Disentangling morphomic splits in Limbu

ISMo 2023

Berthold CRYSMANN Baptiste LOREAU UNGER

LLF (CNRS & U Paris Cité) ENS Paris–Saclay

13 Sept 2023

Introduction

- Limbu (van Driem 1987)
  - Kiranti (Sino-Tibetan) family
  - Eastern Nepal
  - 180,000 speakers
- Verbal conjugation: polypersonal marking
  - Person and number of both subject and object
  - Tense (non-preterite/preterite)
  - Polarity (affirmative/negative)
- Person and number receive separate marking, for both arguments

  kɛ-nuːŋ-si
  2-return-DU
  'You two return.'
- Inflectional marking is largely transparent: "Limbu verb agreement is elaborate but efficient . . . [and] succinct" (van Driem 1987)

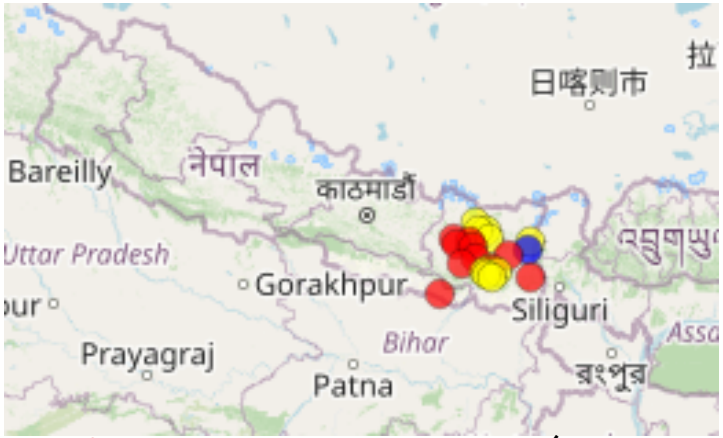


Figure 1: From Glottolog (code `kira1253`)

↓ A \ P →	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
	>1			>1I		>2			>3		
1> 1SG 1DE 1PE 1DI 1PI						1>2			1>3		
2> 2SG 2DU 2PL	2>1								2>3		
3> 3SG 3DU 3PL	3>1					3>2			3>3		
S →	1			1I		2			3		

Limbu conjugation: noncanonical exponence

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n-i-ŋ	-u-ŋ | -ʔɛ / -paŋ	-u -ŋ -si -ŋ | -ʔɛ -n / -pa ŋ -chi -n / -si -ŋ	→
1DE						←	-nɛ-tchi -ge	→	-s-u -ge	-s-u -si -ge	→
1PE						↙	↓	↘	-u -m -be / -mʔna	-u -m -si -m -be / -mʔna -si	→
1DI									a- -s-u	a- -s-u -si	→
1PI									a- -u -m	a- -u -m -si -m	→
2SG	kɛ- -ʔɛ / kɛ- -aŋ	↑	↗						kɛ- -u	kɛ- -u -si	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u -si	→
2PL	↙	↓	↘						kɛ- -u -m	kɛ- -u -m -si -m	→
3SG	-ʔɛ / -aŋ	-si -ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u -si	→
3DU	↑	↑	↑	↑	↑	↑	↑	↑	-s -u	-s -u -si	→
3PL	mɛ- -ʔɛ / mɛ- -aŋ	mɛ- -si -ge	mɛ- -i -ge	a- m- -si	a- m-	kɛ- m-	kɛ- m- -si	kɛ- m- -i	mɛ- -u	mɛ- -u -si	→
S →	-ʔɛ / -aŋ | -paŋ, -aŋ	-si -ge	-i -ge / -mʔna	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	-si	mɛ-

Table 1: Limbu verbal agreement. Arrows show syncretic cells. Subdivisions indicate tense/polarity allomorphy: NPRET above, PRET below; AFF right, NEG left.

Limbu conjugation: noncanonical exponence

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n-i-ŋ	-u-ŋ | -ʔɛ / -paŋ	-u -ŋ -si -ŋ | -ʔɛ -n / -pa ŋ -chi -n / -si -ŋ	→
1DE						←	-nɛ-tchi -ge	→	-s-u -ge	-s-u -si -ge	→
1PE						↙	↓	↘	-u -m -be / -mʔna	-u -m -si -m -be / -mʔna -si	→
1DI									a- -s-u	a- -s-u -si	→
1PI									a- -u -m	a- -u -m -si -m	→
2SG	kɛ- -ʔɛ / kɛ- -aŋ	↑	↗						kɛ- -u	kɛ- -u -si	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u -si	→
2PL	↙	↓	↘						kɛ- -u -m	kɛ- -u -m -si -m	→
3SG	-ʔɛ / -aŋ	-si -ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u -si	→
3DU	↑	↑	↑	↑	↑	↑	↑	↑	-s -u	-s -u -si	→
3PL	mɛ- -ʔɛ / mɛ- -aŋ	mɛ- -si -ge	mɛ- -i -ge	a- m- -si	a- m-	kɛ- m-	kɛ- m- -si	kɛ- m- -i	mɛ- -u	mɛ- -u -si	→
S →	-ʔɛ / -aŋ | -paŋ, -aŋ	-si -ge	-i -ge / -mʔna	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	-si	mɛ-

Table 1: Limbu verbal agreement. Arrows show syncretic cells. Subdivisions indicate tense/polarity allomorphy: NPRET above, PRET below; AFF right, NEG left.

- Portmanteau *-mʔna* and participant-marking competitors *-ge*, *-i* and *-u-m*

Limbu conjugation: noncanonical exponence

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n-i-ŋ	-u-ŋ | -ʔɛ / -paŋ	-u -ŋ -si -ŋ | -ʔɛ -n -chi -n / -pa ŋ -si -ŋ	→
1DE						←	-nɛ-tchi -ge	→	-s-u -ge	-s-u -si -ge	→
1PE						↙	↓	↘	-u -m -be / -mʔna	-u -m -si -m -be / -mʔna -si	→
1DI									a- -s-u	a- -s-u -si	→
1PI									a- -u -m	a- -u -m -si -m	→
2SG	kɛ- -ʔɛ / kɛ- -aŋ	↑	↗						kɛ- -u	kɛ- -u -si	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u -si	→
2PL	↙	↓	↘						kɛ- -u -m	kɛ- -u -m -si -m	→
3SG	-ʔɛ / -aŋ	-si -ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u -si	→
3DU	↑	↑	↑	↑	↑	↑	↑	↑	-s -u	-s -u -si	→
3PL	mɛ- -ʔɛ / mɛ- -aŋ	mɛ- -si -ge	mɛ- -i -ge	a- m- -si	a- m-	kɛ- m-	kɛ- m- -si	kɛ- m- -i	mɛ- -u	mɛ- -u -si	→
S →	-ʔɛ / -aŋ | -paŋ, -aŋ	-si -ge	-i -ge / -mʔna	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	-si	mɛ-

Table 1: Limbu verbal agreement. Arrows show syncretic cells. Subdivisions indicate tense/polarity allomorphy: NPRET above, PRET below; AFF right, NEG left.

- Portmanteau *-mʔna* and participant-marking competitors *-ge*, *-i* and *-u-m*
- Complementary distribution of *-si* and *mɛ-* in NSG numbers

Limbu conjugation: noncanonical exponence

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n-i-ŋ	-u-ŋ | -ʔɛ / -paŋ	-u -ŋ -si -ŋ | -ʔɛ -n / -pa ŋ -chi -n / -si -ŋ	→
1DE						←	-nɛ-tchi -ge	→	-s-u -ge	-s-u -si -ge	→
1PE						↙	↓	↘	-u -m -be / -mʔna	-u -m -si -m -be / -mʔna -si	→
1DI									a- -s-u	a- -s-u -si	→
1PI									a- -u -m	a- -u -m -si -m	→
2SG	kɛ- -ʔɛ / kɛ- -aŋ	↑	↗						kɛ- -u	kɛ- -u -si	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u -si	→
2PL	↙	↓	↘						kɛ- -u -m	kɛ- -u -m -si -m	→
3SG	-ʔɛ / -aŋ	-si -ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u -si	→
3DU	↑	↑	↑	↑	↑	↑	↑	↑	-s -u	-s -u -si	→
3PL	mɛ- -ʔɛ / mɛ- -aŋ	mɛ- -si -ge	mɛ- -i -ge	a- m- -si	a- m-	kɛ- m-	kɛ- m- -si	kɛ- m- -i	mɛ- -u	mɛ- -u -si	→
S →	-ʔɛ / -aŋ | -paŋ, -aŋ	-si -ge	-i -ge / -mʔna	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	-si	mɛ-

Table 1: Limbu verbal agreement. Arrows show syncretic cells. Subdivisions indicate tense/polarity allomorphy: NPRET above, PRET below; AFF right, NEG left.

- Portmanteau *-mʔna* and participant-marking competitors *-ge*, *-i* and *-u-m*
- Complementary distribution of *-si* and *mɛ-* in NSG numbers
- Heavy number neutralizations

Limbu conjugation: noncanonical exponence

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n-i-ŋ	-u-ŋ | -ʔɛ / -paŋ	-u -ŋ -si -ŋ | -ʔɛ -n -chi -n / -pa ŋ -si -ŋ	→
1DE						←	-nɛ-tchi -ge	→	-s-u -ge	-s-u -si -ge	→
1PE						↙	↓	↘	-u -m -be / -mʔna	-u -m -si -m -be / -mʔna -si	→
1DI									a- -s-u	a- -s-u -si	→
1PI									a- -u -m	a- -u -m -si -m	→
2SG	kɛ- -ʔɛ / kɛ- -aŋ	↑	↗						kɛ- -u	kɛ- -u -si	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u -si	→
2PL	↙	↓	↘						kɛ- -u -m	kɛ- -u -m -si -m	→
3SG	-ʔɛ / -aŋ	-si -ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u -si	→
3DU	↑	↑	↑	↑	↑	↑	↑	↑	-s -u	-s -u -si	→
3PL	mɛ- -ʔɛ / mɛ- -aŋ	mɛ- -si -ge	mɛ- -i -ge	a- m- -si	a- m-	kɛ- m-	kɛ- m- -si	kɛ- m- -i	mɛ- -u	mɛ- -u -si	→
S →	-ʔɛ / -aŋ | -paŋ, -aŋ	-si -ge	-i -ge / -mʔna	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	-si	mɛ-

Table 1: Limbu verbal agreement. Arrows show syncretic cells. Subdivisions indicate tense/polarity allomorphy: NPRET above, PRET below; AFF right, NEG left.

- Portmanteau *-mʔna* and participant-marking competitors *-ge*, *-i* and *-u-m*
- Complementary distribution of *-si* and *mɛ-* in NSG numbers
- Heavy number neutralizations
- Multiple exponence

Types of noncanonical exponence in Limbu

Morphomic splits and competition

- *-mʔna* vs. *-ge*, *-i* & *-u-m*
- *mɛ-* vs. *-si*

Full number neutralization (Baerman, Brown & Corbett 2005)

a-kɛ-huʔ

1P-2A-teach

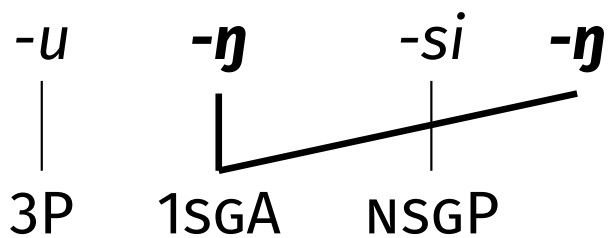
'You teach us', 'You all teach me', etc.

Multiple exponence (Harris 2017)

huʔr-u **-ŋ** -si **-ŋ**

teach-3P-1SG-NSGP-1SG

'I teach them.'



Types of syncretic splits

- **Syncretism:** when several cells in a paradigm have the same form
- Types (Corbett 2015, Bonami 2015):
  - Natural: balanced, parallel zones
  - Pāṇinian: completely nested zones (Elsewhere Condition; Kiparsky 1985)
  - Morphomic: “haphazard” zones
- **What is in between?**

	SINGULAR	PLURAL
NOM	Oma	Omas
GEN	Oma	Omas
DAT	Oma	Omas
ACC	Oma	Omas

Table 2: Natural split
(Crysmann 2021b)

	SINGULAR	PLURAL
NOM	Wagen	Wagen
GEN	Wagens	Wagen
DAT	Wagen	Wagen
ACC	Wagen	Wagen

Table 3: Pāṇinian split

	SG	PL
I	v	b
II	y	d
III	y	y
V	d	d
VI	b	d

Table 4: Morphomic: Batsbi gender (Harris 2009)

An intermediate kind of split

- Within exponence of plural number

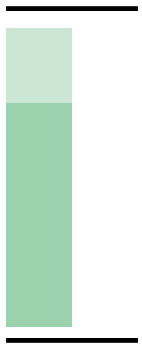
Role →	A>3SG	S
1PE.PRET	**-mʔna**	**-mʔna**
1PE.NPRET	-u-m-be	-i-ge
2PL.PRET	kɛ- -u-m	kɛ- -i
2PL.NPRET	kɛ- -u-m	kɛ- -i

Table 5: First plural exclusive split

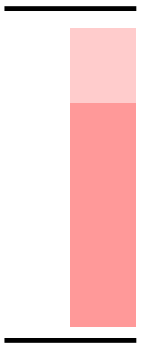
	–	+
α	**A**	**A**
β	B	C
γ	B	C

Table 6: A general pseudo-Pāṇinian split

- *-u-m* (A>3 role) is general:



- *-i* (S role) is general:



- *-mʔna* (1PE.NOM.PRET) is specific, but not *embedded* within either green or red: this is what we call “pseudo-Pāṇini”

Pseudo-Pāṇinian split: the problem

Role →	A>3SG	S
1PE.PRET	**-mʔna**	**-mʔna**
1PE.NPRET	-u-m-be	-i-ge
2PL.PRET	kɛ- -u-m	kɛ- -i
2PL.NPRET	kɛ- -u-m	kɛ- -i

Table 7: First plural exclusive split

Unusual syncretism:

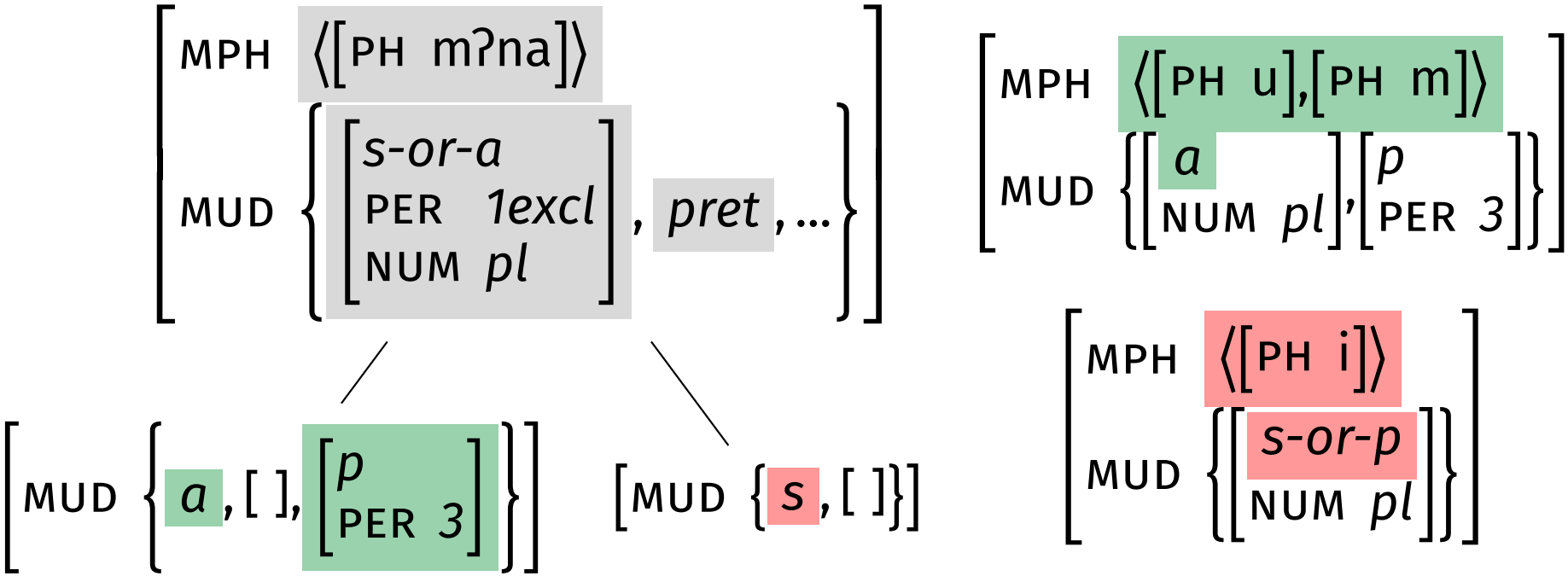
- π (pi) shape
- *-mʔna* is **too wide** to override either *-u-m* or *-i* (no proper inclusion)...
- Put differently, *-mʔna* not more specific than either:

$$\left[\begin{array}{l}\textsc{mph}\ \langle[\textsc{ph}\ \text{mʔna}]\rangle \\ \textsc{mud}\ \left\{\left[\begin{array}{l}\textit{s-or-a} \\ \textsc{per}\ \textit{1excl} \\ \textsc{num}\ \textit{pl}\end{array}\right], \textit{pret}, \ldots\right\}\end{array}\right] \left[\begin{array}{l}\textsc{mph}\ \langle[\textsc{ph}\ \text{u}],[\textsc{ph}\ \text{m}]\rangle \\ \textsc{mud}\ \left\{\left[\begin{array}{l}\textit{a} \\ \textsc{num}\ \textit{pl}\end{array}\right],\left[\begin{array}{l}\textit{p} \\ \textsc{per}\ \textit{3}\end{array}\right]\right\}\end{array}\right] \left[\begin{array}{l}\textsc{mph}\ \langle[\textsc{ph}\ \text{i}]\rangle \\ \textsc{mud}\ \left\{\left[\begin{array}{l}\textit{s-or-p} \\ \textsc{num}\ \textit{pl}\end{array}\right]\right\}\end{array}\right]$$

- Yet number-person-tense portmanteau: **too narrow** "not to be an override"!
- **Take-away:** looks too similar to Pāṇini not to try using a competition device

Pseudo-Pāṇinian split: IbM analysis

- Solution: abstract out the common properties into a supertype and detail specific subtypes for the overrides



- The supertype expresses generalizations
- The subtypes express specific properties, and take care of the actual distribution (competing with other markers)
- This is simply a **special case of a Pāṇinian split,** with generalizations about overrides

Another morphomic split: data

Role & interactant	A>1,2	A>3	S	P
DU	mɛ-	-si	-si	-si
PL	mɛ-	mɛ-	mɛ-	-si

Table 8: Marking of non-singular third persons

- Interlocking L shapes: neither seems more specific
- At first blush, reminiscent of divergent bidirectional syncretism (Stump 2001)
- Expand empirical basis to discern a more economical analysis

Carving out the distribution of *-si*

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n -i -ŋ	-u-ŋ	-u-ŋ **-si** -ŋ	→
1DE						←	-nɛ-tchi-ge	→	-s-u-ge	-s-u **-si** -ge	→
1PE						↙	↓	↘	-u-m-be	-u-m **-si** -m-be	→
1DI									a- -s-u	a- -s-u **-si**	→
1PI									a- -u-m	a- -u-m **-si** -m	→
2SG	kɛ- -ʔɛ	↑	↗						kɛ- -u	kɛ- -u **-si**	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u **-si**	→
2PL	↙	↓	↘						kɛ- -u-m	kɛ- -u-m **-si** -m	→
3SG	-ʔɛ	-si-ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u **-si**	→
3DU	**↑**	**↑**	**↑**	**↑**	**↑**	**↑**	**↑**	**↑**	**-s** -u	**-s** -u **-si**	→
3PL	**mɛ-** -ʔɛ	**mɛ-** -si-ge	**mɛ-** -i -ge	a- **m-** -si	a- **m-**	kɛ- **m-**	kɛ- **m-** -si	kɛ- **m-** -i	**mɛ-** -u	**mɛ-** -u **-si**	→
S →	-ʔɛ	-si-ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	**-si**	**mɛ-**

Table 9: Limbu verbal agreement. Markers *-si/tchi* and *mɛ-* highlighted.

Carving out the distribution of *-si*

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n -i -ŋ	-u-ŋ	-u-ŋ -si -ŋ	→
1DE						←	-nɛ-tchi-ge	→	-s-u-ge	-s-u -si -ge	→
1PE						↙	↓	↘	-u-m-be	-u-m -si -m-be	→
1DI									a- -s-u	a- -s-u -si	→
1PI									a- -u-m	a- -u-m -si -m	→
2SG	kɛ- -ʔɛ	↑	↗						kɛ- -u	kɛ- -u -si	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u -si	→
2PL	↙	↓	↘						kɛ- -u-m	kɛ- -u-m -si -m	→
3SG	-ʔɛ	-si-ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u -si	→
3DU	↑	↑	↑	↑	↑	↑	↑	↑	-s -u	-s -u -si	→
3PL	mɛ- -ʔɛ	mɛ- -si-ge	mɛ- -i -ge	a- m- -si	a- m-	kɛ- m-	kɛ- m- -si	kɛ- m- -i	mɛ- -u	mɛ- -u -si	→
S →	-ʔɛ	-si-ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	-si	mɛ-

Table 9: Limbu verbal agreement. Markers *-si/tchi* and *mɛ-* highlighted.

- Most robust association: *-si* and non-singular number
  (*-si* and *-tchi* are phonologically conditioned allomorphs)

Carving out the distribution of *-si*

A \ P	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU	3PL
1SG						-nɛ	-nɛ-tchi-ŋ	-n -i -ŋ	-u-ŋ	-u-ŋ -si -ŋ	→
1DE						←	-nɛ-tchi-ge	→	-s-u-ge	-s-u -si -ge	→
1PE						↙	↓	↘	-u-m-be	-u-m -si -m-be	→
1DI									a- -s-u	a- -s-u -si	→
1PI									a- -u-m	a- -u-m -si -m	→
2SG	kɛ- -ʔɛ	↑	↗						kɛ- -u	kɛ- -u -si	→
2DU	←	a-kɛ-	→						kɛ- -s-u	kɛ- -s-u -si	→
2PL	↙	↓	↘						kɛ- -u-m	kɛ- -u-m -si -m	→
3SG	-ʔɛ	-si-ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-u	-u -si	→
3DU	↑	↑	↑	↑	↑	↑	↑	↑	-s -u	-s -u -si	→
3PL	mɛ- -ʔɛ	mɛ- -si-ge	mɛ- -i -ge	a- m- -si	a- m-	kɛ- m-	kɛ- m- -si	kɛ- m- -i	mɛ- -u	mɛ- -u -si	→
S →	-ʔɛ	-si-ge	-i -ge	a- -si	a-	kɛ-	kɛ- -si	kɛ- -i	-∅	-si	mɛ-

Table 9: Limbu verbal agreement. Markers *-si/tchi* and *mɛ-* highlighted.

- Most robust association: *-si* and non-singular number (*-si* and *-tchi* are phonologically conditioned allomorphs)
- Often, more specific plural marker (like *-i*) restricts *-si* to dual function ⇒ *-si* is default
- **Take-away:** *-si* is everywhere, but *mɛ-* is not a natural override. We can make it into an override by the same method as *-mʔna*.

Interim IbM analysis: General *-si* and specific *mɛ-*

- Underspecified representation for default *-si*
- Specific facts of the distribution of *mɛ-* in the subtypes
- Partial generalization reflected in the *mɛ-* supertype

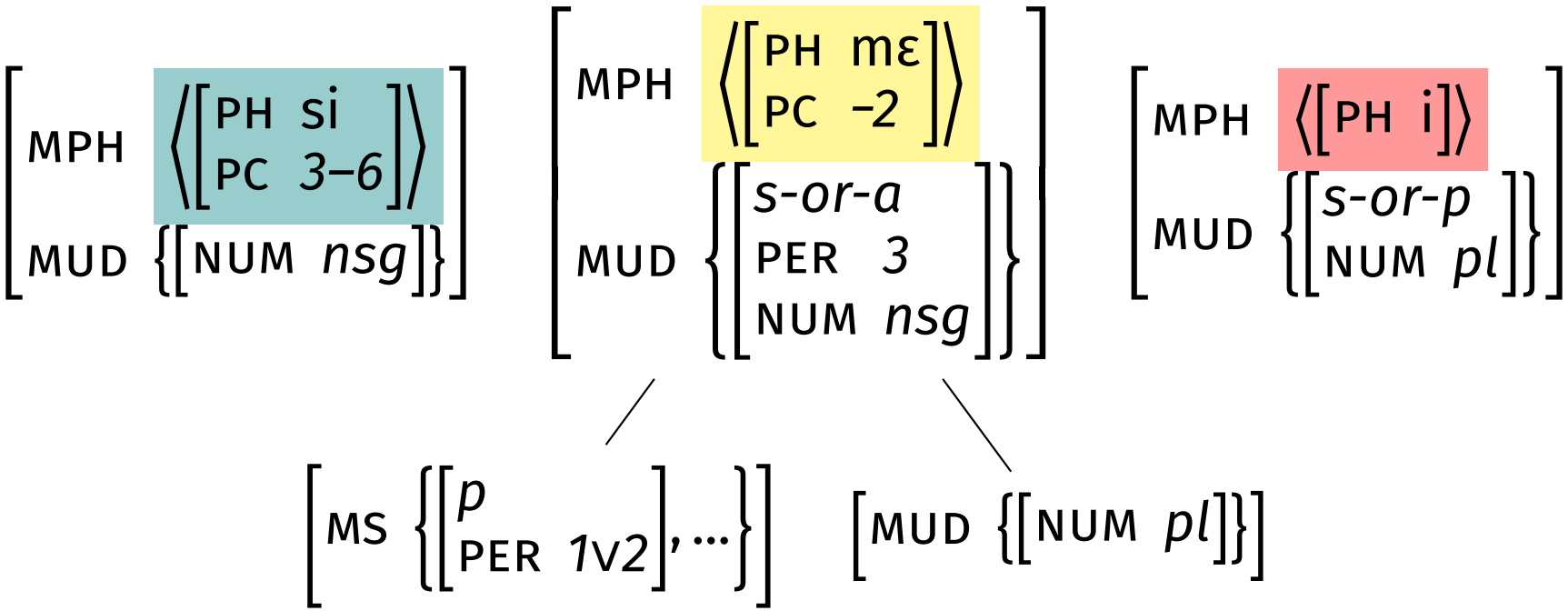
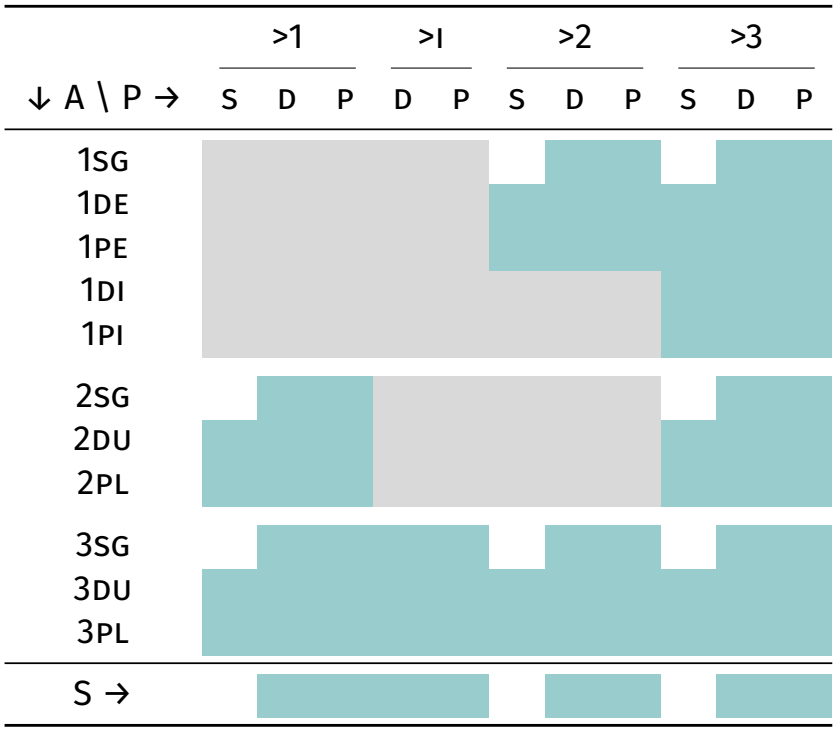


Figure 2: Rules for *-si* and *mɛ-*, and additional plural competitor *-i*

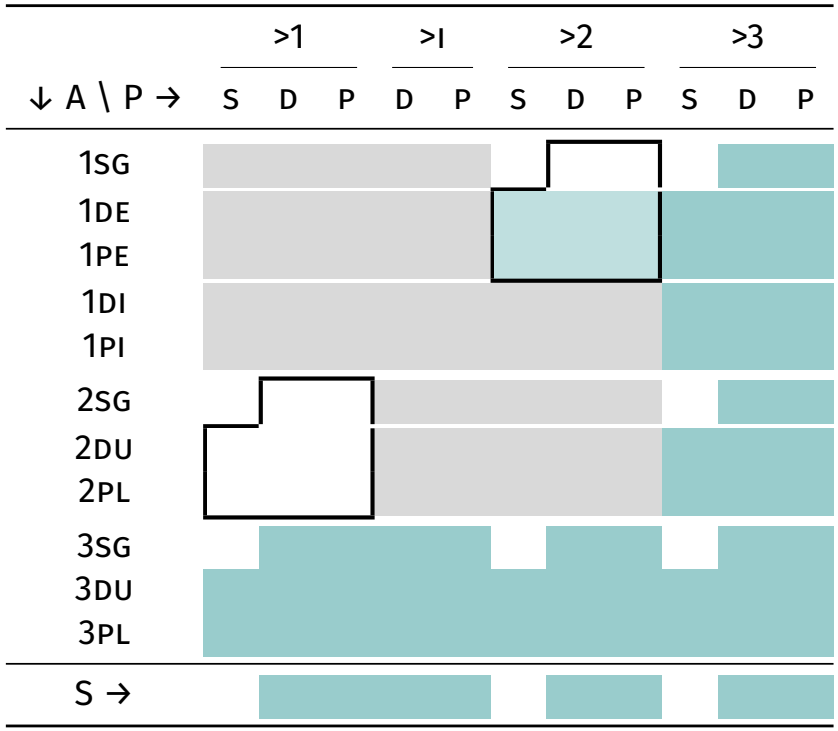
- *mɛ-* analyzed as a pseudo-Pāṇinian override (cf. *-mʔna*)
- This can be reduced to a **special case of a Pāṇinian split,** with generalizations about overrides

Full number neutralization: data

- Usually, determining function from form is easy: *-si* NSG; *-i* PL.ABS
- Determining form from function is harder:



(a) Non-singular functions

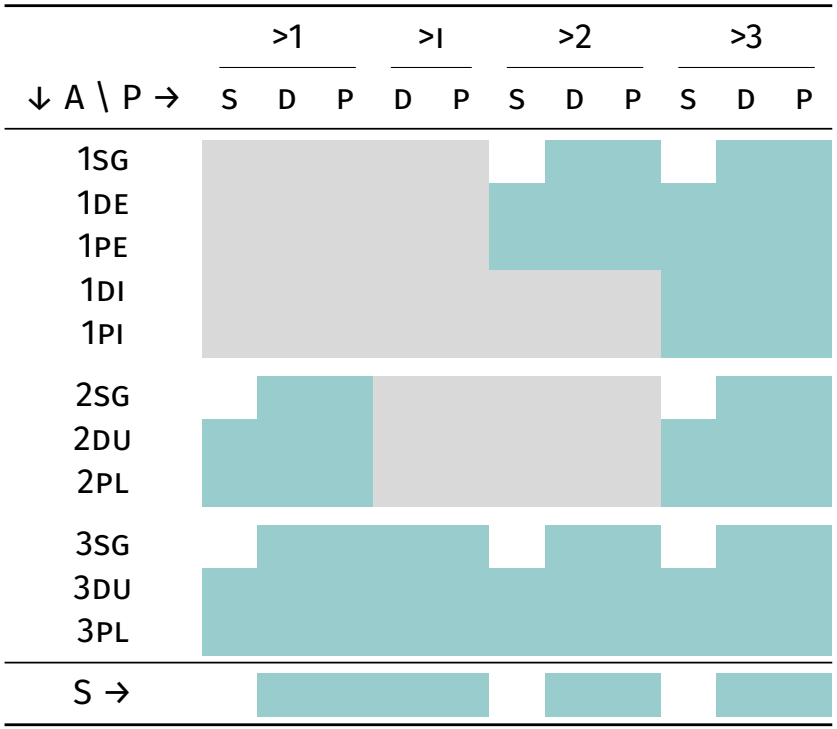


(b) Non-singular forms

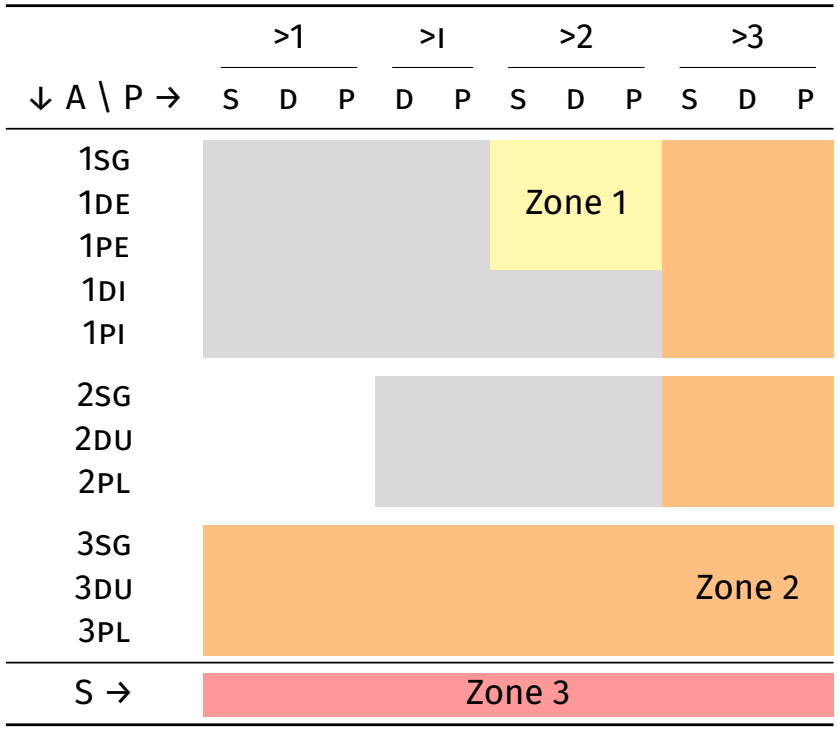
- 2>1 corner completely neutralized for A and P number
  - Conspicuous absence of number markers for *a-kɛ-*
  - No *-si* or *-i* allowed

Full number neutralization: data

- Usually, determining function from form is easy: *-si* NSG; *-i* PL.ABS
- Determining form from function is harder:



(a) Non-singular functions

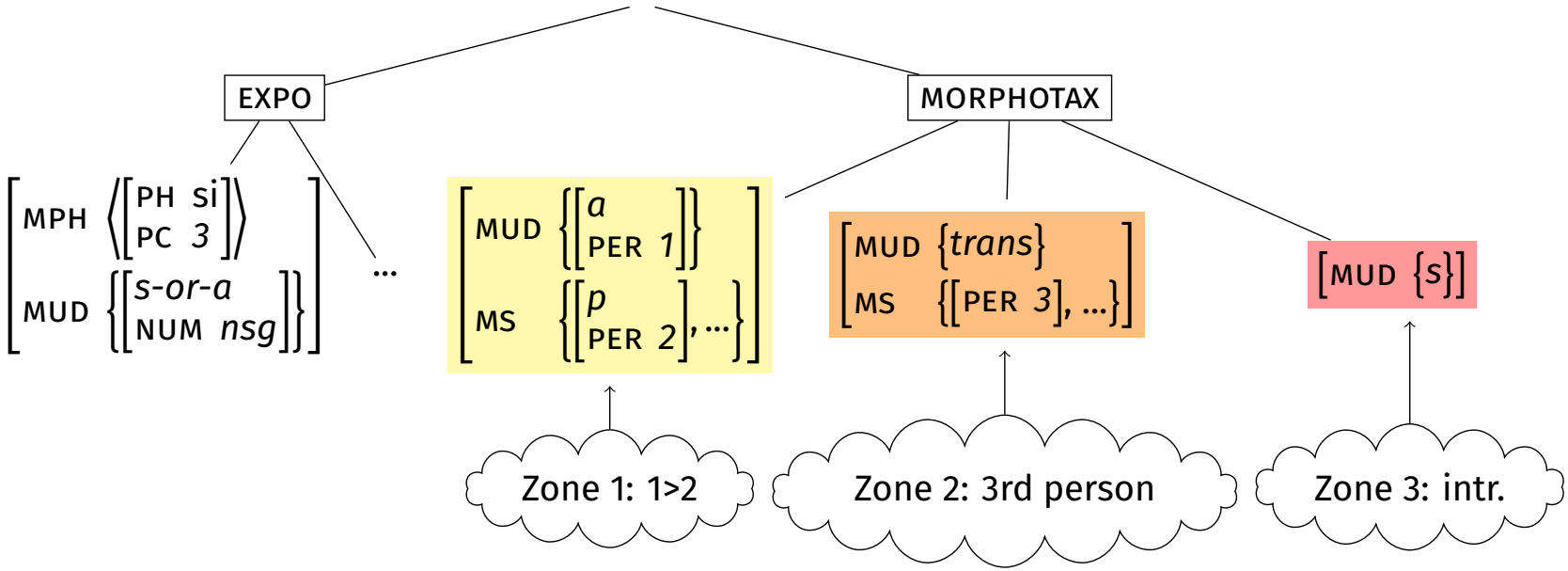


(b) Zones of non-singular inflection

- 2>1 corner completely neutralized for A and P number
  - Conspicuous absence of number markers for *a-kɛ-*
  - No *-si* or *-i* allowed
- **Take-away:** three zones license expression of number, independently of the forms/markers used

Neutralization: IbM analysis

- Distinguish:
  - Form to function: EXPO (what markers are available)
  - Function to form: MORPHOTAX (where they are used)



- These two dimensions are **combined systematically**, so that MORPHOTAX mediates the function-to-form mapping
- Common theme:
  - abstract classes formulate generalizations
  - use cases dealt with by more specific subtypes/combinations

Morphotactic dependence: data

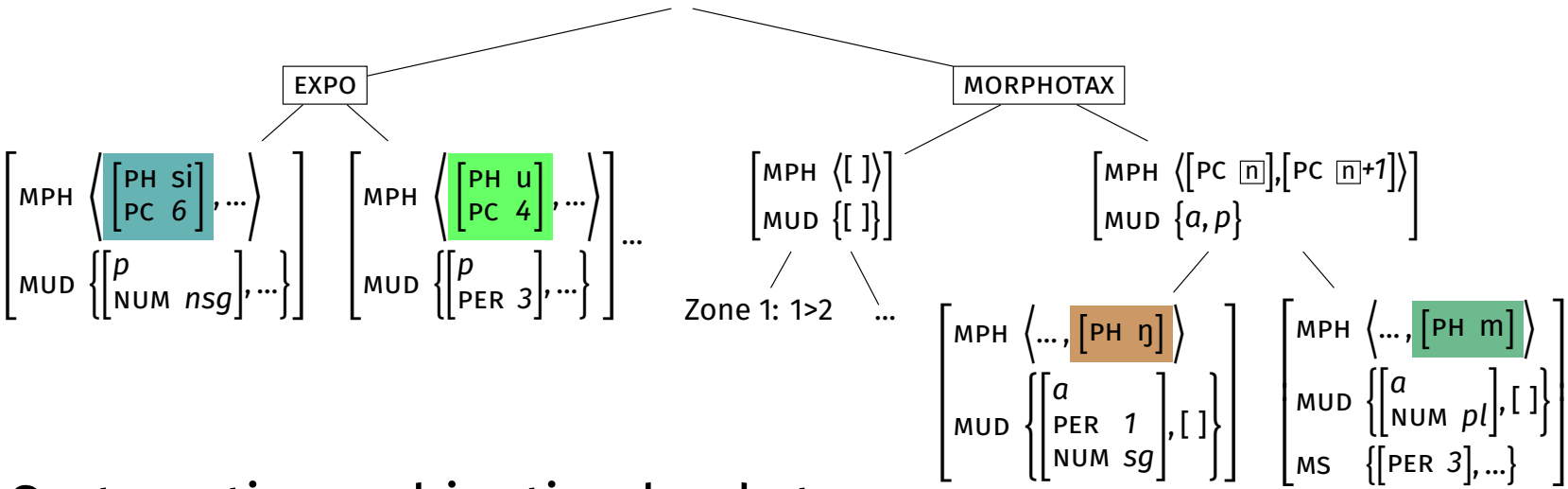
- "Copying" (van Driem 1987, Zimmermann 2016): *-u* ***-ŋ*** *-si* ***-ŋ***
- Not phonological (*-ŋ* serves to express 1SG):

Form	Cell	Copies
-nɛ	1SG>2SG	0
*-nɛtchi**ŋ***	1SG>2DU	1
*-u**ŋ**si**ŋ***	1SG>3NSG	2

- In fact, *-ŋ* depends on a *carrier* (Stump 2017):
  - *-si/tchi*, *-u*
  - exactly one *-ŋ* marker attached to each carrier, possibly leading to multiple exponence
- This is an instance of **morphotactic dependence**
  - Similar to Caucasian Batsbi (Harris 2009, Crysmann 2021a)
- Morphotactics (def.): conditions on the appearance and positions of morphs
- **Take-away:** "copying" or "multiple exponence" is actually the result of dependence of one marker on others

Morphotactic dependence: IbM analysis

- Possibility/requirement to appear with another marker are properties just like form or function, which can be abstracted
- Both inflectedness and dependence control **where** and **how** markers can appear:
  - sometimes *-si* might not appear at all (neutralization)
  - sometimes it appears with a dependent



- Systematic combination leads to:
  - compatible rules for *-u* *-ŋ* 1SG>3 and *-si* *-ŋ* 1SG>NSG, etc.
  - only those rules with carriers are licensed (no carrier ⇒ no *-ŋ* / *m*)
- This captures the **dependence**, and resulting **multiple exponence**

Pseudo-Pāṇinian splits beyond Limbu

- Kiranti:
  - Chamling and Athpare (Ebert 1997b,a)
- Outside Kiranti:
  - Koryak (Žukova 1972)
  - Pashto adjectives (Tegey & Robson 1996)

MAS	SINGULAR	PLURAL
NOM	tit	tit
OBL	tit	**tit-o**
FEM	SINGULAR	PLURAL
NOM	tit-a	tit-e
OBL	tit-e	**tit-o**

MAS	SINGULAR	PLURAL
NOM	təg-ay	təg-i
OBL	təg-i	**təg-o**
FEM	SINGULAR	PLURAL
NOM	təg-e	təg-e
OBL	təg-e	**təg-o**

Table 10: Declension of *tit* (class I) and *təg-ay* (class III)

- **OBL.PL override** generalizes across genders (pseudo-Pāṇini)
- *NOM.SG* may have a class/gender specific override (Pāṇini)

Conclusion

Insight from each of these phenomena:

- Pseudo-Pāṇini
  - Not an isolated phenomenon
  - Understand what types of inflectional competition appear in languages
  - Explore formal approaches to distinguish and reduce apparently similar phenomena
- Neutralization
  - Deviation from 1 : 1 function-to-form mapping (1 : 0)
  - We can **separate variation:**
    - with what to inflect (EXPO)
    - where to inflect (MORPHOTAX)
- Multiple exponence
  - Opposite deviation from 1 : 1 function-to-form mapping (1 : n)
  - We can separate variation:
    - with what carrier to inflect (EXPO)
    - with what dependent, “how”, to inflect (MORPHOTAX)
- Use flexible **abstractive mechanisms** to reduce hard inflectional problems to **general tendencies** vs. **specific uses**

Disentangling morphomic splits in Limbu

ISMo 2023

Berthold CRYSMANN Baptiste LOREAU UNGER

LLF (CNRS & U Paris Cité) ENS Paris–Saclay

13 Sept 2023

- Baerman, Matthew, Dunstan Brown & Greville G. Corbett. 2005. *The syntax-morphology interface: a study of syncretism*. (Cambridge Studies in Linguistics). Cambridge University Press.
- Bonami, Olivier. 2015. Periphrasis as collocation. *Morphology* 25. 63–110.
- Corbett, Greville G. 2015. Morphosyntactic complexity: A typology of lexical splits. *Language* 91(1). 145–193.
- Crysmann, Berthold. 2021a. Deconstructing exuberant exponence in Batsbi. In Berthold Crysmann & Manfred Sailer (eds.), *One-to-many-relations in morphology, syntax, and semantics* (Empirically Oriented Theoretical Morphology and Syntax 7), 53–84. Berlin: Language Science Press.
- Crysmann, Berthold. 2021b. Morphology. In Stefan Müller et al. (eds.), *Head-Driven Phrase Structure Grammar: The handbook*, 947–999. Berlin: Language Science Press.
- van Driem, George. 1987. *A Grammar of Limbu*. (Mouton grammar library). Mouton de Gruyter.

- Ebert, Karen H. 1997a. *A Grammar of Athpare*. (Berliner Musik Studien). Lincom Europa.
- Ebert, Karen H. 1997b. *Camling (Chamling)*. U. J. Lüders (ed.). Vol. 103. München - Newcastle: Lincom Europa.
- Harris, Alice C. 2009. Exuberant exponence in Batsbi. *Natural Language & Linguistic Theory* 27. 267–303.
- Harris, Alice C. 2017. *Multiple exponence*. Oxford University Press.
- Kiparsky, Paul. 1985. Some consequences of lexical phonology. *Phonology* 2. 85–138.
- Stump, Gregory T. 2001. Inferential–realizational morphology. In *Inflectional Morphology: A Theory of Paradigm Structure* (Cambridge Studies in Linguistics), 1–30. Cambridge: Cambridge University Press.
- Stump, Gregory T. 2017. Rules and blocks. In Claire Bowern, Laurence Horn & Raffaella Zanuttini (eds.), *On looking into words (and beyond)* (Empirically Oriented Theoretical Morphology and Syntax 3), 421–440. Berlin: Language Science Press.

- Tegey, Habibullah & Barbara Robson. 1996. *A reference grammar of Pashto*. Washington, D.C.: Center for APllied Linguistics.
- Tumbahang, Govinda Bahadur. 2007. *A descriptive grammar of Chhatthare Limbu*. Tribhuvan University dissertation.
- Zimmermann, Eva. 2016. Copy affixes in Kiranti. *Reproductive Processes in Grammar, Linguistische Arbeits Berichte* 93. 1–34.
- Žukova, Alevtina N. 1972. *Grammatika korjakskogo iazyka: fonetika, morfologija*. Leningrad: Nauka.

Entire system of Limbu conjugation

	AFF.NPT									
	1SG	1DE	1PE	1DI	1PI	2SG	2DU	2PL	3SG	3DU/PL
1SG						- -nɛ	- -nɛtchiŋ	- -niŋ	- -uŋ	- -uŋsiŋ
1DE						←	- -nɛtchige	→	- -suge	- -susige
1PE						↙	↓	↘	- -umbe	- -umsimbe
1DI									a- -su	a- -susi
1PI									a- -um	a- -umsim
2SG	kɛ- -ʔɛ	↑	↗						kɛ- -u	kɛ- -usi
2DU	←	akɛ- -	→						kɛ- -su	kɛ- -susi
2PL	↙	↓	↘						kɛ- -um	kɛ- -umsim
3SG	- -ʔɛ	- -sige	- -ige	a- -si	a- -	kɛ- -	kɛ- -si	kɛ- -i	- -u	- -usi
3DU	↑	↑	↑	↑	↑	↑	↑	↑	- -su	- -susi
3PL	mɛ- -ʔɛ	mɛ- -sige	mɛ- -ige	am- -si	am- -	kɛm- -	kɛm- -si	kɛm- -i	mɛ- -u	mɛ- -usi
INTR	- -ʔɛ	- -sige	- -ige	a- -si	a- -	kɛ- -	kɛ- -si	kɛ- -i	- -	- -si … mɛ- -

Figure 4: Limbu verbal agreement. Arrows show syncretic cells.

Other pseudo-Pāṇinian splits I

Case	MAS	FEM
OBL.PL	**tit-o**	**tit-o**
OBL.SG	tit	tit-e
NOM.PL	tit	tit-e
NOM.SG	tit	*tit-a*

(a) Class I

Case	MAS	FEM
OBL.PL	**təg-o**	**təg-o**
OBL.SG	təg-i	təg-e
NOM.PL	təg-i	təg-e
NOM.SG	*təg-ay*	təg-e

(b) Class III

Table 11: Pashto adjectives (Tegey & Robson 1996)

Other pseudo-Pāṇinian splits II

P \ A	3SG	3PL
2SG	**ma-**	**ma-**
3DU	-uci	u- -uci
1SG	-ŋa	u- -ŋa
∅ (intr.)	∅	u-

Table 12: Athpare person marking (across tenses). The split between *u-* 3PLA/S and ∅ 3SGA/S extends all over the 3(>1NINCL/3) subparadigm; disrupted in 3>2/1INCL scenarios. Adapted from Ebert (1997a: p. 31).

Other pseudo-Pāṇinian splits III

Participants \ roles	DIR		INV	
2DU~3SG	**ta-**	**-ci**	**ta-**	**-ci**
1SG~3SG		-uŋa	pa-	-uŋa
1PI~3SG		-um	pa-	-i
3SG~3PL		-ucyu	pa-	

Table 13: Northwest Chamling transitive person marking (across tenses). The split between *pa-* INV and ∅ DIR extends all over the 3~1/3 subparadigm; disrupted in scenarios involving a 2nd-person participant, which use the *ta-* prefix (although that is only clearly apparent in inverse scenarios 2>1 and 3>2). Adapted from Ebert (1997b: p. 17).

Other pseudo-Pāṇinian splits IV

A \ P	3SG	3DU	3PL
2NSG	**-tkə**	**-tkə**	-la**-tkə**
3SG	**-nin**	**-nin**	**-nin**
1SG	t- -n	t- -net	t- -new
1DU	mət- -n	mət- -net	mət- -new
2SG	-n	-net	-new
3NSG	ne- -n	ne- -net	ne- -new

Table 14: Koryak transitive person marking (past tense). The split between *-n* 3SGP, *-net* 3DUP and *-new* 3PLP extends all over the third-person-patient subparadigm; disrupted in scenarios involving a 2NSG or 3SG agent. Adapted from Žukova (1972: pp. 252–254).

Microvariation in number syncretisms

Figure 5: Horizontal syncretism; SE Chamling

A \ P	1SG	1DU	1PL
2SG	→	→	→
2DU	→	→	→
2PL	→	→	→

Figure 6: Expression of either number (with overabundance); Athpare

A \ P	1SG	1DU	1PL
2SG		↓	↓
2DU	→	→↓	→↓
2PL	→	→↓	→↓

Figure 7: Cross syncretism (with dual expression being favored); Thulung

A \ P	1SG	1DU	1PL
2SG		↓	
2DU	→	→↓	→
2PL		↓	

Figure 8: Zero override: no overt number expression; Limbu

A \ P	1SG	1DU	1PL
2SG	•	↑	↗
2DU	←	∅	→
2PL	↙	↓	↘

Copying & variation

- Affix copying:

Figure 9: Example paradigm of suffixes in three Kiranti languages, showcasing microvariatic
(Ebert 1997b,a, van Driem 1987).

Chamling	Athpare	Limbu	Gloss
-**uŋa**	-u**ŋ**	-u**ŋ**	1SG>3SG
-**uŋcuŋa**	-u**ŋ**ci**ŋ**	-u**ŋ**si**ŋ**	1SG>3PL
-**u**	-u	-u	3SG>3SG
-**u**cy**u**	-uci	-usi	3SG>3PL

- But also...
  - "Syllable" copying for TAM marking in Athpare (Zimmermann 2016)
  - Multiple copies of a negative marker in Limbu (Tumbahang 2007, Stump 2017)

Natural splits in verbal paradigms I

Figure 10: Natural splits fixing person, number and role: French *je* 1SG.A and *me* 1SG.P

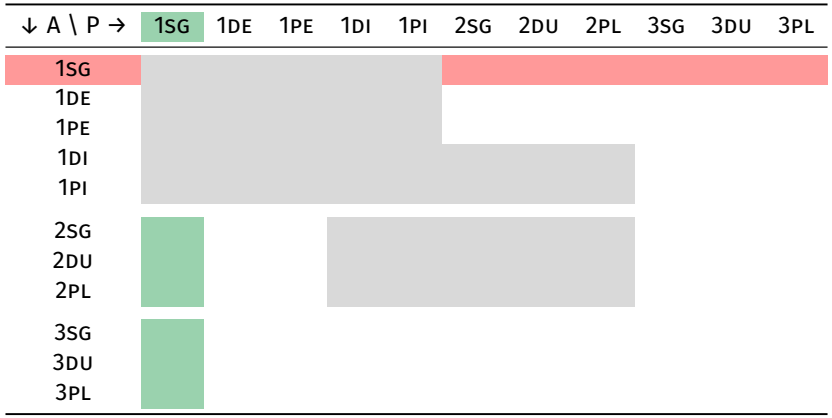
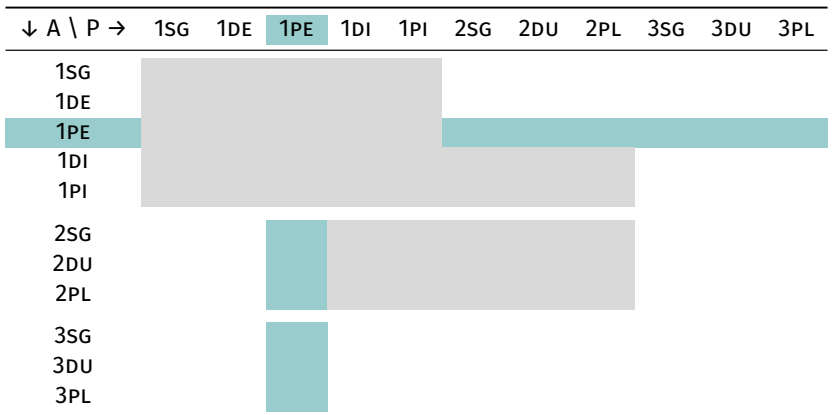


Figure 11: Natural splits with unspecified role: French *nous* 1PL



Natural splits in verbal paradigms II

Figure 12: Natural splits with unspecified number: Limbu *-u* 3.P

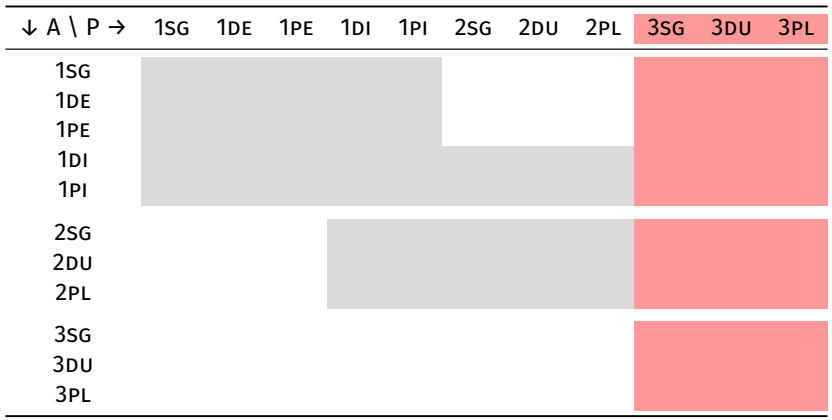
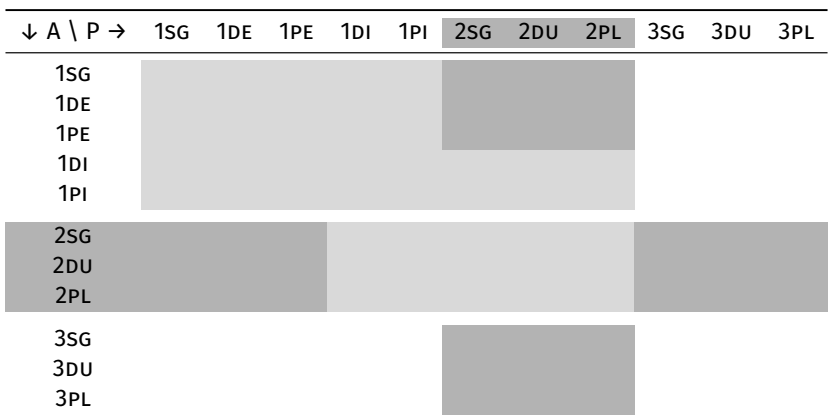
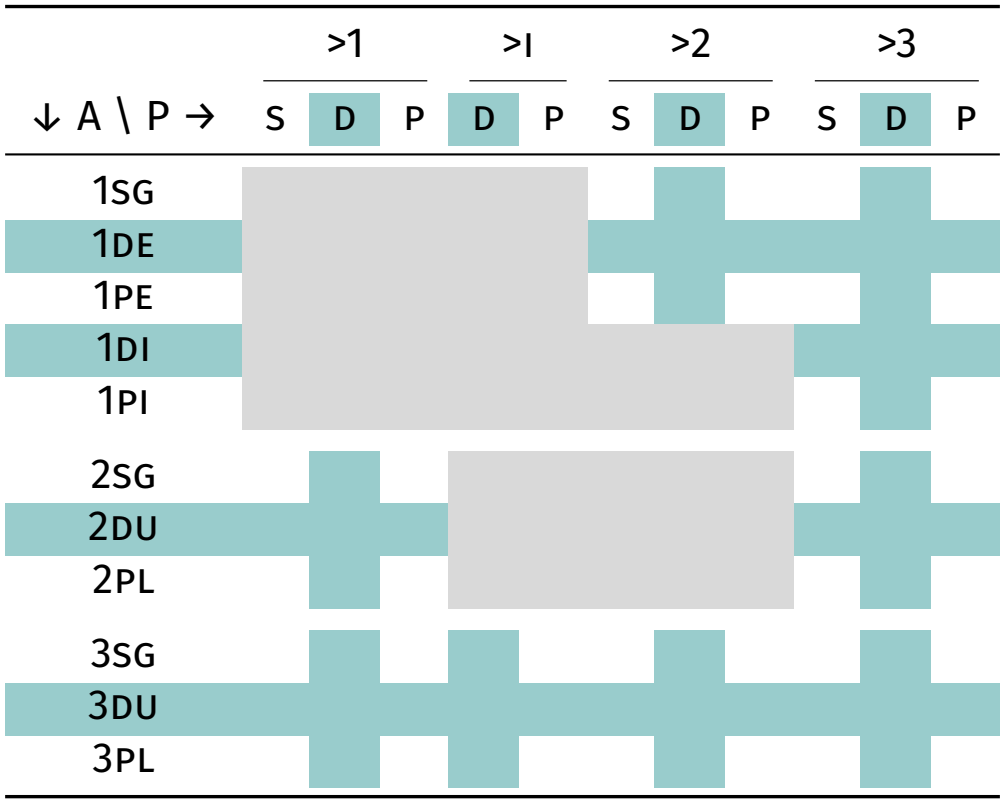


Figure 13: Natural splits with unspecified number and role: Limbu *kɛ-* 2



Natural splits in verbal paradigms III

Figure 14: Natural splits with unspecified person and role: Thulung *-tsi* DU



- Might look morphomic... but not necessarily, given the right underspecification!