

NONCOMPOSITIONAL SCOPAL MORPHOLOGY IN YI*

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ABSTRACT. This paper distinguishes between scopal affix paradigms and compositional affix paradigms, two notions confused in the literature. The Yi languages (Tibeto-Burman: China) exhibit maximally scopal paradigms which reflect the cognitive layers of the sentence in the mind of the speaker. In spite of this prototypical pattern, the paradigm is full of noncompositional pairs of morphemes.

KEYWORDS: Scopal morphology, templatic morphology, compositionality, Yi, China

1. Introduction

In the literature on affix order, scholars often identify scopal affix paradigms with systems that are semantically compositional. Here are some quotes:

“Global Uniformity is due to the presence of scopal relationships, or semantic compositionality, between the morphemes involved.” (Rice 2000:24)

“I show that neither semantic scope (or ‘compositionality’) nor the syntactic MP can account for the full range of suffix ordering facts in any Bantu language.” (Hyman 2003: 246)

“Semantic scope implies semantic compositionality.” (Manova & Aronoff 2010:121)

However, scopal paradigms are not necessarily compositional and compositional paradigms need not be scopal. In scopal paradigms, the interpretation of an affix depends on the meaning of its neighbor, as opposed to templatic paradigms in which an affix does not depend on adjacent morphemes (see §2 for full details). According to the classical principle of compositionality, the meaning of a compositional affix cluster is “a function of the meaning of its parts and the way they are combined” (Frege 1884:x; Janssen 1997:419; Szabó 2012). We can sharpen this principle by the two statements in (1). An affix cluster is compositional if for every pair of affixes X and Y,

- (1) a. If XY is attested, then Meaning(XY) is defined as a function of Meaning(X), Meaning(Y) and of the order XY.
- b. If XY is unattested, then there is no semantic function that outputs a sense for Meaning(X), Meaning(Y) and for the order XY.

A paradigm is therefore *noncompositional* in exactly two ways.

- (2) a. XY is attested, but Meaning(XY) is not derivable, i.e. opaque or ambiguous.
- b. XY is unattested, but Meaning(XY) is conceptually conceivable.

In particular, scopal paradigms can be *noncompositional*, as I demonstrate in this paper for the Yi languages (§4). Conversely, templatic paradigms can be compositional. An affix cluster may consist of morphemes which contribute compositionally to the whole but whose meanings are independent of each other. For example, agreement morphology in Ngarinyin is compositional and largely templatic.¹ The

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¹ Although McGregor (2002: 25) does not discuss affix order in Ngarinyin, it follows nevertheless from the description that the paradigm of the classificatory verb is largely templatic.

sense of the verbal complex in (3) is a function of the meaning of the agreement affixes and of the verb *ma* ‘take’, which is *the way the affixes are combined*. On the other hand, the cluster in (3) is nonscopal as the interpretation of the accusative prefix doesn’t depend on the nominative or locative prefix and vice versa.²

(3) Ngarinyin (Worrorran: Australia)

McGregor (2002: 25)

jaraug	andu-	∅-	ma	-nga	-lu.
push.back	3P.PL.ACC	3P.SG.NOM	take	PST	LOC.PROX

‘He pushed them back this way.’

These considerations lead to the possibility of four kinds of affix paradigms. (4a) and (4c) are extreme potentially unattested types. Most paradigms are not fully compositional.

- (4) a. compositional scopal paradigms b. noncompositional scopal paradigms
 c. compositional templatic paradigms d. noncompositional templatic paradigms

The goal of this paper is to illustrate the type (4b) with the Yi languages. We show that they have scopal as opposed to templatic paradigms (§2), that the paradigms can be characterized by the cognitive layers of the sentence in the mind of native speakers (§3), and that the paradigms have numerous compositionality gaps (§4).

The Yi languages (Tibeto-Burman: China) are a group of more than 100 languages spoken in Sichuan, Yunnan, Guangxi and Guizhou (P.R. of China). The ethnic Yi (彝) nationality, one of the 56 ethnic nationalities in China, makes up most of the Burmese-Lolo language group, one of the eight subgroups in Tibeto-Burman. The Yi languages have between 3 and 5 *omnisyllabic* tones (Matisoff 1989), which are contrastive tones on every syllable. Tones are marked by two numbers between 1 and 5, one for the beginning, one for the end of the tonal contour (e.g. ³³, ²¹). I have done research on Yi languages for more than 17 years and collected the data for this paper during 2003-2006. The data are based on systematic fieldwork in four Yi languages, representative of four major subgroups: Liangshan Nuosu (North), Weining Neasu (East), Yongren Lolo (Central) and Gejiu Nesu (South). I also elicited data from several other Yi languages in a more unsystematic fashion.

2. Scopal vs. templatic paradigms

Languages linearize affixes in *templatic* paradigms (Simpson & Withgott 1986:156; Spencer 1991; Inkelas 1993) or in *scopal* paradigms (Stump 1997; Mithun 1999). Both paradigms are represented in (5) for suffixes.

- (5) a. Templatic (flat) ordering: STEM A B C D E
 b. Scopal (hierarchical) ordering: [[[[[STEM → A] → B] → C] → D] → E]

A, B, C, D and E are morpheme categories which represent positions in a word. Templatic and layered morphology are characterized by opposite behavior to four properties: *headedness*, *zero morphemes*, *lookahead*, and *adjacency* (Simpson & Withgott 1986; Spencer 1991; Rice 2000; Manova & Aronoff 2010).

² For the interlinear glosses, see the list of abbreviations at the end of the paper. Glosses of verb enclitics in the Yi languages are separately presented in table 4.

Table 1: Four properties of template and scopal morphology

	Template Morphology	Scopal Morphology
Headed Structures	No	Yes
Zero Morphemes	Yes	No
Lookahead	Yes	No
Adjacency	No	Yes

The choice of affix paradigm is influenced by the morphology type of a language which is defined by the degree of synthesis and fusion (Comrie 1989: 42-44). Nordlinger (2010) showcases the polysynthetic Murrinh-Patha language with prototypical templatic morphology. Other synthetic languages display mixed templatic/scopal morphologies such as the Athapaskan (Rice 2000) and Caucasian languages (Korotkova & Lander 2010).

Exploring affix order is nonsensical in extreme isolating and extreme fusional languages as these languages attach no or only one affix to a root. Yet, the isolating languages in East Asia use enclitics relatively bound to the verb. Most of these enclitics are grammaticalized verbs whose function as verb survived in a few cases. They can be separated from the stem, can be reduplicated but cannot stand alone. They are less bound to their host than affixes in synthetic languages, but it is still appropriate to compare enclitic order with affix order, because the enclitics represent the major strategies to encode tense, aspect and modality (though not subject agreement), just as affixes in synthetic languages.

Table 2: Morphology type and affix order type

Synthesis (Comrie 1989:44)	Fusion (Comrie 1989:42)	Boundedness (Whaley 1997:113)	Affix Order	Languages	Reference
synthetic	agglutinative	bounded	templatic	Murrinh-Patha	Nordlinger (2010)
synthetic	agglutinative	bounded	scopal (partial)	Athapaskan	Rice (2000)
synthetic	fusional	bounded	nonsensical	Classical Greek	Morwood (2001: 62-109)
isolating		clitic	scopal	Classical Chinese; Yi	Pulleyblank (1995); this paper

In East Asia, we must distinguish between SVO and SOV languages. In Chinese, which has SVO order, some enclitics occur after the verb, some after the object. In the Yi languages, which have SOV order, all enclitics occur after the verb. The Yi languages thus allow to make stronger claims about the order of enclitics than Chinese. A complete list of the clitic categories is provided in §3. As many grammatical enclitics have no direct correspondence in English, I describe them with phrases or sentences.

The four properties, headedness (§2.1), zero morphemes (§2.2), lookahead (§2.3), adjacency (§2.4), are formal combinatorial features.

2.1 Headedness

The concept of headed structures is central in X-bar theory and is enshrined in the *Endocentricity Constraint*. Each syntactic constituent must be properly headed or, more technically speaking, each phrase structure rule must contain the same category symbol on both sides of the rewrite rule.

(6) Endocentricity Constraint (Jackendoff 1977:34)

Every possible phrase structure rule must be of the form $X^n \rightarrow \dots X^k \dots$ ($n \geq k$)

The idea of headedness also captures scopal morphology by interpreting each affix/clitic position as derivation.

(7) Endocentric Morphology

- a.
- $\text{STEM}^n \rightarrow \text{STEM}^k \ Y^n \quad (n \geq k)$

Headedness or endocentricity is defined in (7a) for suffixes by using the following notations:

- | | | |
|----------------------------------|-----------|-----------|
| b. $\text{STEM}^0 = \text{STEM}$ | $Y^2 = B$ | $Y^4 = D$ |
| $Y^1 = A$ | $Y^3 = C$ | $Y^5 = E$ |

Scopal paradigms are headed. Each derivation STEM^n is an independent word constituent. The endocentric nature of scopal paradigms is compatible with recursive derivation rules. Morphemes of the same category layer may be stacked after each other, morphemes of different category layers can only co-occur in monotone increasing order (A B C D...).

Yi languages have scopal verb paradigms which define the categories A, B, C, D as cognitive layers (see introduction of §3). Bare verbs can act as the sole predicate of the sentence but are grammatically underspecified. The addition of any compatible morpheme expands the predicate into another predicate of the sentence. We illustrate monotone increasing layer order in example (8) and §3.1, and showcase morphemes of the same layer order in §3.2.

Liangshan Nuosu (Sichuan Province, China)

- (8) a. $\text{mo}^{33}\text{m}^{33}$ $\text{ts}^{\text{h}}\text{a}^{44}$ $\text{t}^{\text{h}}\text{u}^{33}$, $\text{i}^{33}\text{t}\check{\text{e}}^{\text{h}}\text{ə}^{55}$ ndo^{33} .
 sky, weather hot time, when water drink
 ‘When the weather is hot, one drinks water.’

- b. $\text{mo}^{33}\text{m}^{33}$ $\text{ts}^{\text{h}}\text{a}^{44}$ $\text{t}^{\text{h}}\text{u}^{33}$, $\text{i}^{33}\text{t}\check{\text{e}}^{\text{h}}\text{ə}^{55}$ ndo^{33}

$\text{t}\check{\text{e}}^{\text{h}}\text{i}^{33}$.
WANT
Layer A

‘When the weather is hot, one wants to drink water.’

- c. $\text{mo}^{33}\text{m}^{33}$ $\text{ts}^{\text{h}}\text{a}^{44}$ $\text{t}^{\text{h}}\text{u}^{33}$, $\text{i}^{33}\text{t}\check{\text{e}}^{\text{h}}\text{ə}^{55}$ ndo^{33}

$\text{t}\check{\text{e}}^{\text{h}}\text{i}^{33}$	$\text{ko}^{33}\text{ʃ}\text{u}^{44}$.
WANT	HAB
Layer A	Layer B

‘When the weather is hot, one always wants to drink water.’

- d. $\text{mo}^{33}\text{m}^{33}$ $\text{ts}^{\text{h}}\text{a}^{44}$ $\text{t}^{\text{h}}\text{u}^{33}$, $\text{i}^{33}\text{t}\check{\text{e}}^{\text{h}}\text{ə}^{55}$ ndo^{33}

$\text{t}\check{\text{e}}^{\text{h}}\text{i}^{33}$	$\text{ko}^{33}\text{ʃ}\text{u}^{44}$	$\text{t}\check{\text{c}}\text{o}^{44}\text{d}\text{z}\text{i}^{21}$.
WANT	HAB	POSS
Layer A	Layer B	Layer C

‘When the weather is hot, one, supposedly, always wants to drink water.’

Templatic morphology is not endocentric but “flat”. Each morpheme category $Y (= A, B, C, D, E)$ is defined as a set of morphemes Y^1, \dots, Y^k that may be substituted in a particular slot of the word. Morphemes of the same category may not co-occur, but morphemes of different categories can co-occur.

- (9) Templatic (flat) ordering:
- | | | | | | | |
|------|---|----------------|----------------|----------------|----------------|----------------|
| STEM | { | A | B | C | D | E |
| | | A ₁ | B ₁ | C ₁ | D ₁ | E ₁ |
| | | A ₂ | B ₂ | C ₂ | D ₂ | E ₂ |
| | | A ₃ | B ₃ | C ₃ | D ₃ | E ₃ |
| | | A ₄ | B ₄ | C ₄ | D ₄ | E ₄ |
| | | A ₅ | B ₅ | C ₅ | D ₅ | E ₅ |
| | | ... | ... | ... | ... | ... |

Breaking up templatic paradigm doesn't generate a morphological constituent let alone an independent word. In Slave (Na-Dené) with partially templatic morphology, we cannot cut preverb and situation aspect prefixes off the root. This follows from Rice's discussion of the data (Rice 2000: 275).

- Slave (Athapaskan, Na-Dené: Canada) Rice (2000: 275)
- (10) a.

dah-	th-	i-
preverb	accomplishment	2P.SG.S
Slot C	Slot B	Slot A

 tʰa
STEM
'You get onto it.'
- b. *

th-	i-
accomplishment	2P.SG.S
Slot B	Slot A

 tʰa
STEM
'You get onto it.'

2.2 Zero morphemes

Zero morphemes are prevalent in templatic paradigms (Simpson & Withgott 1986: 156). In a templatic paradigm, each position must be represented by one affix of a finite contrast set. According to a principle of economy, elements used commonly tend to be eliminated (Haiman 1983: 807). It thus happens in templatic morphology that one of the contrastive meanings is marked by a zero morpheme.

Nordlinger (2010: 330) mentions the existence of several zero morphemes in the verb template of Murrinh-Patha.

- Murrinh-Patha (Daly: Australia)
- (11) a.

dirra-	∅-
3P.SG.S.watch(28).PST.IMP	3P.SG.O
Slot B	Slot A

 wintharrarr

-dha
PST.IMP.PC.F
Slot A*

seek
Stem
'He was looking for him/her.'
- b.

dirra-	nku-
3P.SG.S.watch(28).PST.IMP	3P.DU/PC.O
Slot B	Slot A

 wintharrarr

-dha
PST.IMP.PC.F
Slot A*

seek
Stem
'He was looking for the few women.'

Bybee (1985a: 54) quantifies the occurrence of zero morphemes for different grammatical categories. In 25 languages with templatic morphology, 78% mark *singular number* with zero; 63% mark *present tense* with zero; 60% encode *indicative mood* with zero; 54% mark *third person subject agreement* with zero; 41% encode *perfective aspect* with zero.

In scopal morphology, a layer need not be represented by affixes/clitics. The absence of morphemes leaves the predicate underspecified and does not carry meaning. (12a) is underspecified for layer A meanings but can be fully specified as in (12b). The same applies to examples (13)-(14).

- Weining Neasu (Guizhou Province, China)
- (12) a.

dzo ²¹	ga ⁵⁵	tsa ³³	ŋo ²¹	sɿ ³³
path	DEM.DIST	CL	1P.SG	run

he ³³	
FUT	
Layer A	Layer B

'I will run through (some / all of) that path.'

b.	dʒo ²¹	ga ⁵⁵	tʂa ³³	ŋo ²¹	sɣ ³³	χo ²¹	he ³³
	path	DEM.DIST	CL	1P.SG	run	SEND	FUT
						Layer A	Layer B

‘I will completely run through that path.’

Liangshan Nuosu (Sichuan Province, China)

(13) a.	nu ³³	b ^v u ⁵⁵ ts ^h i ³³	ndo ³³	ko ³³ ʂu ⁴⁴	ha ⁴⁴ !
	2P.SG	medicine	drink	HAB	SUG
				Layer A	Layer B
				Layer C	Layer D

‘Take always (some / all of) your medicine!’

b.	nu ³³	b ^v u ⁵⁵ ts ^h i ³³	ndo ³³	sa ⁵⁵	ko ³³ ʂu ⁴⁴	ha ⁴⁴ !
	2P.SG	medicine	drink	EXH-1	HAB	SUG
				Layer A	Layer B	Layer C
				Layer D		

‘Finish always all your medicine!’

Yongren Lolo (Yunnan Province, China)

(14) a.	zɔ ²¹	no ³³ kɛ ³³	kɛ ³³	χa ³³ .
	3P.SG	infection	be infected	FEAR
				Layer A
				Layer B
				Layer C

‘[I am] afraid that he has (had or will have) an infection.’

b.	zɔ ²¹	no ³³ kɛ ³³	kɛ ³³	yo ³³	ɔ ⁴⁴	χa ³³ .
	3P.SG	infection	be infected	GET	DP	FEAR
				Layer A	Layer B	Layer C

‘[I am] afraid that he has got an infection.’

There are no zero morphemes in scopal morphology. No meaning is encoded when a layer is unrepresented.

2.3 Lookahead

Lookahead is the property of “discontinuous dependencies” (Simpson & Withgott 1986: 155-156), the property that nonadjacent morphemes mutually impose selectional restrictions.

(15) Discontinuous morphemes **B_k** and **D_n** select each other: STEM A **B_k** C **D_n** E

Lookahead is a feature of templatic morphology not of layered morphology. In Slave, the proximal middle voice prefix d- has the lookahead property (or we should say *lookback* property as Slave is prefixing). It must co-occur with the distal reflexive 'ede-, the reciprocal 'eɫe- or the self-benefactive de-.

Slave (Athapaskan, Na-Dené: Canada)

(16) a.	dah-	'ede-	dí-	d-	lu.	Rice (2000: 144)
	preverb ‘up’	REFL	noun class	MID	STEM	
	Slot D	Slot C	Slot B	Slot A		

‘S/he hung him/herself.’

b.	de-	nj-	d-	lu.	Rice (2000: 147)
	REFL.BEN	2P.SG.S	MID	STEM	
	Slot C	Slot B	Slot A		

‘You sew for yourself.’

In languages with layered morphology, nonadjacent morphemes are never required to co-occur together.

2.4 Adjacency

In scopal but not templatic paradigms, an affix is only sensitive to the *adjacent* morpheme which is the most recently attached by a morphological rule (Allen 1978). The English suffix *-ation* in *industrial-ization* only reacts to the suffix *-iz* and does not “know” anything about the nonadjacent word *industrial*.

The Yi enclitics are only sensitive to immediately preceding morphemes. For example, the Nuosu progressive clitic **ku**³³ and perfect clitic **o**⁴⁴ cannot co-occur if they are adjacent, as in (17a). Information about the progressive clitic is not available to the perfect clitic, if the future clitic **mi**⁴⁴ is inserted, as in (17b).

Liangshan Nuosu (Sichuan Province, China)

- (17) a. * ts^hi³³ k^hu²¹m³³ hi²¹ ŋi³³, ŋa³³ dza⁴⁴ dzu⁴⁴

ku ³³	o ⁴⁴ .
PROG	DP
Layer A	Layer B
- 3P.SG INT.how say also 1P.SG food eat

Intended meaning: ‘Whatever he says, I am eating.’

- b. ts^hi³³ k^hu²¹m³³ hi²¹ ŋi³³, ŋa³³ dza⁴⁴ dzu⁴⁴

ku ³³	mi ⁴⁴	o ⁴⁴ .
PROG	FUT	DP
Layer A	Layer B	Layer B
- 3P.SG INT.how say also 1P.SG food eat

‘Whatever he says, I shall be eating.’

3. The definition of layers

In a sample of 50 languages, Bybee (1985a:33-35; 1985b:25-26) counted the pairwise order of aspect, tense and mood inflections. She argued for a cross-linguistic ordering of ASPECT<TENSE<MOOD in spite of the low number of attested pairs.

Table 3: Pairwise order of affixes in Bybee’s sample of 50 languages

2 nd Affix			
	Aspect	Tense	Mood
1 st Affix			
Aspect	---	8/18	10/23
Tense	0/18	---	9/21
Mood	0/23	1/21	---

Bybee explained these figures by a relevance principle:

“A meaning element is relevant to another meaning element if the semantic content of the first directly affects or modifies the content of the latter” (1985a:13).

As she treats aspect, tense and mood as monolithic concepts, it is unclear how the pairwise ordering was determined.³ The resulting generalizations are doubtful and make wrong predictions in the case of the Yi languages.

³ There are for example three types of aspects: *phasal aspect* (inchoative, completive), *viewpoint aspect* (perfective, imperfective), *quantificational aspect* (experiential, habitual). Quantificational aspect seems to be as relevant to the verb as tense.

- Liangshan Nuosu (Tibeto-Burman, China)
- (18) a. $ts^{h_1}_{33}$ $i^{44}_{ko_{33}}$ bo^{33} $t\check{c}^{h_1}_{33}$ la^{33} .
3P.SG home go WANT COME
MOOD ASPECT Start of an attitude
MOOD < ASPECT
'He begins to want to go home.'
- b. mu^{33} $t\check{c}\check{\theta}^{33}$ a^{44} $z\check{\theta}^{33}$ la^{33} $t\check{c}^{h_1}_{33}$.
name of man big COME WANT
ASPECT MOOD Attitude about the start
ASPECT < MOOD
'Mudje wants to become big.'
- Yongren Lolo (Tibeto-Burman, China)
- (19) a. $z\check{\theta}^{21}$ $\eta\check{\theta}^{55}$ dzo^{21} $t\check{s}^{h_1}_{33}$ $\chi\check{\theta}^{21}be^{33}$.
3P.SG fish eat CAN-2 FUT
MOOD TENSE Future external permission of event
MOOD < TENSE
'He will be allowed to eat fish.'
- b. * $z\check{\theta}^{21}$ $\eta\check{\theta}^{55}$ dzo^{21} $\chi\check{\theta}^{21}be^{33}$ $t\check{s}^{h_1}_{33}$.
3P.SG fish eat FUT CAN-2
TENSE MOOD External permission of future event
TENSE < MOOD
Intended meaning: 'He is allowed to eat fish in the future.'

Two functional grammar theories use a detailed classification of aspect, tense, mood concepts into cognitive layers that make correct predictions: *Role & Reference Grammar* (VanValin & LaPolla 1997) and *Theory of Functional Grammar* (Hengeveld 1989; Dik & Hengeveld 1997).⁴

I shall focus on TFG because affix order played an important role in its development (especially Hengeveld 1989). TFG distinguishes between *representational* (Bühler 1934) and *interpersonal* (Halliday 1970) affixes. Representational affixes encode a clause as real or hypothetical. Interpersonal affixes encode the clause as speech act with a message for the addressee. Only if a clause fully represents a situation, is it possible to use it for communicating a message. TFG predicts that interpersonal affixes are more distant to the verb stem than representational affixes.

In the representational layer, *predicate* affixes code internal properties of an event such as phases, perspectives or mental dispositions of participants. *Predication* affixes anchor an event in an external world in terms of its time and frequency of occurrence or in terms of obligation and permission. The internal/external distinction corresponds to a canonical order: predicate affixes < predication affixes. In the interpersonal layer, *proposition* affixes convey attitudes or information sources of the speaker (self-oriented), while *illocutionary* affixes encode the speech act type (other-oriented).

Dik & Hengeveld (1997:50) propose that the human mind encodes an event as utterance in successive cognitive layers ordered by the packaging of grammatical concepts.

- (20) A (Predicate) < B (Predication) < C (Proposition) < D (Illocution)

⁴ Generative models such as *lexicalism* (Chomsky, 1970; Anderson, 1992) and *distributed morphology* (Halle & Marantz, 1993) do not provide a systemic integration of affix concepts. Wunderlich & Fabri (1995: 246-247) propose a hierarchy of functional categories that is similar to Bybee's. It is conceived as a component of the generative theory of word formation and empirically justified only with German data. Formal semantic approaches such as *Davidsonian event semantics* or *Montegovian possible world semantics* analyze affix concepts individually not in a system. (Davidsonian event semantics models aspectual notions, while Montegovian possible world semantics formalizes modality.) Cinque (1999) proposes classes of "lower" and "higher" adverbial phrases but his conclusions are derived from adverbial phrases not affixes.

The following table classifies the concepts of the Yi enclitics into the cognitive layers of TFG. The two left columns are adapted from an overview presented by Hengeveld (1989: 131-132).

Table 4: TFG-layered clitic categories of the Yi languages

Layers	Groups	Yi clitic category	Historical meaning	Glosses	
A. Predicate specify additional properties of bare predication	Group 1 (Phase) focus on a phase in event	RISE	‘rise’	Starting phase (“start”)	
		COME	‘come’	Inchoative phase (“become”)	
		DESCEND	‘descend’	Continuative phase (“go down”)	
		EXIT	‘exit’	Ending phase (“stop”)	
		GET	‘get, obtain’	Resultative (“succeed”)	
		FOL	‘follow’	Resultative (“up”)	
	Group 2 (Aspect I) provide perspective on event	SEND	‘send, scatter’	Resultative (“away”)	
		IMP	---	Imperfective	
		AMP	‘put’	Ambipresentive (“-ing”, “finished”)	
		PROG	variable	Progressive (“in process of”)	
	Group 3 (Modality I) express mental disposition of subject	EXH-1	‘point to’	Exhaustive for object (“completely”)	
		LIKE	---	Subject-liking	
		WANT	---	Subject-wanting	
		CAN-1	---	Subject-ability	
	Group 4 (Negation I) state absence of property/event	TRY	‘look’	Subject-trial	
		NEG-1	---	Predicate negation	
B. Predication anchors predication in space and time	Group 5 (Tense) express time of occurrence	(IM)FUT	‘say, follow’	(Immediate) Future tense	
		STP	‘put, come’	Stative perfect	
		DP	---	Dynamic perfect	
	Group 6 (Aspect II) specify frequency of occurrence	EXH-2	‘point to’	Exhaustive aspect for subject (“all”)	
		EXP	‘pass’	Experiential aspect (“once before”)	
		PER	‘attached to’	Periodical aspect (“once in while”)	
		HAB	variable	Habitual aspect (“usually”)	
	Group 7 (Modality II) state external obligation, permission, prohibition	MUST	---	External strong obligation	
		SHOULD	---	External weak obligation	
	Group 8 (Negation II) state absence of occurrence	CAN-2	---	External permission	
		NEG-2	---	Predication negation	
	C. Proposition capture speaker attitude towards proposition	Group 9 (Modality III) commit speaker to proposition	NESS	variable	Speaker-judgement of necessity
POSS			variable	Speaker-judgement of possibility	
FEAR			‘fear’	Speaker-attitude of fear	
REGR			variable	Speaker-attitude of regret	
WISH			‘wish’	Speaker-attitude of wish	
Group 10 (Evidentiality) indicate source of proposition		QUOT	‘say’	Direct/indirect quotation	
Group 11 (Negation III) state absence of occurrence		NEG-3	---	Negation of speaker-judgement	
D. Illocution specify illocutionary force		Group 12 (Illocution) indicate type of speech act	ALT	---	Alternative question
			SUG	---	Speaker-request for feedback
			REPL	---	Speaker-indication of feedback
			IMPT	---	Imperative order

This classification of Yi enclitics defines a motivated scopal paradigm, which is illustrated with examples in §3.1 and §3.2. Most clitics in Table 4 are grammaticalized verbs. The analysis of a few individual clitics was published previously (Gerner 2002a, 2002b, 2004, 2007, 2009, 2013). More than

three enclitics are rarely stacked after each other for overload of complex meanings. The following examples with four enclitics sound awkward to native speakers but consist of morphemes that are compatible as pairs.

Liangshan Nuosu (Sichuan Province, China)

- (21) k^ha⁴⁴di³³ ni³³ zε²¹zɔ⁵⁵ vu²¹ n̩tɔ³³ sa⁵⁵ o⁴⁴ tɕo⁴⁴dzi²¹.
 every QUANT.all potato sell PROG EXH-2 DP POSS
Layer A Layer B Layer B Layer C

‘Everyone might have been in the process of selling potato.’

Weining Neasu (Guizhou Province, China)

- (22) ɕɪ²¹ dzu³³ χo¹³ ɲu⁵⁵ lo³³ le⁵⁵.
 3P.SG eat SEND EXP REGR REPL
Layer A Layer B Layer C Layer D

‘[Let me reply you:] he has got used to it unfortunately.’

Yongren Lolo (Yunnan Province, China)

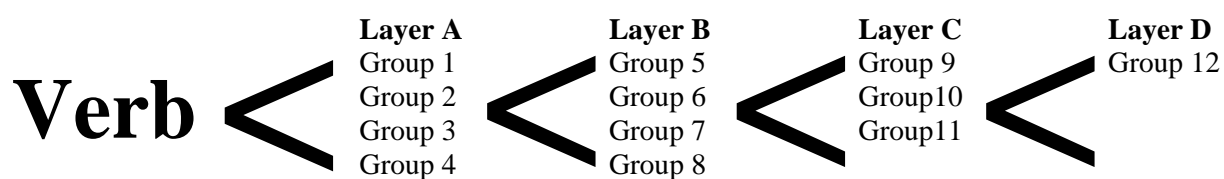
- (23) zɔ²¹ zε³³fu³³ sɔ³³ lə²¹ dzo²¹ t^hu³³ dzo³³ lu³³ ɔ⁴⁴.
 3P.SG egg NUM.3 CL eat EXIT EXP STP DP
Layer A Layer B Layer B Layer B

‘It is the case that he just experienced finishing eating three eggs.’

The enclitic verb paradigm is endocentric. Morphemes of different categories can only co-occur in monotone increasing layer order (§3.1). The paradigm is recursive. Morphemes of the same layer can be staked after each other (§3.2). Apparent exceptions always fall back into the previous cases (§3.3) or, in the case of the negation clitics, conform to universal tendencies (§3.4).

3.1 Enclitic order across layers

If XY is a possible string (X is in the scope of Y), then X cannot be of a higher layer than Y. This is Hengeveld’s *Hypothesis 1* (1989:141). Conversely, if X belongs to a lower layer than Y, then XY is not necessarily a possible string (X is not necessarily in the scope of Y).



The data are based on systematic fieldwork in four Yi languages, and unsystematic elicitation in several other Yi languages.

Liangshan Nuosu (Sichuan Province, China)

- (24) a. t^hi⁵⁵ ko³³ ta³³ m̩u³³ a⁴⁴ni³³ gu³³ ts^hi³³ ʂu²¹ yu⁴⁴ ndzo²¹ tɔ⁴⁴di²¹.
 here LOC COV mushroom much CL 3P.SG search GET EXP POSS
Layer A Layer B Layer C

‘It might have been here that he once found many mushrooms.’

b.	ɔ ³³ nɛ ³³	ts ^h ɿ ³³	nɛ ³³	sa ⁵⁵	o ⁴⁴	di ⁴⁴ .
	hair	3P.SG	cut	EXH-1	DP	QUOT
				Layer A	Layer B	Layer C

‘It is said that he cut all the hair.’

c.	a ³³ ma ⁵⁵	i ²¹ mo ²¹	go ⁵⁵	ndi ⁵⁵	to ⁴⁴ di ²¹	da ²¹ ?
	mother	belly	ache	PER	POSS	ALT
				Layer B	Layer C	Layer D

‘Is it possible that Mom sometimes has stomachache?’

Weining Neasu (Guizhou Province, China)

(25)	ɕɿ ²¹	sɿ ³³	χo ¹³	he ³³	le ⁵⁵ .
	3P.SG	run	SEND	FUT	REPL
			Layer A	Layer B	Layer D

‘[Let me reply you:] He will complete [his paths].’

The permutation of enclitics from different layers is prohibited, as illustrated in (26b) for Neasu.

Weining Neasu (Guizhou Province, China)

(26) a.	yo ³³	ɕɿ ²¹ χə ⁵⁵	ts ^h ɿ ⁵⁵	lə ²¹	lo ³³	sa ³³ .
	get	3P.PL	COV.partake	go	REGR	SUG
					Layer C	Layer D

‘I regret but I couldn’t go with them, ok?’

b.	*ɕɿ ²¹	t ^h ɿ ³³	ma ⁵⁵	dzɿ ²¹	sa ³³	lo ³³ .
	3P.SG	here	NEG-1	live	SUG	REGR
					Layer D	Layer C

Intended meaning: ‘Unfortunately, he doesn’t live here, ok?’

3.2 Enclitic order within layers

If XY and YX are possible strings (X is in the scope of Y and Y is in the scope of X), then X and Y must belong to the same layer. The converse is not true. The Yi languages differ in how extensively they license variable scope. Lolo (Yunnan) is more flexible, Nuosu (Sichuan) is more restrictive and Neasu (Guizhou) is rigid with one exception.

Yongren Lolo (Yunnan Province, China)

Layer A

(27) a.	zɿ ²¹	au ⁵⁵ yo ²¹	tɕ ^h ɛ ³³	du ³³	ku ⁵⁵ .
	3P.SG	Lolo song	sing	RISE	CAN-1
				Group 1	Group 3

‘She can start to sing the Lolo love song.’

b.	zɿ ²¹	zə ³³	ku ⁵⁵	du ³³ .
	3P.SG	go, walk	CAN-1	RISE
			Group 3	Group 1

‘She can start to sing the Lolo love song.’

In (28), the permuted order is understood to have emphatic meaning.

- Liangshan Nuosu (Sichuan Province, China) **Layer A**
- (28) a. t^hu²¹ʒ³³ ts^hi³³ dzi⁵⁵ ma⁵⁵ ko⁴⁴ʂa³³ sa⁵⁵.
 book, lesson DEM.PROX CL teach SEND EXH-1
Group 1 Group 2
- ‘Teach this lesson completely.’
- b. t^hu²¹ʒ³³ ts^hi³³ dzi⁵⁵ ma⁵⁵ sa⁵⁵ ko⁴⁴ʂa³³!
 book, lesson DEM.PROX CL teach EXH-1 SEND
Group 2 Group 1
- ‘Teach this lesson until the very end!’ [Strong emphasis]

Several Yi languages have two perfect clitics (Gerner 2002b): *stative perfect* (‘it is the case that’) and *dynamic perfect* (‘have’+participle). In Lolo they can be permuted with a difference in meaning.

- Yongren Lolo (Yunnan Province, China) **Layer B**
- (29) a. su⁵⁵bə³³ mo³³ lo³³lo³³ŋo³³ va³³ lu³³ ɔ⁴⁴.
 book ART Lolo language write STP DP
Group 5 Group 5
- ‘It is the case that this book was written in Lolo.’ (Past event with current relevance)
- b. su⁵⁵bə³³ mo³³ lo³³lo³³ŋo³³ va³³ ɔ⁴⁴ lu³³.
 book ART Lolo language write DP STP
Group 5 Group 5
- ‘It is the case that this book has just been written in Lolo.’ (Recent event with current relevance)

In Nuosu but no other Yi language, the experiential and habitual aspects can co-occur in both orders in spite of their contrary aspectual values. Both are grammaticalized verbs: ‘pass’ (EXP) and ‘seek’ (HAB). The verbal meaning ‘seek’ is still alive.

- Liangshan Nuosu (Sichuan Province, China) **Layer B**
- (30) a. i⁵⁵tsi³³ m³³ ko³³, ʒə³³mo²¹ ko³³ hu³³ ŋi⁵⁵ bo³³ ndzo⁴⁴ ko³³ʂə⁴⁴.
 young do SENT.TOP river LOC fish fish go EXP HAB
Group 6 Group 6
- ‘When I was young, I often experienced going fishing at the river.’
- b. i⁵⁵tsi³³ m³³ ko³³, ʒə³³mo²¹ ko³³ hu³³ ŋi⁵⁵ bo³³ ko³³ʂə⁴⁴ ndzo⁴⁴.
 young do SENT.TOP river LOC fish fish go HAB EXP
Group 6 Group 6
- ‘When I was young, I once was used to going fishing at the river.’

Layer C respectively Layer D enclitics rarely co-occur and the Yi languages never licence flexible clitic order.

- Weining Neasu (Guizhou Province, China) **Layer C**
- (31) a. ɕi²¹ dʒa³³vu³³ lo³³ ŋɣ³³ndzɔ²¹.
 3P.SG catch cold REGR POSS
Group 9 Group 9
- ‘It might be too bad if he caught a cold.’

- b. *tʂ^hu³³ ga⁵⁵yo⁵⁵ te¹³ ηɣ³³ndzɔ²¹ lo³³.
 car there park POSS REGR
Group 9 Group 9

Intended meaning: ‘It is too bad if the car is parking there.’

Liangshan Nuosu (Sichuan Province, China)

Layer D

- (32) a. ni⁵⁵ tsi⁵⁵tʂe³³ dzu³³ hu⁴⁴ ha⁴⁴ ma²¹!
 2P.SG REFL eat TRY SUG IMP
Group 11 Group 11

‘Try to eat yourself!’ [Gentle summon]

- b. *ni⁵⁵ tsi⁵⁵tʂe³³ dzu³³ hu⁴⁴ ma²¹ ha⁴⁴!
 2P.SG REFL eat TRY IMP SUG
Group 11 Group 11

Intended meaning: ‘Try to eat yourself!’

3.3 Apparent exceptions

There are apparent counterexamples for the cognitive clitic order. Most contradictions can be explained by that fact that one enclitic is polysemous and belongs to two layers. For example, the Nuosu clitic *sa*⁵⁵ (Gerner 2007) operates at layer A and B. It scopes over the direct object in quantized events at layer A, as in (33a), and over the external subject at layer B, as in (33b).

Liangshan Nuosu (Sichuan Province, China)

Layers A / B

- (33) a. dza³³ a⁴⁴ʈ³³ ts^hi⁴⁴ tʂu²¹ ηa³³ dzu³³ sa⁵⁵ t^ha⁵⁵ʕi³³.
 food big DEM.PROX bowl 1P.SG eat EXH-1 SHOULD
Group 2 Group 7

‘I should completely eat up this big bowl of rice.’

- b. ts^ho²¹yo⁴⁴ k^ha⁴⁴di³³ ni³³ k^ha³³ba³³ yu²¹ t^ha⁵⁵ʕi³³ sa⁵⁵.
 3P.PL who also present get SHOULD EXH-2
Group 7 Group 6

‘They all should get a present.’

Most enclitics are grammaticalized verbs. Sometimes, the verbal meaning survives and coexists with the grammaticalized clitic. In Lolo (Yunnan), the habitual aspect marker *χu*³³ coexists with its earlier matrix verb meaning *familiar with*. This ambiguity explains the existence of two orders.

Yongren Lolo (Yunnan Province, China)

Layers A / B

- (34) a. ηo³³ lo²¹ti⁵⁵su³³ dzo²¹ χu³³ do⁵⁵.
 1P.SG peanuts eat familiar with (HAB) AMP
Verb (Group 6) Group 2

‘I am in the process of getting used to eating peanuts.’

- b. ηo³³ xə²¹ do⁵⁵ χu³³.
 1P.SG stand AMP HAB
Group 2 Group 6

‘I am standing [on my feet] and I am used to it.’

In addition to polysemous clitics, there are several homophonous clitics with two unrelated meanings. The Nuosu morpheme **mi**⁴⁴ functions as future clitic at layer B and as illocutionary clitic at layer D.

- Layers B / D**
- (35) a. Liangshan Nuosu (Sichuan Province, China)
- | | | | | | | | |
|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|-------------------|
| nɯ ³³ | ɕi ⁴⁴ | si ²¹ | su ⁵⁵ | ndzɯ ³³ | sɯ ³³ | mi ⁴⁴ | ha ^{44?} |
| 2P.SG | what | COV.take | others | money | return | FUT | SUG |
| | | | | | | Group 5 | Group 11 |
- ‘[Please tell me:] How will you settle your debts?’
- b.
- | | | | | | | | | | | |
|-----------------------------------|--------------------------------|------------------|------------------|------------------|------------------|-----------------|---|------------------|------------------|-------------------|
| du ²¹ bo ³³ | k ^h u ³³ | vo ⁵⁵ | du ²¹ | ko ³³ | hu ⁴⁴ | ʒ ³³ | k ^h a ⁴⁴ di ³³ | ŋu ³³ | ha ⁴⁴ | mi ^{44?} |
| outside | dog | bark | rise | LOC | see | go | who | COP | SUG | SUG |
| | | | | | | | | | Group 11 | Group 11 |
- ‘There is a dog barking outside; [please tell me:] who is gonna have a look?’

In the same vein, the clitic **ma**²¹ in Neasu (Guizhou) has two independent meanings, as illocutionary clitic and as negation clitic.

- Layers B / D**
- (36) a. Weining Neasu (Guizhou Province, China)
- | | | | | | |
|------------------|---------------------------------|-------------------|------------------|------------------|-------------------|
| na ²¹ | tɕ ^h i ⁵⁵ | ndi ³³ | di ¹³ | zɣ ⁵⁵ | ma ^{21!} |
| 2P.SG | put on | shoe | wear | PROG | IMPT |
| | | | | Group 2 | Group 11 |
- ‘Put your shoes on and wear them!’
- a.
- | | | | | | |
|------------------|---------------------------------|-------------------|------------------|------------------|--------------------|
| na ²¹ | tɕ ^h i ⁵⁵ | ndi ³³ | di ¹³ | ma ²¹ | zɣ ⁵⁵ . |
| 2P.SG | put on | shoe | wear | NEG-1 | PROG |
| | | | | Group 4 | Group 2 |
- ‘You are not wearing your shoes.’

The clitic **ɔ**²¹ / **ɔ**⁴⁴ in Lolo (Yunnan) is nearly homophonous. In the high tone it conveys the meaning of dynamic perfect (layer B) and in the low tone it is an illocutionary clitic (layer D).

- Layers B / C / D**
- (37) a. Yongren Lolo (Yunnan Province, China)
- | | | | | | | |
|------------------|----------------------------------|---------------------------------|------------------|--------------------------------|-----------------|--------------------|
| zɔ ²¹ | a ²¹ ni ³³ | ts ^h ɔ ³³ | ʂo ³³ | p ^h a ²¹ | ɔ ⁴⁴ | χa ³³ . |
| 3P.SG | last year | person | poor | become | DP | FEAR |
| | | | | | Group 5 | Group 9 |
- ‘I am afraid that he became impoverished last year.’
- b.
- | | | | | | | |
|------------------|------------------|-----------------------------------|---------------------------------|------------------|------------------|-------------------|
| zɔ ²¹ | bɛ ³³ | lɛ ²¹ ni ³³ | t ^h ie ²¹ | da ³³ | χa ³³ | ɔ ²¹ . |
| 3P.SG | self | finger | GOAL | cut | FEAR | REPL |
| | | | | | Group 9 | Group 11 |
- ‘[In order to reply to you:] I am afraid that he cut his finger.’

3.4 The negation clitics

All enclitics scope over material to the left but negation clitics scope over the element to their right. The enclitic **ma**²¹ in (38) can be prefixed to the predicate or to other clitics in layer A, B, and C. It negates the concept of the predicate or of the clitic to which it is prefixed.

Luoping Nase (Yunnan Province, China)

- (38) a. tʂu^{21} $\eta\text{g}^{\text{fi}}\text{o}^{21}\text{ni}^{33}$ ma^{21} lie^{21}
 3P.SG tomorrow NEG come

‘He won’t come tomorrow.’

- b. tʂu^{21} $\eta\text{g}^{\text{fi}}\text{o}^{21}\text{ni}^{33}$ lie^{21} ma^{21} ku^{33}
 3P.SG tomorrow come NEG-1 CAN-1
Layer A Layer A

‘He won’t be able to come tomorrow.’

- c. tʂu^{21} $\eta\text{g}^{\text{fi}}\text{o}^{21}\text{ni}^{33}$ lie^{21} ku^{33} ma^{21} di^{55}
 3P.SG tomorrow come CAN-1 NEG-3 NESS
Layer A Layer C Layer C

‘It is not certain that he’ll be able to come tomorrow.’

The rightward scope of negation clitics is the sole problematic phenomenon for the otherwise regular scopal paradigms. Negation clitics satisfy the adjacency property (§2.4), but violate the endocentric principle (§2.1) which predicts that derivations like in (39)

- (39) Scopal word derivation: $[[[\text{VERB} \rightarrow \text{A}] \rightarrow \text{C}] \rightarrow \text{C}]$
 $[[[\text{VERB} \rightarrow \text{CAN-1}] \rightarrow \text{NESS}] \rightarrow \text{NEG-3}]$

are well-formed words, which they are not, as illustrated in (40) for Luoping Nase.

Luoping Nase (Yunnan Province, China)

- (40) * tʂu^{21} $\eta\text{g}^{\text{fi}}\text{o}^{21}\text{ni}^{33}$ lie^{21} ku^{33} di^{55} ma^{21}
 3P.SG tomorrow come CAN-1 NESS NEG-3
Layer A Layer C Layer C

Intended meaning: ‘He won’t be necessarily able to come tomorrow.’

Bybee (1985: 177-178) points out the preference for prefixing negation expression in the world’s languages which is motivated by the way the human brain comprehends words. If the most significant information (such as negation) occurs at the beginning of the word, language comprehension is maximally effective.

4. Compositionality gaps

4.1 Opaque compounds

Several compound enclitics, resulting from a process of grammaticalization, exhibit opaque meaning. As these clitics are noncompositional in a scopal paradigm, they contradict the prevalent assumption, pointed out in the introduction, that scopal and compositional paradigms are identical. Table 5 displays the group and function of seven compound clitics in three Yi languages. None of these clitics has a compositional make-up.

Table 5: Opaque compound clitics

Yi	Compound Clitic	Compound Function	Group 1 NEG FOL	Group 2 IMP PROG	Group 5 FUT DP	Group 11 IMPT	out of use
Nuosu	mi ⁴⁴ ku ³³ o ⁴⁴	Group 5 : Immediate Future		ku ³³	mi ⁴⁴	o ⁴⁴	
	o ⁴⁴ ma ²¹	Group 9 : Regret (recent past)			o ⁴⁴	ma ²¹	
	o ⁴⁴ mo ²¹	Group 9 : Regret (distant past)			o ⁴⁴	mo ³³	
	o ⁴⁴ li ²¹	Group 9 : Regret (loss/fallout)			o ⁴⁴		li ²¹
Nesu	wɔ ³³	Group 5 : Perfect (positive)	ma ²¹	ɔ ³³			
	wɔ ³³	Group 5 : Perfect (negated)	ma ²¹	ɔ ³³			
Lolo	ŋ ²¹ me ³³	Group 5 : Future Tense	ŋ ²¹	me ³³			

For the first compound clitic in Nuosu, the compositional order would be **ku³³mi⁴⁴o⁴⁴** (current relevance of a future progressive event). This order also exists and is illustrated above in (17b). In the opaque clitic, the two clitics **ku³³** and **mi⁴⁴** underwent a process of metathesis and were semantically reanalyzed by native speakers with a nontransparent meaning (immediate future).

Liangshan Nuosu (Sichuan Province, China)

- (41) a. ηa^{55} $\text{vi}^{55}\text{vu}^{33}$ $\text{ha}^{33}\text{pi}^{55}$ dz^{33} ku^{33}
 1P.SG.PSS brother vegetables plant PROG
Group 2
 ‘My brother is planting vegetables.’
- b. ηa^{33} $\text{ɕə}^{21}\text{mo}^{21}$ ɕə^{21} mi^{44}
 1P.SG wife marry FUT
Group 5
 ‘I will get married.’
- c. $\text{a}^{55}\eta\text{o}^{21}$ $\text{ts}^{\text{h}}\text{u}^{33}\text{t}^{\text{h}}\text{u}^{33}$ so^{44} tɕi^{33} ɬu^{33} o^{44}
 female name dish NUM.3 CL cook DP
Group 5
 ‘Anyo has cooked three dishes.’
- d. $\text{ho}^{33}\text{pu}^{33}$ ko^{33} $\text{dza}^{33}\text{bo}^{33}$ $\text{zə}^{33}\text{dz}^{33}$ hi^{55} $\text{mi}^{44}\text{ku}^{33}\text{o}^{44}$
 mountain LOC crops harvest CAN-2 IMFUT
Group 5
 ‘The crops on the mountain can be harvested very soon.’

The Nuosu regret clitic **o⁴⁴ma²¹** encodes an expressive illocutionary force. It is composed of the perfect clitic **o⁴⁴** and the imperative clitic **ma²¹**, but is unrelated to these two functions.

Liangshan Nuosu (Sichuan Province, China)

- (42) a. ηa^{33} vi^{33} bo^{33} mo^{33} nu^{33} $\text{ɕə}^{44}\text{nu}^{33}$ $\text{ma}^{21}!$
 1P.SG buy go IMP 2P.SG rest IMPT
Group 11
 ‘I will go shopping. Have a rest here!’
- b. zə^{33} $\text{la}^{55}\text{mo}^{33}$ ɕi^{55} si^{33} $\text{o}^{44}\text{ma}^{21}$
 sheep wolf bite die REGR
Group 9
 ‘Alas, the sheep was bitten to death by the wolf.’

The clitic **li**²¹ has lost its use in Modern Nuosu but survived in the compound **o**⁴⁴**li**²¹. Illustrations are skipped here. In Nesu, there are two perfect clitics, **wɔ**³³ and **wo**³³. The clitic **wɔ**³³ marks verbs of positive polarity while **wo**³³ only occurs after negated verbs. Both clitics are illustrated in (43)-(44). They result from a process of fusion with the clitic **ɔ**³³ which in separate contexts marks dynamic verbs and stative adjectives for imperfective aspect, as illustrated in (45).

Gejiu Nesu (Yunnan Province, China)

- (43) a. $h\tilde{i}^{21}$ $p\text{ə}^{33}$ $w\text{ɔ}^{33}$.
house explode DP
Group 2
'The house has exploded.'
- b. * $h\tilde{i}^{21}$ ma^{21} $p\text{ə}^{33}$ $w\text{ɔ}^{33}$.
house NEG explode DP
Group 2
'The house hasn't exploded.'
- (44) a. $k\text{ə}^{55}$ $g\text{o}^{33}$ $g\text{ə}^{21}$ ma^{21} le^{33} $w\text{ɔ}^{33}$.
3P.SG Gejiu NEG-1 come DP
Group 2
'He hasn't come to Gejiu.'
- b. * $k\text{ə}^{55}$ $g\text{o}^{33}$ $g\text{ə}^{21}$ le^{33} $w\text{ɔ}^{33}$.
3P.SG Gejiu come DP
Group 2
'He has come to Gejiu.'
- (45) a. $k\text{ə}^{55}$ a^{55} ηq^{33} zu^{21} $t\text{q}^{21}$ ɔ^{33} .
3P.SG fish take go IMP
Group 2
'He is taking away a fish.'
- b. a^{55} ηq^{33} ə^{55} $ts^h\text{o}^{55}$ $ts^h\text{i}^{21}$ ɔ^{33} .
fish DEM CL smelly IMP
Group 2
'This fish is smelly right now.'

The imperfective aspect clitic **ɔ**³³ fused with the negation clitic **ma**²¹ and the compound **wɔ**³³ was reanalyzed with the nontransparent meaning of perfect clitic. The reintroduction of the negation particle **ma**²¹ before the verb imposed a sound process of distant progressive dissimilation (**wɔ**³³ → **wo**³³) in order to distinguish it from the clitic **wɔ**³³ when it is not preceded by the negation clitic **ma**²¹. This development explains the selectional restrictions of **wɔ**³³ and **wo**³³ noted in (43b) and (44b).

- (46) Fusion Context Distant Progressive Dissimilation
- $V + ma^{21} + \text{ɔ}^{33} \rightarrow V + w\text{ɔ}^{33}$ Positive Polarity: $V + w\text{ɔ}^{33}$
- Negative Polarity: $ma^{21} + V + w\text{ɔ}^{33} \rightarrow ma^{21} + V + wo^{33}$

The Lolo future tense clitic **ɲ**²¹**me**³³ is composed of the negation clitic **ɲ**²¹ and the resultative clitic **me**³³. This compound is nontransparent but can be explained by a process of semantic reanalysis. Originally **ɲ**²¹**me**³³ was used to negate the result of an action. The meaning of negated result was reanalyzed as delayed result, then as delayed action and finally as future tense (Gerner 2013: 185-186).

(47) Yongren Lolo (Yunnan Province, China)

- a. $z\text{ɔ}^{21}$ ɕe^{55} su^{33} η^{21} sa^{55} .
3P.SG Chinese (Han) written language NEG know
'He doesn't know written Chinese.'
- b. $t\text{ʂa}^{55}$ $p^h\text{a}^{33}$ mo^{33} ne^{33} di^{33} $z\text{o}^{33}$ ga^{21} me^{33} ɔ^{44} .
female monkey young girl chase FOL DP
Group 1
'The monkey chased and caught the girls.'
- c. $b\text{ɔ}^{33}$ lu^{21} su^{55} $dz\text{ɔ}^{33}$ η^{21} me^{33} .
male name book study FUT
Group 2
'Bolo will attend school.'

4.2 Possible but unattested scopes

In every Yi language we can find a number of clitic pairs X and Y such that

- XY exists but YX does not exist;
- Grammar concept of XY and grammar concept of YX are both conceivable.

To the extent that these pairs exist in the language, the whole paradigm becomes noncompositional. In the Yi languages, we can find these pairs of morphemes at layer, A, B, C.

- Liangshan Nuosu (Yunnan Province, China) **Layers A**
- (48) a. ηa^{33} si^{55} χu^{33} su^{33} m^{33} ku^{55} $t\check{c}i^{h:33}$.
 1P.SG matter, thing good NOM do CAN-1 WANT
Group 2 Group 3 Desire of ability
- ‘I want to be able to do good things.’
- b. * ηa^{33} si^{55} χu^{33} su^{33} m^{33} $t\check{c}i^{h:33}$ ku^{55} .
 1P.SG matter, thing good NOM do WANT CAN-1
Group 2 Group 3 Ability to desire
- Intended meaning: ‘I am able to want to do good things.’
- Liangshan Nuosu (Sichuan Province, China) **Layers B**
- (49) a. $a^{21}he^{55}$ $ts^h o^{33}$ $z\check{e}^{33}$ $ts^h i^{44}$ $t\check{c}i^{33}$ ko^{33} hu^{33} ηgo^{55} hi^{55} $ndzo^{44}$.
 before people river DEM CL LOC fish catch CAN-2 EXP
Group 7 Group 6 Occurrence of permission
- ‘Before people were once allowed to fish in this river.’
- b. * $a^{21}he^{55}$ $ts^h o^{33}$ $z\check{e}^{33}$ $ts^h i^{44}$ $t\check{c}i^{33}$ ko^{33} hu^{33} ηgo^{55} $ndzo^{44}$ hi^{55} .
 before people river DEM CL LOC fish catch EXP CAN-2
Group 6 Group 7 Permission of occurrence
- Intended meaning: ‘Before people were allowed to fish once (experience fishing) in this river.’
- Yongren Lolo (Yunnan Province, China) **Layers C**
- (50) a. $z\check{o}^{21}$ $d\check{o}^{33}$ xau^{21} $z\check{i}^{21}$ \check{o}^{44} du^{33} $z\check{o}^{33}$.
 3P.SG drink RES drunk DP POSS QUOT
GROUP 9 GROUP 10 Report of possible situation
- ‘It is said that he might have got drunk.’
- b. * $z\check{o}^{21}$ $d\check{o}^{33}$ xau^{21} $z\check{i}^{21}$ \check{o}^{44} $z\check{o}^{33}$ du^{33} .
 3P.SG drink RES drunk DP QUOT POSS
GROUP 10 GROUP 9 Possible report of situation
- Intended meaning: ‘It might be said that he got drunk.’

5. Conclusion

In this paper, I have demonstrated that scopal paradigms need not to be compositional, contrary to widespread assumptions voiced in the literature. Scopal paradigms are distinguished from templatic

paradigms through opposite behavior to *headedness*, *adjacency*, *lookahead* and *zero morphemes*. The Yi languages (Tibeto-Burman: China) exhibit scopal paradigms whose morpheme categories can be defined as cognitive layers. In spite of this quite regular picture, the Yi paradigms are full of compositionality gaps such as the existence of opaque pairs of morphemes. Scopal paradigms therefore need not be compositional.

On the other hand, many scholars implicitly assume that templatic paradigms are *noncompositional*. Future studies will likely lead to a revision of this assumption as well, by demonstrating that templatic paradigms may be relatively compositional.

List of abbreviations

1P.SG	First person singular	LOC	Location
2P.SG	Second person singular	MID	Middle voice
3P.DU	Third person dual	MUST	Clitic external strong obligation
3P.PL	Third person plural	SHOULD	Clitic external weak obligation
3P.SG	Third person singular	NEG	Preverbal negation
ACC	Accusative	NEG-1	Predicate Negation
ALT	Alternative Question	NEG-2	Predication Negation
AMP	Ambiperfective	NEG-3	Negation of speaker-judgement
ART	Article	NESS	Necessity
BEN	Benefactive	NOM	Nominative
CAN-1	Clitic subject ability	NP	Noun Phrase
CAN-2	External permission	NUM	Numeral
CL	Classifier	NUM.9	Numeral with its value
COME	Inchoative clitic from verb ‘come’	O	Object
COP	Copular	PC	Paucal
COV	Coverb	PER	Periodical aspect
COV.use	Coverb with verbal origin	POSS	Possibility
DEM	Demonstrative	PROG	Progressive Aspect
DESCEND	Phasal clitic from verb ‘descend’	PROX	Proximal
DIST	Distal	PSS	Possessive
DP	Dynamic perfect	PST	Past
EXH-1	Exhaustion clitic for object	QUANT	Quantifier
EXH-2	Exhaustion clitic for subject	QUOT	Quotative
EXIT	Phasal clitic from verb ‘exit’	REFL	Reflexive
EXP	Experiential aspect	REGR	Regret clitic
F	Female	REPL	Reply clitic
FEAR	Attitude clitic of fear	RES	Resultative
FOL	Resultative clitic from verb ‘follow’	RISE	Phasal clitic from verb ‘rise’
FUT	Future Tense	S	Subject
GET	Resultative clitic from verb ‘get’	SEND	Resultative clitic from verb ‘send’
GOAL	Role of Goal	SENT.TOP	Sentence topic
HAB	Habitual	SUG	Suggestive clitic
(IM)FUT	(Immediate) Future	STP	Stative perfect
IMP	Imperfective	TFG	Theory of Functional Grammar
IMPT	Imperative order	TRY	Clitic subject trial
INT	Interrogative	WANT	Buletic clitic
LIKE	Auxiliary clitic ‘like’	WISH	Attitude clitic of wish

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