Concerning this version of my talk to be uploaded on the StuTS website:

- The background picture is free of rights.
- During the talk, my slides mainly consisted of illustrations, upon which I commented orally. Since such slides would not be of much use without the accompanying comments, I have tried to restitute as much of what I said as I can remember in here.
- This work is in progress and in no way must anything from the few last slides regarding class-by-class root reconstruction be taken at face value. What I am mainly concerned with here is presenting the data and raise questions.
- The actual talk delivered on 05-25-19 at 15:30 was vastly more entertaining than reading this will ever be, due to several factors comprising (but not limited to) paranormal events striking the wall clock.

Verb allomorphy in Kulung : internal reconstruction and comparison

Jean-Baptiste Lamontre

INALCO (National Institute for Eastern – i.e. basically everywhere on Earth except Western Europe – Languages and Civilisations)

The so-called Sino-Tibetan family

Source : Grierson,
Linguistic Survey of India
(1903-1927)
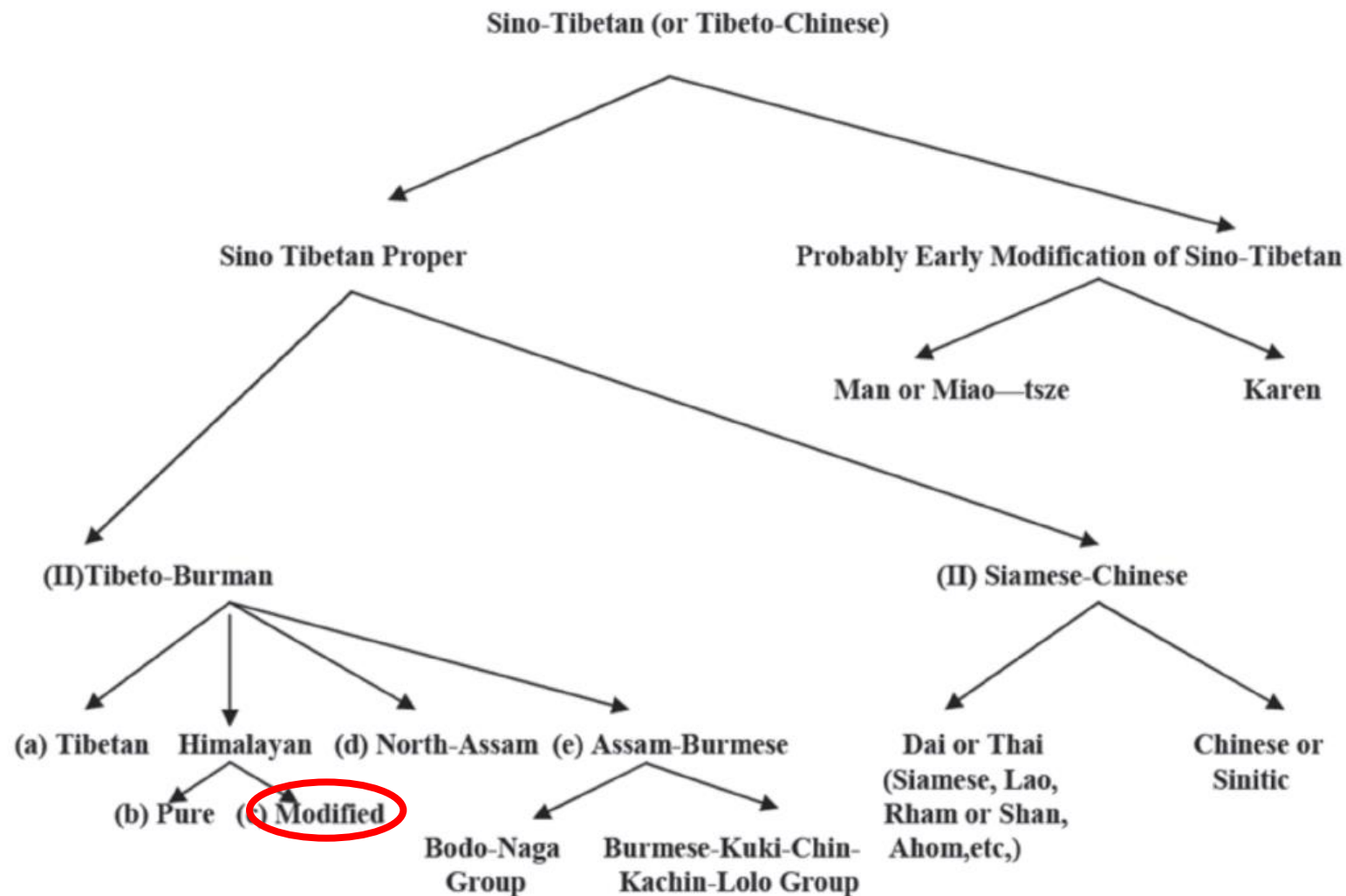
An early version of the ST Stammbaum.
Kiranti, the family Kulung belongs to, was then subsumed under 'modified Himalayan', due to 19th century evolutionist preconceptions, according to which complexity could only develop out of simplicity (the so-called 'pure', i.e. non-inflecting Himalayan languages, being posited as simpler than the heavily inflectional Kiranti languages).

Trans-Himalayan: the 'fallen leaves' model

West Himalayish · Tshangla · Rgyalrongic · Bái · Sinitic · Tamangic · Bodish · Lepcha · Qiāngic · Tŭjiā · Newaric · Lhokpu · Ěrsūish · Lolo-Burmese · **Kiranti** · Magaric · Digarish · Nàic · Kachinic · Dura · Chepangic · Raji-Raute · Midźuish · Nungish · Kukish · Siangic · Tani · Black Mountain · Ao · Angami-Pochuri · Karenic · Kho-Bwa · Zeme · Karbí · Meithei · Pyu · Hrusish · Dhimalish · Gongduk · Brahmaputran · Mru · Tangkhul

Source: Van Driem (*passim*)

In recent years, leading scholars in the Sino-Tibetan field have proposed to discard the Stammbaum altogether and to postulate no deeper relationships than this rather careful (others would say noncommittal) 'fallen leaves' model, in which the setting-up of intermediate subgroups is simply left out for future research.

Moreover, since the designation 'Sino-Tibetan' fails to account either for the internal phylogeny of the family or for its geographical extension, a less controversial term such as 'Trans-Himalayan' has been proposed by Delancey to adress those issues.

Verb stem allomorphy in the Kiranti languages: retention or innovation ?

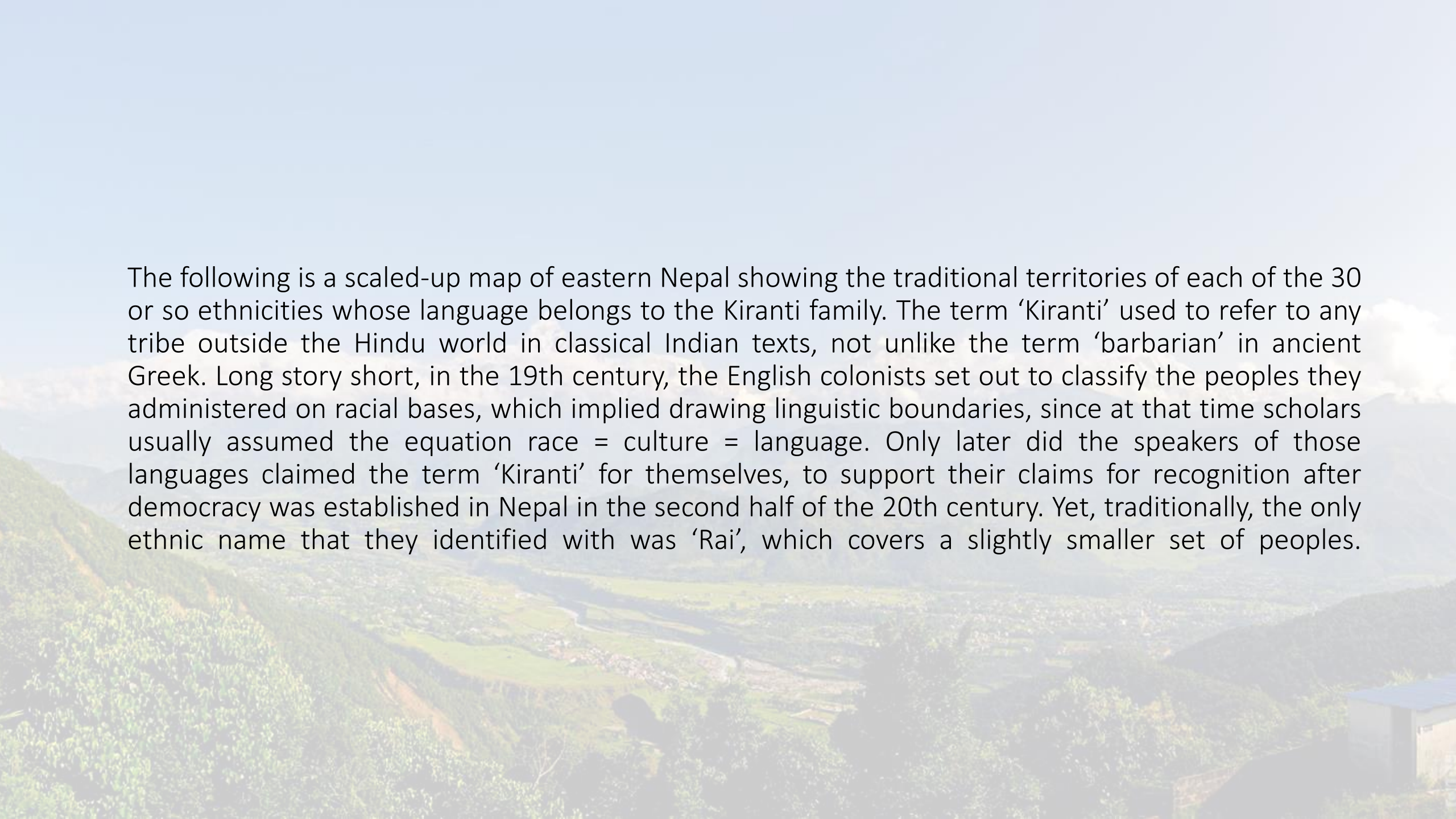Exact correspondences link Kiranti and Old Tibetan (a Bodish language):

'to eat' : PRES ཟ། *za* :: PST ཟོས། *zos* ≠ expected བཟས། *bzas* (actually attested later)

This a/o vowel alternation between present and past has no other example in Tibetan.

Kulung : 'to eat' cama vt-7 [1: coi- 2: co- 3: cəi- 4: cə- 5: cai- 6: ca-]

Verb stem allomorphy dates back to proto-Himalayish, possibly proto-Trans-Himalayan.

The reason why Kiranti languages are the focus of much research, beyond mere typological interest (there are many other languages even crazier than that) or preservation (there are hundreds of languages which are more critically endangered than Kiranti, and whose description in an emergency), is because they (together with rGyalrong languages) hold some of the keys to the distant past of Trans-Himalayan languages, most of which do not display any more inflection.
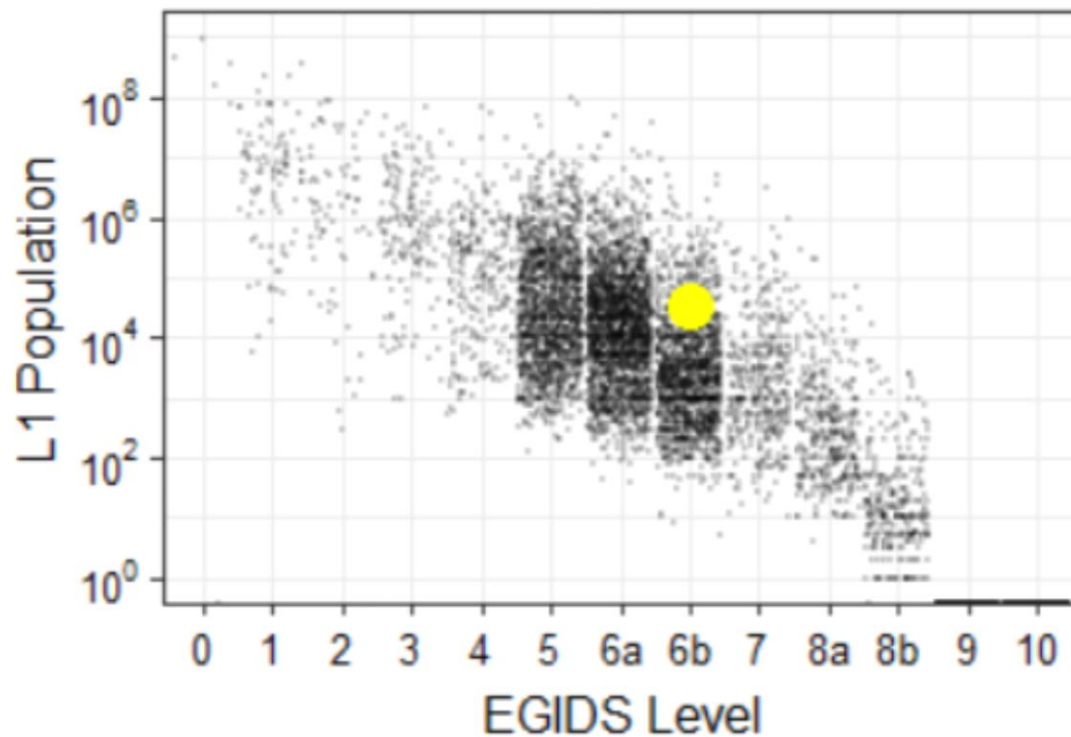
The following is a scaled-up map of eastern Nepal showing the traditional territories of each of the 30 or so ethnicities whose language belongs to the Kiranti family. The term 'Kiranti' used to refer to any tribe outside the Hindu world in classical Indian texts, not unlike the term 'barbarian' in ancient Greek. Long story short, in the 19th century, the English colonists set out to classify the peoples they administered on racial bases, which implied drawing linguistic boundaries, since at that time scholars usually assumed the equation race = culture = language. Only later did the speakers of those languages claimed the term 'Kiranti' for themselves, to support their claims for recognition after democracy was established in Nepal in the second half of the 20th century. Yet, traditionally, the only ethnic name that they identified with was 'Rai', which covers a slightly smaller set of peoples.

Sociolinguistic profile of Kulung

Around 15,000 speakers according to Tolsma 2006.

Expanded Graded Intergenerational Disruption Scale

Kulung in the Language Cloud

The EGIDS level for this language in its primary country is 6b (Threatened) — The language is used for face-to-face communication within all generations, but it is losing users.

Source : ethnologue.com

Objectives of the study and available data

- Find as many cognate verbs as possible in Kulung's sister languages.
- Figure out phonetic correspondences between the different languages.
- Identify all verb classes in Kulung (i.e. verbs that conjugate in the same way).
- Reconstruct a hypothetical verb root for each class, on the basis of both internal (i.e. Kulung alone) and external (i.e. Kiranti) data.

Work tools:
- Thorough grammatical descriptions of Kulung and some of its sister languages (I use data from Wambule, Khaling, Bantawa and Limbu), comprising conjugation tables, short texts and lexicons.
- A translation of the Bible in Kulung, with sound recordings.

Internal reconstruction vs. comparison

Internal reconstruction: INTERNAL DATA

Lat. **nik-s** (<nix> 'snow' N.sg) :: **niw-is** (<nivis>, id. G.sg) :: **ni-n-g^w-it** (<ninguit> 'it snows')

If the three allomorphs developped out of a single one, what might it have been?

The changes ***g^w > k / _C** and ***g^w > w / V_V** are the most natural and economical.

We then reconstruct **PRE**-Latin |nig^w-|.

Comparative Method: EXTERNAL DATA

Gr. *ἡ νίφας, νίφω* < ***-g^{wh}-** because *g^w regularly yields **b before a vowel other than /e/.

Elsewhere in Indoeuropean:

snow, Schnee, sneg, snih, sneachd etc. all point to PIE ***sneyg^{wh}-** (**PROTO**-Indoeuropean).

Digression/disclaimer: it is not completely off-topic to make it clear that we don't mean in any way that *sneyg^{wh} is exactly how IE people called snow 5 millenia BP. Whether these reconstructed forms are real forms of a real prehistorical language that was spoken by real human beings is the least of our concerns. They only symbolize a web of regular correspondences between languages, they are nothing more than algebraic formulas, from which the forms actually attested in the daughter languages may be derived through theoretically exceptionless sound laws (*Ausnahmslosigkeit der Lautgesetze*). But we are not making this up out of thin air: this reasoning meets the criteria for scientificity, since it is both **predictive** (it can predict what the word for 'snow' is in an IE language provided you know the sound laws operating in the historical development of that language) and **falsifiable** (since the predictions can be disproved by evidence).

Kulung verb template

Prefix	Verb stem	1st suffix	2nd suffix	3rd suffix	4th suffix

<-a>	PT
<-o:>	1s.NPT
<-o>	1s.PT
<-ŋa>	1s.NEG.PT
<-ya>	1p.NPT
<-(y)i>	1p.PT
<-am>	1p > 3.NPT
<-um>	1p > 3.PT
<-(n)n(a)>	2s.PT
<-yan>	1s > 2.NPT
<-u>	1s > 3.PT
<-ə>	3P.NPT
<-u>	3P.PT

<-e>	n1s
<-cu>	d > 3
<-num>	2p > 3
<-ci / -s>	d
<-ni>	2p
<-ci / -s>	3ns

<-man>	NEG.PT

<-ka>	exc

<-no>	NEG.NPT

$$\Sigma$$
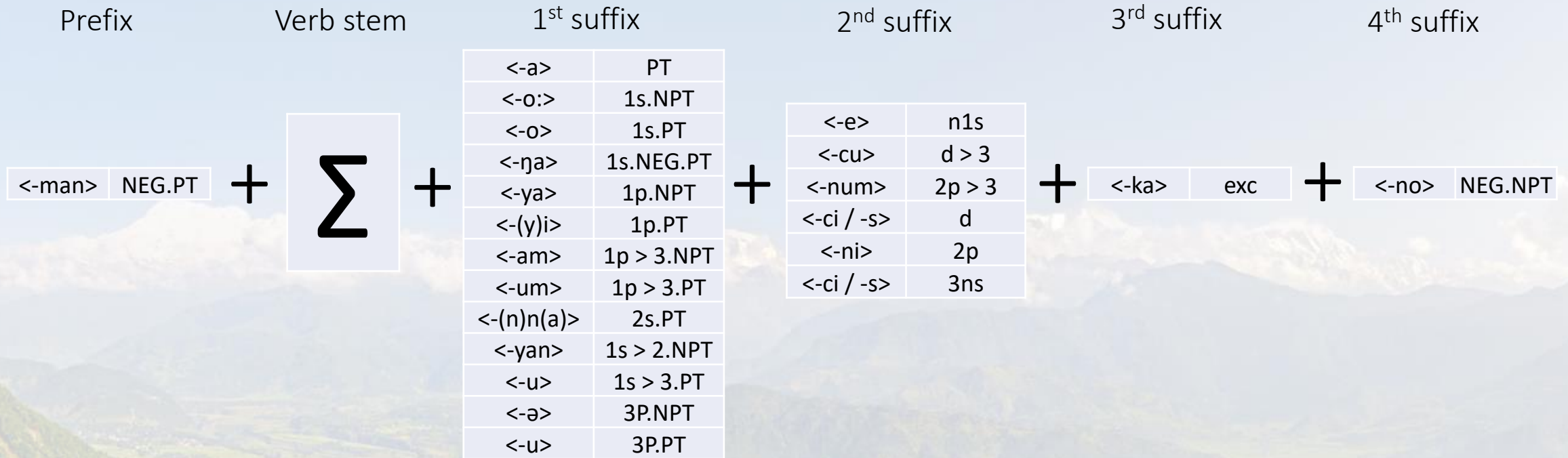
- Verb inflection displays features typical of both:
  - **agglutinative** (affixes are stringed one after the other with little phonetic alteration)
  - **and fusional** languages (there is no one-to-one relationship between the set of morphological categories, viz. person, number, clusivity, tense and polarity, and the set of morphemes that instantiate said categories).
- Apart from a number of impersonal forms which will not be dealt with here, verbs possess **4 finite subparadigms**: affirmative and negative non-preterite (hereafter **NPT+** and **NPT-**), and affirmative and negative preterite (**PT+** and **PT-**).

The following is the conjugation table for transitive verbs. Since Kulung verbs agree with both agent and patient, their finite subparadigms are bidimensional. In each box, the first line gives the NPT+ form, and the second line the PT+. The negative subparadigms are not given here (nor are they in Tolsma's grammar).

The affixes given here apply to all verb classes. What distinguishes verb classes from one another is the stem (Σ) alternation pattern, examples of which follow.

TABLE 2: THE AFFIXES OF THE TRANSITIVE CONJUGATION

patient (across top) / agent (down left side)

	1SG	1DU.INC	1DU.EXC	1PL.INC	1PL.EXC	2SG	2DU	2PL	3SG	3NSG
1SG						Σ-yan / Σ-na	Σ-yan-ci / Σ-n-ci	Σ-yan-ni / Σ-Ø-ni	Σ-ɔː / Σ-Ø-u	Σ-ɔː-ci / Σ-Ø-u-ci
1DU.INC									Σ-c-u / Σ-a-c-u	
1DU.EXC						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									Σ-am / Σ-Ø-u-m	
1PL.EXC						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-ɔː / Σ-Ø-ɔ								Σ-ə / Σ-Ø-u	Σ-ə-ci / Σ-Ø-ci
2DU	Σ-ɔː-ci / Σ-Ø-ɔ-ci								Σ-c-u / Σ-a-c-u	
2PL	Σ-ɔː-ni / Σ-Ø-ɔ-ni		Σ-ci-ka / Σ-a-ci-ka		Σ-ya-ka / Σ-i-ka				Σ-n-u-m / Σ-a-n-u-m	
3SG	Σ-ɔː / Σ-Ø-ɔ	Σ-ci / Σ-a-ci		Σ-ya / Σ-i		Σ-e / Σ-a-Ø	Σ-ci / Σ-a-ci	Σ-ni / Σ-a-nni	Σ-ə / Σ-Ø-u	
3NSG										Σ-ə-ci / Σ-Ø-ci

Stem allomorphy in intransitive verbs

	NPT+			PT+			NPT-		PT-			
	1s	1ns/2ns	2s/3	1s	1ns/2ns	2s/3	1s	non-1s	1s/1p/3	1di	1de	2
	o:	ci/ya/ni	e	o	a/i	a	o:	ci/ya/n-	ŋa/i/#	ci	s	ci/n-
vi-1	Σ1											
vi-2	Σ1								Σ2			
vi-3	Σ1								Σ2			Σ3
vi-4	Σ1								Σ2	Σ3		Σ2
vi-5	Σ1		Σ3	Σ1		Σ3	Σ1		Σ2	Σ4	Σ5	Σ4
vi-6	Σ1	Σ3		Σ2	Σ4		Σ1	Σ3	Σ4			

Transitive paradigms

This is the alternation pattern of the most complicated transitive class, class vt-8.

A short example

TO-MA, vt-8 [1: toi- 2: to- 3: təi- 4: tə- 5: tui- 6: tu- 7: ta- 8: tok-] 'to see'

How would you say 'he saw us two' in Kulung? Simply cross the information from the preceding charts.

PT+ ; 3 > 1di   → Σ7 + -a-ci

→ *ta-aci* (presumably shortened to *taci*)

Side note: 'they saw us two' would translate exactly in the same way. Therefore, a highly complex inflection system such as this one, with fine-grained distinctions such as inclusive/exclusive or dual/plural, does not imply that the language operates all the distinction that we would consider to be the most basic ones, such as the number of the agent. Actually, there is a tendency in Kulung for the morphosyntactic distinctions to be finer-grained regarding the patient than regarding the agent, which is of course what can be expected of an ergative language.

Chart 1 (NPT+) — stem alternation numbers

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s					1		2	3		
1di										
1de		NPT+						4		
1pi										
1pe										
2s								6		
2d								7		
2p	5									
3s			4							
3ns								6		

Chart 2 (PT+)

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s					1		2			
1di										
1de		PT+		3				6		
1pi										
1pe				3						
2s								7	8	
2d								6		
2p	4		3		5					
3s						3	7			
3ns					9			8		

Chart 3 (NPT-)

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s							1	2		
1di										
1de		NPT-					3	4		
1pi										
1pe					3					
2s								6		
2d								7		
2p	5		3		3					
3s		4		4						
3ns								6		

Chart 4 (PT-)

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s							1		3	9
1di										
1de		PT-					2		6	10
1pi									3	9
1pe							2			
2s									7	
2d									1	11
2p	3		5		3					
3s		4					1		8	12
3ns										

Chart 5 (NPT+) — verbal endings

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s						yan			o:	
1di									cu	
1de		NPT+		e	ci	ni				
1pi									am	
1pe				e	ci	ni				
2s								ə		
2d								cu		
2p	o:		ci		ya			num		
3s								ə		
3ns					e	ci	ni			

Chart 6 (PT+)

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s						n-			u	
1di										
1de		PT+				a				
1pi									um	
1pe						a				
2s								u	ci	
2d								a		
2p	o		a		i					
3s						a		u		
3ns									ci	

Chart 7 (NPT-)

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s						yan			o:	
1di									cu	
1de		NPT-		no	ci	ni				
1pi									am	
1pe				e	ci	ni				
2s								ə		
2d								cu		
2p	o:		ci		ya			num		
3s								ə		
3ns					e	ci	ni			

Chart 8 (PT-)

	1s	1di	1de	1pi	1pe	2s	2d	2p	3s	3ns
1s								n	ŋa	
1di									ci	
1de		PT-				na	ci	ni	s	
1pi									i	
1pe						na	ci	ni		
2s										
2d								n		
2p	ŋa		s		i					
3s		ci				na	ci	ni	#	
3ns									ci	

This is a (not so easily readable) excerpt from my Excel drafts. The four charts on the first row sum up the stem alternations of all transitive classes: slots belonging to the same numbered area always use the same stem. The charts on the second row give the first syllable or the first letter of the verbal ending (as a reminder, all the verbs use the same endings). What I tried to do here, by showing that the two geometrical distributions do not coincide, is making sure that there is no correlation between the form of the stem and that of the first suffix appended to it: **stem alternation is NOT phonologically conditioned** in synchrony (even though it may have been so originally).

The following two slides are, again, raw screenshots from my drafts. Here I list all verb subclasses in the language (first, in intransitive verbs, from vi-1 to vi-6, then in transitive verbs, from vt-1 to vt-8). Classes are defined according to how stems alternate in a paradigm, and within each class, subclasses are distinguished according to the rhymes (i.e. syllable nucleus + coda) of the alternating stems.

I then try to assign to each and every verb subclass a unique reconstructed root that labels it unambiguously. The reconstructions that I have not been able yet to disambiguate are highlighted in color. The rightmost column in each table provides data from sister languages, namely Bantawa, Khaling, Wambule and Limbu. Taking those external data into account greatly helps substantiate the reconstructed forms, which would otherwise be little more than mere abstractions.

It is important to note that, as long as those reconstructed roots are not actual words belonging to the active system of the language, they do not have to comply with the rather rigid phonotactics of Kulung (which, in particular, would not tolerate final consonant clusters).

C stands for 'any consonant', V for 'any vowel', :: for 'cognate with', [X|Y] for 'X or Y', (X|Y) for 'X or Y or zero'.

Internal reconstruction of pre-Kulung verb roots

	NPT+			PT+			NPT-		PT-					Racine reconstruite	Remarques	Cognats
	1s	1ns/2ns	2s/3	1s	1ns/2ns	2s/3	1s	non-1s	1s/1p/3	1di	1de	2				
vi-1	C[a|ə|u]i												4	C[a|ə|u]i		:: |CVt|
	CV[l|m|r]												35	CV[l|m|r]		:: |CV[l|m|r](t)|
vi-2	CV(l|m|r)s						CV(l|m|r)						4	CV(l|m|r)s		:: |CV(l|m|r)s|
	C[u|i]:						C[u|i]						8	C[u|i]:		:: |CV|
	Cei						Ce						3	Cei		
	CVk						CV:						12	CVk	V = [e|i|o|u]	:: |CVkt|
	CVks												11	CVks	V = [a|i|o|u]	:: |CV[k|ŋ](t|s)|
	CVn												4	CVn	V = [e|i]	?
	CVŋ												10	CVŋ	V ≠ ə	:: |CVŋ(t)|
	Cəŋ						Co:						2	Cəŋ		:: |Coŋ(t)|
	CVp(p|s)						CVm						10	CVp(p|s)		CVpp :: |CVpt| ?
vi-3	CVn								CVi			CVn	3	CVn	V = [a|ə]	:: |CVn(t)|
	CVt												15	CVt	V = [a|ə|e|i]	:: |CV(n)t|
vi-4	C[i|o]k						C[i|o]:		C[i|o]k		C[i|o]:		3	C[i|o]k		:: |CVk|
	Cək						Co:		Cok		Co:		2	Cək		:: |C[o|u]k(t)|
vi-5	CVt	CVtt	CVt		CVtt	CVt	CVt	CVi	CVn	CV:		CVn	9	CVtt	V = [a|ə|e|u]	:: |CVn|
	CVi	CViy	CVi		CViy	CVi							1	CViy	V = a	:: |CVt|
vi-6	Coi	C[a|ə]i		Co	C[a|ə]		Coi	C[a|ə]i	C[a|ə]				7	C[a|ə]i		:: |CV| ou |CVr|
													143			

									#	Form	Condition	Pattern
vt-1	Cal								1	Cal		:: |CV[l|r](t)|
	CVr								10	CVr	V ≠ ə	
vt-2	CVks	CV:							25	CVks	V ≠ ə	:: |CV[k|ŋ](t|s)|
	CVk	CV:							11	CVk	V = [e|i|u]	:: |CVk(t|s)|
	CVn	CVi							2	CVn	V = [e|i]	:: |CVn(t)|
	CVps	CVm							22	CVps	V = [a|ə|e|u]	:: |CV[p|m](t|s)|
	CVrs	CVr							6	CVrs	V = [ə|e|i|u]	:: |CVr|
	CVs	CV							10	CVs	V = [a|ə|e|i]	:: |CVs|
vt-3	Cək	Co:	Cok						6	Cək		:: |CVok(t)|
	Cok								5	Cok		:: |CVak(t)|
vt-4	CVl	CVll	CVl						22	CVl	V ≠ o	:: |CVl|
	CVm	CVmm	CVm						8	CVm	V = [a|e|i|u]	:: |CVm(t|s)|
	CVn	CVnn	Cvi						3	CVn	V = [a|e]	:: |CVnt|
	CVŋ	CVŋŋ	CV:						16	CVŋ	V = [a|i|o|u]	:: |CVŋ(t|s)|
	Cəŋ	Cəŋŋ	Co:						1	Cəŋ		?
	CVp	CVpp	CVm						59	CVp	V ≠ o	:: |CVp(t)|
	CVs	CVss	CV						5	CVss	V = [i|u]	:: |CV(t)|
	Cəi	Cəiy	Cəi						2	Cəi		?
	Ci:	Ciy	Ci						11	Ci:		:: |CVtt|
vt-5	CVi	CViy	CVi	CVn	CV:				13	CVi	V = [a|ə|u]	
	CVt	CVtt							40	CVtt	V = [a|ə|e|u]	:: |CV(n)t|
vt-6	Cui	Cu	Cəi	Cə					2	Cui		:: |CV|
vt-7	Coi	Co	Cəi	Cə	Cai	Ca			1	√coi- (irrég.)	cama 'manger'	< *dza
vt-8	Coi	Co	Cəi	Cə	Cui	Cu	Ca	Cok	10	Coi		:: |CVkt|
									292			

Avenues for further research

- The description of verb allomorphy in terms of numbered stems is completely predictive, but opaque and cumbersome. There has to exist a simpler set of rules in the speakers' minds: rules mapping from the underlying reconstructed roots to the alternating surface stems.
- Alternating rhymes consist of a vowel and a final consonant; there has to be one set of rules accounting for the vowel, and another one accounting for the consonant.
- Comparative and typological data point to an underlying 5-vowel system (a, e, i, o, u). Schwa is indeed nowhere to be seen in Kulung except as a variant of /o/.

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