental, and bilabial. These are produced by seven manners of articulation.²

¹ The following abbreviations are used:

- | | |
|------|--|
| 1 | first person |
| 2 | second person |
| 3 | third person |
| → | indicates the direction of a transitive relationship |
| AG | agent of a transitive verb |
| DU | dual |
| EXC | exclusive |
| INC | inclusive |
| N1SG | non-first personal singular |
| NEG | negative |
| NPT | non-preterite |
| NSG | non-singular |
| PAT | patient of a transitive verb |
| PF | prefixal slot |
| PL | plural |
| PT | preterite |
| S | subject of an intransitive verb |
| SF | suffixal slot |
| SG | singular |
| Vi | intransitive verb |
| Vtr | transitive verb |
| Σ | verb stem |

² The phoneme symbols /c/ and /j/ represent the affricates [tʃ ~ tʃ] and [dʒ ~ dʒ] respectively.

Consonant phonemes

	bilabial	dental	palatal	dorso-velar	labial-velar	glottal
STOPS AND AFFRICATES						
voiceless unaspirated	<i>p</i>	<i>t</i>	<i>c</i>	<i>k</i>		ʔ
voiceless aspirated	<i>p^h</i>	<i>t^h</i>	<i>c^h</i>	<i>k^h</i>		
voiced unaspirated	<i>b</i>	<i>d</i>	<i>j</i>	<i>g</i>		
FRICATIVES						
voiceless grooved		<i>s</i>				
NASALS						
voiced	<i>m</i>	<i>n</i>		<i>ŋ</i>		
VIBRANTS						
voiced trill		<i>r</i>				
LATERAL APPROXIMANTS						
voiced		<i>l</i>				
CENTRAL APPROXIMANTS						
voiced		<i>y</i>			<i>w</i>	<i>h</i>

3. VERBAL MORPHOLOGY

An inflected verb form in Kulung consists of a verb stem to which affixes are attached, which express person and number agreement with one or two actants. According to the fixed pattern of paradigmatic verb stem alternation a number of different conjugation types can be identified. Up to now I have postulated four different conjugation types for both intransitive and transitive verbs. The number of verb stems found in each of the conjugation types varies from one to seven. The different verb stems do not have any meaning, but are the result of historical phonological processes. Personal pronouns may be added to verb forms for emphasis, but are not compulsory. Kulung distinguishes ten pronominal categories. Unlike most of the Kiranti languages, Kulung makes no formal distinction between a third person dual and plural. Instead it has a third person non-singular category. The personal pronouns are given below:

I	1SG	<i>kəŋ</i>
we	1DU.INC	<i>kas</i>
we	1DU.EXC	<i>kaska</i>
we	1PL.INC	<i>ke:</i>
we	1PL.EXC	<i>ke:ka</i>
you	2SG	<i>an</i>
you	2DU	<i>anci</i>
you	2PL	<i>anni</i>
s/he, it (here)	3SG	<i>ŋkə</i>
s/he, it (a little distant)	3SG	<i>na:kə</i>
s/he, it (distant)	3SG	<i>muŋkə</i>
s/he, it (down)	3SG	<i>nu:kə</i>
s/he, it (up)	3SG	<i>tə:kə</i>
they (here)	3NSG	<i>ŋkəs</i>
they (a little distant)	3NSG	<i>na:kəs</i>
they (distant)	3NSG	<i>muŋkəs</i>
they (down)	3NSG	<i>nu:kəs</i>
they (up)	3NSG	<i>tə:kəs</i>

The third person pronouns are demonstrative pronouns that have geography-dependent meaning. The pronouns *ŋkə* 's/he, it (here)' and *ŋkəs* 'they (here)' have proximal meaning, while the pronouns *na:kə* 's/he, it (a little distant)' and *na:kəs* 'they (a little distant)' have medio-distal meaning. The pronouns *muŋkə* 's/he, it (distant)' and *muŋkəs* 'they (distant)' have distal meaning. The pronouns *nu:kə* 's/he, it (down)' with the corresponding non-singular form *nu:kəs* 'they (down)' and *tə:kə* 's/he, it (up)' with the corresponding non-singular form *tə:kəs* 'they (up)' are elevation-dependent, meaning respectively 'at a lower altitude than the reference point' and 'at a higher altitude than the reference point'. Patients of transitive verbs and subjects of intransitive verbs appear in the absolutive case marked by \emptyset , and agents of transitive verbs occur in the ergative case marked -a. A fixed set of personal endings is found for the intransitive, transitive and reflexive paradigms in both preterite and non-preterite tenses. An overview of the affixes of the intransitive and transitive conjugation is given below.

3.1 INTRANSITIVE CONJUGATION

Below the personal affixes are given of the intransitive conjugation of the intransitive verb *imma* (stem *ims-* ~ *im-*) 'to sleep'. The verb has two different stems. The stem *im-* occurs in negative preterite forms, and the stem *ims-* appears elsewhere. The endings of the intransitive and transitive paradigms are also shown diagrammatically in Tables 1 and 2.

	NON-PRETERITE	PRETERITE
1SG	<i>ims-ɔ:</i> Σ_1 -1SG.NPT <i>ims-ɔ:-nɔ</i> Σ_1 -1SG.NPT-NEG.NPT	<i>ims-ɔ</i> Σ_1 -1SG.PAT.S.PT <i>maŋ-im-ŋa</i> NEG.PT- Σ_2 -1SG.NEG.PT
1DU.INC	<i>ims-ci</i> Σ_1 -DU <i>ims-ci-nɔ</i> Σ_1 -DU-NEG.NPT	<i>ims-a-ci</i> Σ_1 -PT-DU <i>maŋ-im-ci</i> NEG.PT- Σ_2 -DU
1DU.EXC	<i>ims-ci-ka</i> Σ_1 -DU-EXC <i>ims-ci-ka-nɔ</i> Σ_1 -DU-EXC-NEG.NPT	<i>ims-a-ci-ka</i> Σ_1 -PT-DU-EXC <i>maŋ-im-s-ka</i> NEG.PT- Σ_2 -DU-EXC
1PL.INC	<i>ims-ya</i> Σ_1 -1PL.PAT.S.NPT <i>ims-ya-nɔ</i> Σ_1 -1PL.PAT.S.NPT-NEG.NPT	<i>ims-i</i> Σ_1 -1PL.PAT.S.PT <i>maŋ-im-yi</i> NEG.PT- Σ_2 -1PL.PAT.S.PT
1PL.EXC	<i>ims-ya-ka</i> Σ_1 -1PL.PAT.S.NPT-EXC <i>ims-ya-ka-nɔ</i> Σ_1 -1PL.PAT.S.NPT-EXC-NEG.NPT	<i>ims-i-ka</i> Σ_1 -1PL.S.PT-EXC <i>maŋ-im-yi-ka</i> NEG.PT- Σ_2 -1PL.PAT.S.PT-EXC
2SG	<i>ims-e</i> Σ_1 -N1SG.PAT.S <i>ims-Ø-nɔ</i> Σ_1 -N1SG.PAT.S-NEG.NPT	<i>ims-a-Ø</i> Σ_1 -PT-N1SG.PAT.S <i>maŋ-im-na</i> NEG.PT- Σ_2 -2SG.PT
2DU	<i>ims-ci</i> Σ_1 -DU <i>ims-ci-nɔ</i> Σ_1 -DU-NEG.NPT	<i>ims-a-ci</i> Σ_1 -PT-DU <i>maŋ-im-ci</i> NEG.PT- Σ_2 -DU
2PL	<i>ims-ni</i> Σ_1 -2PL.PAT.S <i>ims-ni-nɔ</i> Σ_1 -2PL-NEG.NPT	<i>ims-a-nni</i> Σ_1 -PT-2PL <i>maŋ-im-ni</i> NEG.PT- Σ_2 -2PL
3	<i>ims-e</i> Σ_1 -N1SG.PAT.S <i>ims-Ø-nɔ</i> Σ_1 -N1SG.PAT.S-NEG.NPT	<i>ims-a-Ø</i> Σ_1 -PT-N1SG.PAT.S <i>maŋ-im-Ø</i> NEG.PT- Σ_2 -N1SG.PAT.S

TABLE 1: THE AFFIXES OF THE INTRANSITIVE CONJUGATION

	NPT	PT
1SG	$\Sigma_1\text{-}\mathfrak{c}$ $\Sigma_1\text{-}\mathfrak{c}\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}\mathfrak{c}$ $ma\eta\text{-}\Sigma_2\text{-}\eta a$
1DU.INC	$\Sigma_1\text{-}ci$ $\Sigma_1\text{-}ci\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}a\text{-}ci$ $ma\eta\text{-}\Sigma_2\text{-}ci$
1DU.EXC	$\Sigma_1\text{-}ci\text{-}ka$ $\Sigma_1\text{-}ci\text{-}ka\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}a\text{-}ci\text{-}ka$ $ma\eta\text{-}\Sigma_2\text{-}s\text{-}ka$
1PL.INC	$\Sigma_1\text{-}ya$ $\Sigma_1\text{-}ya\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}i$ $ma\eta\text{-}\Sigma_2\text{-}i$
1PL.EXC	$\Sigma_1\text{-}ya\text{-}ka$ $\Sigma_1\text{-}ya\text{-}ka\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}i\text{-}ka$ $ma\eta\text{-}\Sigma_2\text{-}i\text{-}ka$
2SG	$\Sigma_1\text{-}e$ $\Sigma_1\text{-}\emptyset\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}a\text{-}\emptyset$ $ma\eta\text{-}\Sigma_2\text{-}na$
2DU	$\Sigma_1\text{-}ci$ $\Sigma_1\text{-}ci\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}a\text{-}ci$ $ma\eta\text{-}\Sigma_2\text{-}ci$
2PL	$\Sigma_1\text{-}ni$ $\Sigma_1\text{-}ni\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}a\text{-}nni$ $ma\eta\text{-}\Sigma_2\text{-}ni$
3	$\Sigma_1\text{-}e$ $\Sigma_1\text{-}\emptyset\text{-n}\mathfrak{o}$	$\Sigma_1\text{-}a\text{-}\emptyset$ $ma\eta\text{-}\Sigma_2\text{-}\emptyset$

3.2 TRANSITIVE CONJUGATION

A full paradigm of the verb *kerma* ‘to hit’ is given below in both non-preterite and preterite tenses. The negative forms are listed below the corresponding affirmative forms.

	NON-PRETERITE	PRETERITE
1SG→2SG	<i>ker-yan</i> $\Sigma\text{-}1\text{SG}\rightarrow 2.\text{NPT}$ <i>ker-yan-n\mathfrak{o}</i> $\Sigma\text{-}1\text{SG}\rightarrow 2.\text{NPT-NEG.NPT}$	<i>ker-na</i> $\Sigma\text{-}2\text{SG.PT}$ <i>ma\eta\text{-}ker-na</i> $\text{NEG.PT-}\Sigma\text{-}2\text{SG.PT}$
1SG→2DU	<i>ker-yan-ci</i> $\Sigma\text{-}1\text{SG}\rightarrow 2.\text{NPT-DU}$ <i>ker-yan-ci-n\mathfrak{o}</i> $\Sigma\text{-}1\text{SG}\rightarrow 2.\text{NPT-DU-NEG.NPT}$	<i>ker-n-ci</i> $\Sigma\text{-}2\text{SG.PT-DU}$ <i>ma\eta\text{-}ker-n-ci</i> $\text{NEG.PT-}\Sigma\text{-}2\text{SG.PT-DU}$

1SG→2PL	<i>ker-yan-ni</i> Σ-1SG→2.NPT-2PL	<i>ker-Ø-ni</i> Σ-PT-2PL
	<i>ker-yan-ni-nɔ</i> Σ-1SG→2.NPT-2PL-NEG.NPT	<i>maŋ-ker-ni</i> NEG.PT-Σ-2PL
1NSG.3→2SG	<i>ker-e</i> Σ-N1SG.PAT.S	<i>ker-a-Ø</i> Σ-PT-N1SG.PAT.S
	<i>ker-Ø-nɔ</i> Σ-N1SG.PAT.S-NEG.NPT	<i>maŋ-ker-na</i> NEG.PT-Σ-2SG.PT
1NSG.3→2DU	<i>ker-ci</i> Σ-DU	<i>ker-a-ci</i> Σ-PT-DU
	<i>ker-ci-nɔ</i> Σ-DU-NEG.NPT	<i>maŋ-ker-ci</i> NEG.PT-Σ-2DU
1NSG.3→2PL	<i>ker-ni</i> Σ-2PL	<i>ker-a-nni</i> Σ-PT-2PL
	<i>ker-ni-nɔ</i> Σ-2PL-NEG.NPT	<i>maŋ-ker-ni</i> NEG.PT-Σ-2PL
1SG→3SG	<i>ker-ɔ:</i> Σ-1SG.NPT	<i>ker-Ø-u</i> Σ-PT-3PAT
	<i>ker-ɔ:-nɔ</i> Σ-1SG.NPT-NEG.NPT	<i>maŋ-ker-ŋa</i> NEG.PT-Σ-1SG.NEG.PT
1SG→3NSG	<i>ker-ɔ:-ci</i> Σ-1SG.NPT-3NSG	<i>ker-Ø-u-ci</i> Σ-PT-3PAT-3NSG
	<i>ker-ɔ:-ci-nɔ</i> Σ-1SG.NPT-3NSG-NEG.NPT	<i>maŋ-ker-ŋa</i> NEG.PT-Σ-1SG.NEG.PT
1DU.INC→3	<i>ker-c-u</i> Σ-DU-3PAT	<i>ker-a-c-u</i> Σ-PT-DU-3PAT
	<i>ker-c-u-nɔ</i> Σ-DU-3PAT-NEG.NPT	<i>maŋ-ker-ci</i> NEG.PT-Σ-DU
1DU.EXC→3	<i>ker-c-u-ka</i> Σ-DU-3PAT-EXC	<i>ker-a-c-u-ka</i> Σ-PT-DU-3PAT-EXC
	<i>ker-c-u-ka-nɔ</i> Σ-DU-3PAT-EXC-NEG.NPT	<i>maŋ-ker-s-ka</i> NEG.PT-Σ-DU-EXC
1PL.INC→3	<i>ker-am</i> Σ-1PL→3.NPT	<i>ker-Ø-u-m</i> Σ-PT-3PAT-PL.AG
	<i>ker-am-nɔ</i> Σ-1PL→3.NPT-NEG.NPT	<i>maŋ-ker-i</i> NEG.PT-1PL.PAT.S.PT
1PL.EXC→3	<i>ker-am-ka</i> Σ-1PL→3.NPT-EXC	<i>ker-Ø-u-m-ka</i> Σ-3PAT-PL.AG-EXC

	<i>ker-am-ka-no</i> Σ -1PL \rightarrow 3.NPT-EXC-NEG.NPT	<i>maŋ-ker-i-ka</i> NEG.PT- Σ -1PL.PAT.S.PT-EXC
2SG \rightarrow 3SG	<i>ker-ə</i> Σ -2SG.3 \rightarrow 3.NPT	<i>ker-Ø-u</i> Σ -PT-3PAT
	<i>ker-ə-no</i> Σ -2SG.3 \rightarrow 3.NPT-NEG.NPT	<i>maŋ-ker-na</i> NEG.PT- Σ -2SG.PT
2SG \rightarrow 3NSG	<i>ker-ə-ci</i> Σ -2SG.3 \rightarrow 3.NPT-3NSG	<i>ker-Ø-ci</i> Σ -PT-3NSG
	<i>ker-ə-s-no</i> Σ -2SG.3 \rightarrow 3.NPT-3NSG-NEG.NPT	<i>maŋ-ker-na</i> NEG.PT-2SG.PT
2DU \rightarrow 3	<i>ker-c-u</i> Σ -DU-3PAT	<i>ker-a-c-u</i> Σ -PT-DU-3PAT
	<i>ker-c-u-no</i> Σ -DU-3PAT-NEG.NPT-NEG.NPT	<i>maŋ-ker-n-ci</i> NEG.PT- Σ -2SG.PT-DU
2PL \rightarrow 3	<i>ker-n-u-m</i> Σ -2PLA-3PAT-PL.AG	<i>ker-a-n-u-m</i> Σ -PT-2PL.AG-3PAT-PL.AG
	<i>ker-n-u-m-no</i> Σ -2PL.AG-3PAT-PL.AG-NEG.NPT	<i>maŋ-ker-ni</i> NEG.PT- Σ -2PL
3SG \rightarrow 3SG	<i>ker-ə</i> Σ -2SG.3 \rightarrow 3.NPT	<i>ker-Ø-u</i> Σ -PT-3PAT
	<i>ker-ə-no</i> Σ -2SG.3 \rightarrow 3.NPT-NEG.NPT	<i>maŋ-ker</i> NEG.PT- Σ
(3 \rightarrow 3) ^{NSG}	<i>ker-ə-ci</i> Σ -2SG.3 \rightarrow 3.NPT-3NSG	<i>ker-Ø-ci</i> Σ -PT-3NSG
	<i>ker-ə-s-no</i> Σ -2SG.3 \rightarrow 3.NPT-3NSG-NEG.NPT	<i>maŋ-ker-ci</i> NEG.PT- Σ -3NSG
2SG.3 \rightarrow 1SG	<i>ker-ɔ:</i> Σ -1SG.NPT	<i>ker-ɔ</i> Σ -1SG.PAT.S.PT
	<i>ker-ɔ:-no</i> Σ -1SG.NPT-NEG.NPT	<i>maŋ-ker-ŋa</i> NEG.PT- Σ -1SG.NEG.PT
2DU \rightarrow 1SG	<i>ker-ɔ:-ci</i> Σ -1SG.NPT-DU	<i>ker-Ø-ɔ-ci</i> Σ -PT-1SG.PAT.S.PT-DU
	<i>ker-ɔ:-ci-no</i> Σ -1SG.PAT.S-NEG.NPT	<i>maŋ-ker-ŋa-ci</i> NEG.PT- Σ -1SG.NEG.PT-DU
2PL \rightarrow 1SG	<i>ker-ɔ:-ni</i> Σ -1SG.NPT-2PL	<i>ker-ɔ-ni</i> Σ -1SG.PAT.S.PT-2PL
	<i>ker-ɔ:-ni-no</i> Σ -1SG.NPT-2PL-NEG.NPT	<i>maŋ-ker-ŋa-ni</i> NEG.PT- Σ -1SG.NEG.PT-2PL

3→1DU.INC	<i>ker-ci</i>	<i>ker-a-ci</i>
	Σ-DU	Σ-PT-DU
	<i>ker-ci-no</i>	<i>maŋ-ker-ci</i>
	Σ-DU-NEG.NPT	NEG.PT-Σ-DU
2.3→1DU.EXC	<i>ker-ci-ka</i>	<i>ker-a-ci-ka</i>
	Σ-DU-EXC	Σ-PT-DU-EXC
	<i>ker-ci-ka-no</i>	<i>maŋ-ker-s-ka</i>
	Σ-DU-EXC-NEG.NPT	NEG.PT-Σ-DU-EXC
3→1PL.INC	<i>ker-ya</i>	<i>ker-i</i>
	Σ-1PL.PAT.S.NPT	Σ-1PL.PAT.S.PT
	<i>ker-ya-no</i>	<i>maŋ-ker-i</i>
	Σ-1PL.PAT.S.NPT-NEG.NPT	NEG.PT-Σ-1PL.PAT.S.PT
2.3→1PL.EXC	<i>ker-ya-ka</i>	<i>ker-i-ka</i>
	Σ-1PL.PAT.S.NPT	Σ-1PL.PAT.S.PT-EXC
	<i>ker-ya-ka-no</i>	<i>maŋ-ker-i-ka</i>
	Σ-1PL.PAT.S.NPT-NEG.NPT	NEG.PT-Σ-1PL.PAT.S.PT-EXC

3.3 MORPHEMIC ANALYSIS OF VERBAL AFFIXES

To account for the Kulung conjugational endings, one prefixal and seven suffixal slots must be posited.

(1) Prefixal slot

(i) Negative preterite morpheme in prefixal slot PF1

man- ~ *mam-* ~ *maŋ-* NEG.PT

The preterite negative prefix *man-* ~ *mam-* ~ *maŋ-* indexes negation and preterite tense in all persons, for example *maŋ-ker-na* (NEG.PT-hit-2SG.PT) 'I didn't hit you'. This morpheme has the following allomorphic distribution:

/man-/ → [mam-]/— { bilabial stops and bilabial nasal: [b-, p-, p^h-, m-]

/man-/ → [maŋ-]/— { vowel [V-]
glottal central approximant [h-]
dorso-velar stops [g-, k-, k^h-]
dorso-velar nasal [ŋ-]
labial-velar central approximant [w-]

Note that verb stems beginning with a vowel are always automatically preceded by a subphonemic hiatus glottal stop.

TABLE 2: THE AFFIXES OF THE TRANSITIVE CONJUGATION

	1SG	1DU.INC	1DU.EXC	1PL.INC	1PL.EXC	2SG	2DU	2PL	3SG	3NSG
	p a t i e n t									
1SG						Σ -yan Σ -na	Σ -yan-ci Σ -n-ci	Σ -yan-ni Σ -Ø-ni	Σ -o: Σ -Ø-u	Σ -o:-ci Σ -Ø-u-ci
1DU.INC	a								Σ -c-u Σ -a-c-u	
1DU.EXC	g					Σ -e Σ -a-Ø	Σ -ci Σ -a-ci	Σ -ni Σ -a-nni	Σ -c-u-ka Σ -a-c-u-ka	
1PL.INC	e								Σ -am Σ -Ø-u-m	
1PL.EXC	n					Σ -e Σ -a-Ø	Σ -ci Σ -a-ci	Σ -ni Σ -a-nni	Σ -am-ka Σ -Ø-u-m-ka	
2SG	Σ -o: Σ -Ø-o								Σ -o Σ -Ø-u	Σ -o:-ci Σ -Ø-ci
2DU	Σ -o:-ci Σ -Ø-o-ci								Σ -c-u Σ -a-c-u	
2PL	Σ -o:-ni Σ -Ø-o-ni								Σ -n-u-m Σ -a-n-u-m	
3SG	Σ -o: Σ -Ø-o			Σ -ya Σ -i	Σ -ya-ka Σ -i-ka	Σ -e Σ -a-Ø	Σ -ci Σ -a-ci	Σ -ni Σ -a-nni	Σ -o Σ -Ø-u	Σ -o:-ci Σ -Ø-ci

(2) Suffixal slots

The suffixes assigned to the suffixal slots, diagrammed in Table 3, are explained and illustrated by examples taken from the transitive paradigm of the verb *kerma* 'to hit'.

(i) Tense morphemes in suffixal slot SF1

$a \sim \emptyset$ PT

The tense marker $-a \sim \emptyset$ (PT) occurs in the affirmative forms of the preterite tense, for example *ker-a-c-u-ka* (hit-PT-DU-3PL-EXC) 'we.DU.EXC hit him'. It has a regular zero allomorph \emptyset before a vocalic affix, that is *vocalis ante vocalem corripitur*, and a paradigmatically conditioned zero allomorph \emptyset in the transitive forms 1SG→2PL, 2SG→3NSG and (3→3)^{NSG}. The corresponding non-preterite forms of these forms, however, are marked for non-preterite tense by a portmanteau morpheme.

TABLE 3: SUFFIXAL SLOTS AND SLOT FILLERS

SF1	SF2	SF3	SF4	SF5	SF6	SF7
	-ɔ:					
	1SG.NPT					
	-ɔ					
	1SG.PAT.S.PT					
	-ŋa					
	1SG.NEG.PT					
	-ya		-u	-ci ~ -s		
	1PL.PAT.S.NPT		3PAT	3NSG		
$a \sim \emptyset$	-i ~ -yi	-ci ~ -c ~ -s	-ə	-m	-ka	-nɔ
PT	1PL.PAT.S.PT	DU	2SG.3→3.NPT	PL.AG	EXC	NEG.NPT
	-e ~ \emptyset		-am	-ni ~ -nni		
	N1SG.PAT.S		1PL→3.NPT	2PL		
	-na ~ -nna ~ -n					
	2SG.PT					
	-yan					
	1SG→2.NPT					
	-n					
	2PL.AG					

(ii) Person morphemes in suffixal slot SF2

Suffixal slot SF2 is defined by the relative position of *-ɔ:* (1SG.NPT), *-ŋa* (1SG.NEG.PT), *-yan* (1SG→2.NPT) and *-na ~ -nna ~ -n* (2SG.PT) in the suffixal string, because they follow the preterite tense marker *-a ~ Ø*, but precede the dual morpheme *-ci ~ -c ~ -s*. Of the remaining morphemes in the suffixal slot the following can be said: the tensed first person plural patient/subject morphemes, *-ya* (non-preterite) and *-i ~ -yi* (preterite), precede the exclusive morpheme *-ka* in suffixal slot SF6. The non-first person *-e ~ Ø* precedes the third person non-singular morpheme *-ci ~ -s* (3NSG) in suffixal slot SF5 and the second person plural agent suffix *-n* occupies a position anterior to the third person patient morpheme *-u* in suffixal slot SF4. On the basis of the semantic common denominator of person agreement, these suffixes have been assigned to this slot.

<i>-ɔ:</i>	1SG.NPT
<i>-ɔ</i>	1SG.PAT.S.PT
<i>-ŋa</i>	1SG.NEG.PT
<i>-ya</i>	1PL.PAT.S.NPT
<i>-i ~ -yi</i>	1PL.PAT.S.PT
<i>-e ~ Ø</i>	N1SG.PAT.S
<i>-na ~ -nna ~ -n</i>	2SG.PT
<i>-yan</i>	1SG→2.NPT
<i>-n</i>	2PL.AG

The first person singular non-preterite actant morpheme *-ɔ:* indexes a first singular actant in the non-preterite tense, for example *ker-ɔ:-ci-nɔ* (hit-1SG.NPT-DU-NEG.NPT) 'you^{DU} don't hit me'.

The first singular preterite patient/subject morpheme *-ɔ* indexes a first singular subject or patient morpheme in the preterite tense, for example *ker-ɔ* (hit-1SG.PAT.S.PT) 'you^{SG} hit me'.

The first negative preterite singular morpheme *-ŋa* occurs in negative preterite forms with a first singular actant, for example *maŋ-ker-ŋa-ci* (NEG.PT-hit-1SG.NEG.PT-DU) 'you^{DU} didn't hit me'.

The non-preterite first plural patient/subject morpheme *-ya* indexes a first plural patient or subject in the non-preterite tense, for example *ker-ya-ka* (hit-1PL.PAT.S.NPT-EXC) 'you, s/he, they hit us^{PAT.EXC}'.

The preterite first plural patient/subject morpheme *-i ~ -yi* indexes a first plural patient or subject in the preterite tense, for example *ker-i* (hit-1PL.PAT.S.PT) 's/he (they) hit us'. This suffix has an allomorph *-yi* after stems ending in a vowel or nasal.

The non-first person singular patient/subject morpheme *-e ~ Ø* indexes a non-first singular patient or subject, for example *ker-e* (hit-N1SG.PAT.S) 'we hit you'. This suffix occurs only in intransitive forms with a non-first person singular subject and in 1DU.EXC→2SG, 1PL.EXC→2SG and 3→2SG forms; that is, it does not occur in forms in which involvement of non-first singular patient or subject is indicated by another morpheme, viz. in preterite 1SG→2SG forms where the second person singular is indexed by the morpheme *-na* (2SG.PT). Moreover, the suffix *-e* is epenthetic and elides to *Ø* before the

non-preterite negative suffix *-nɔ*, the conditional suffix *-dɔ* and the reported speech suffix *-tʰe*. The non-first person singular patient/subject morpheme *-e ~ Ø* also has a zero allomorph *Ø* after the preterite marker *-a* as well as before the vocalic suffixes *-ɔ* (1SG.NPT), *-ə* (2SG.3→3.NPT) and the third person patient morpheme *-u*. Furthermore, this morpheme has a paradigmatically conditioned zero allomorph *Ø* in the third person negative preterite subject.

The second person singular morpheme *-na ~ -nna ~ -n* indexes a second singular actant in the preterite tense, for example *ker-na* (hit-2SG.PT) 'I hit you'. The suffix has an allomorph *-nna* after stems ending in a vowel and an allomorph *-n* when followed by the dual suffix *-ci*.

The 1SG→2 portmanteau morpheme *-yan* indexes the transitive relationship between a first singular agent and a second person patient in the non-preterite tense, for example *ker-yan-ci* (hit-1SG→2.NPT-DU) 'I hit you^{DU}'.

The second person plural agent morpheme *-n* (2PL.AG) indexes a second plural agent in 2PL→3 forms, with the exception of the negative preterite 2PL→3 form, for example *ker-a-n-u-m* (hit-PT-2PL.AG-3PAT-PL.AG) 'I hit you^{PL}'.

(iii) The dual morpheme in suffixal slot SF3

Suffixal slot SF3 is defined by the relative position of the dual morpheme *-ci ~ -c ~ -s* in the suffixal string; that is, the suffix in this slot may follow the person morphemes in suffixal slot SF2, but precedes the third person patient marker *-u* in suffixal slot SF4.

The dual morpheme *-ci ~ -c ~ -s* indexes dual actant number, for example *ker-c-u* (hit-DU-3PL) 'we^{DU.INC} hit him'. This suffix has an allomorph *-c* when followed by the third person patient suffix *-u* and the paradigmatically conditioned allomorph *-s* in any negative preterite first person dual exclusive form.

(iv) Third person patient morphemes in suffixal slot SF4

This slot contains the third person patient marker *-u* and portmanteau morphemes indexing a third person patient. Suffixal slot SF4 is defined by the relative position of the third person patient marker *-u* in the suffixal string. On the basis of positional criteria alone, however, the three portmanteaus could be assigned to any slot following the tense slot SF1, but preceding the third person non-singular morpheme *-ci ~ -s* in suffixal slot SF5. The three portmanteaus are assigned to suffixal slot SF4, therefore, solely on the basis of formal and semantic criteria.

<i>-u</i>	3PAT
<i>-ə</i>	2SG.3→3.NPT
<i>-am</i>	1PL→3.NPT

The third person patient morpheme *-u* indexes a third person patient, for example *ker-Ø-u* (hit-PT-3PAT) 'I hit him'.

The 2SG.3→3 portmanteau morpheme *-ə* (2SG.3→3.NPT) indexes a transitive relationship between a second person singular or third person agent and a third person

patient in the non-preterite tense, for example *ker-ə-ci* (hit-2SG.3→3.NPT-NSG) 'you hit them'.

The 1PL→3.NPT portmanteau morpheme *-am* indexes a transitive relationship between a first person plural agent and a third person patient in the non-preterite tense, for example *ker-am-no* (hit-1PL→3.NPT-NEG.NPT) 'we^{PL.INC} don't hit him (them)'.

(v) Number morphemes in suffixal slot SF5

Suffixal slot SF5 is defined by the relative position of the plural agent morpheme *-m* in the suffixal string, because this morpheme precedes the exclusive morpheme *-ka* in suffixal slot SF6, but follows the third person patient marker *-u* in suffixal slot SF4. Of the remaining morphemes in the suffixal slot the following can be said: the third person non-singular morpheme *-ci* and the second plural actant morpheme *-ni ~ -nni* follow the third person patient morpheme *-u* in suffixal slot SF4 and the first singular non-preterite actant morpheme *-ɔ:* in suffixal slot SF2 respectively, and precede the negative non-preterite morpheme *-no* in suffixal slot SF6.

<i>-ci</i>	3NSG
<i>-m</i>	PL.AG
<i>-ni ~ -nni</i>	2PL

The third person non-singular morpheme *-ci ~ -s* indexes non-singular number of a third person actant, for example *ker-ɔ:-ci* (hit-1SG.NPT-3NSG) 'I hit them'. This morpheme has the allomorph *-s* in the negative non-preterite 2SG→3NSG and (3→3)^{NSG} forms.

The plural agent morpheme *-m* indexes plural number of a first or second person agent, for example *ker-n-u-m* (hit-2PL.AG-3PAT-PL.AG) 'you^{PL} hit him'.

The second person plural morpheme *-ni ~ -nni* indexes a second person plural actant in intransitive forms and in 1→2PL, 2PL→1SG and 1NSG.3→2PL forms, for example *ker-ni* (hit-2PL) 'I hit you^{PL}'. The allomorph *-nni* occurs after the tense marker *-a* and after stems ending in a vowel.

(vi) The exclusive morpheme in suffixal slot SF6

Suffixal slot SF6 is only occupied by the morpheme *-ka*. The morpheme follows the plural agent morpheme *-m* in suffixal slot SF5 and precedes the negative non-preterite morpheme *-no* in suffixal slot SF7.

<i>-ka</i>	EXC
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The exclusive morpheme *-ka* indexes exclusive actant except in 1→2 forms, for example *ker-ci-ka* (hit-DU-EXC) 'you didn't hit us^{PL.EXC}'. The Kulung paradigm does not distinguish the various 1NSG→2 forms from the corresponding 3→2 forms.

(vii) The negative non-preterite morpheme in suffixal slot SF7

The last suffixal slot is occupied by the negative non-preterite morpheme *-no* (NEG.NPT).

<i>-no</i>	NEG.NPT
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The non-preterite negative morpheme *-no* (NEG.NPT) indexes negation in the non-preterite tense, for example *ker-ɔ:-no* (hit-1SG.NPT-NEG.NPT) 'he doesn't hit me'.

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