Morphotactic dependencies in Yimas: a constructional approach

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I discuss the system of pronominal affixation in Yimas (Foley, 1991)[1] and its interaction with the marking of modality (negation/potential). I show in particular that the choice of exponence displays a morphotactic dependency between discontinuous markers and suggest that this property is best captured in a constructional approach to inflectional morphology.

1 Pronominal affixes in Yimas

In Yimas, core participants are typically cross-referenced by prefixes on the verb. As shown in Table 1, animates distinguish person and number (SG,DU,PL).[2]

PER	NUM	A	O	S
	SG	ka-	ŋa-	ama-
1	DU	ŋkra-	ŋkra-	kapa -
	PL	kay-	kra-	ipa-
	SG	n-	nan-	ma-
2	DU	ŋkran-	ŋkul-	kapwa-
	PL	nan-	kul-	ipwa-
	SG	n-	na-	na-
3	DU	mpi-	impa-	impa-
	PL	mpu-	pu-	pu-

Table 1: Paradigm of Yimas pronominal affixes (Foley, 1991, 200)

With animates, prefixes come in different shapes for S, A, and O arguments, although syncretism between S and O can be observed for third person markers. A slightly complicating factor is contributed by the fact that there is an alternation between A and S forms, depending on whether realisation is word-initial or not. E.g. initial 2nd and 3rd person markers for the A-argument assume the same shape of the corresponding S marker, whereas non-initial 1st person S markers assume the shape of the corresponding A marker. Yimas has an elaborate noun class system: thus, for inanimates, prefixes distinguish number and gender.

Relative order of the markers is governed by the person hierarchy and, amongst third person markers, by thematic obliqueness, with higher ranked participants expressed closer to the stem. As illustrated in (1–2), with two 3rd person core participants, the O argument is realised peripherally, followed by the marker for the A argument.

(1) pu- n- tay
3.PL.O 3.SG.A see
'He saw them.'

(2) na- mpu- tay
3.SG.O 3.PL.A see
'They saw him.'

Combination of a 3rd person participant (A or O) with a 1st or 2nd person participant (A or O) always has the 3rd person marker preceding the 1st or 2nd person marker, as shown in

[1] The data in this abstract are all taken from Foley's monograph.

[2] For reasons of space, I shall ignore the paucal marker, which is by-and-large orthogonal to the issues discussed here.

(3–4) for 1st person. Thus, depending on the inner marker, the outer marker's affiliation will change (note the neutralisation of A markers (to S) in initial position).

(3) pu- ka- tay
3.PL.O 1.SG.A see
'I saw them.'

(4) pu- ŋa- tay
3.PL.A 1.SG.O see
'They saw me.'

Inanimates, i.e. nouns in classes other than I and II appear to pattern alike, with 1st and 2nd person markers surfacing closer to the stem, irrespective of grammatical function.Still parallel, combinations of two 3rd person core arguments have the object marker precede the subject marker, as above.

Finally, I turn to combinations of 1st and 2nd person: if the hearer acts on the speaker, both participants are realised as discrete markers, with 1st person appearing closer to the stem, in accordance with the person hierarchy.

(5) ma- ŋa- tay
2.SG.A 1.SG.O see
'You (SG) see me.

If, however, the speaker acts on the hearer, we either find a portmanteau (1.A/2.SG.O), or else 1st person is realised by an independent pronoun.

1.1 Negative/potential

Exponents of negative/potential, which appear left-adjacent to the inner marker, block realisation of the outer prefix. What we find instead is realisation by means of suffixal number markers, distinct in shape from prefixal person or class markers. Most importantly, use of these suffixal markers is illicit outside the context of the negative and the potential.[3]

	SG	DU	PL
A/S	∅	-rm	-ump
O	-ak	-rm	-ump

Table 2: Suffixal number markers

For illustration, I present the positional template for Yimas, as distilled from Fowley's description:

(6)

-3	-2	-1	0	1	2	3
{2.A,3}	{1,2,3}	IO	stem	TNS	PC	
NEG/POT	{1,2,3}	IO	stem	TNS	PC	NUM/GEND

Which function the suffixal markers encode depends largely on how competition for the inner slot was resolved according to the person and thematic hierarchies: To start with, combination of 1st and 3rd person only witness a 1st person prefix (slot -2), with 3rd person being expressed by a number/gender suffix in slot 3, cf. (7–8).

(7) ta- ŋkra- tpul ∅
NEG 1.DU.O hit PRF SG.A
'He didn't hit us two.'

(8) ta- ŋkra- tpul -c -ak
NEG 1.DU.A hit PRF SG.O
'We two didn't hit him.'

[3]For reasons of space, I shall only document the negative. According to Foley (1991), however, the morphological distribution of the potential is fully identical.

Next, with two 3rd person participants, the A argument is realised prefixally, and the O argument suffixally.

(9) ta- mpu- tpul -c -rm
NEG 3.PL.A hit PRF DU
'They didn't hit those two.'

Combinations of 1st and 2nd person fall into two categories: with 1st person A arguments, there is only ever one exponent in the positive, and so the negative/potential do not differ from the general case in this respect. With 2nd person A and 1st person O arguments, however, the peripheral 2nd person marker is suppressed, giving rise to suffixal realisation. Since the suffixes do not distinguish person, we observe neutralisation between $3 > 1$ and $2 > 1$, cf. (10).

(10) ta- kra- tpul -c um
NEG 1.PL.O hit PRF PL
'You all/they didn't hit us.'

Finally, there are (at least) another two complicating factors in the negative/potential: with intransitives, number of the S argument is redundantly encoded for first person, as shown in (11).

(11) ta- kay- wa -r -um
NEG 1.PL.S go PRF PL
'We didn't go.'

Furthermore, with third person S arguments, number is equally expressed suffixally, yet the standard person/number prefix is *pu* in all numbers, a marker which otherwise encodes 3PL (cf. Table 1).

(12) ta- pu- wa -nan
NEG 3PL.S go NR PST
'He didn't go yesterday.'

(13) ta- pu- wa -na -rm
NEG 3PL.S go NR PST DU
'Those two didn't go yesterday.'

To summarise, Yimas confronts us with a four-fold dependency between exponents: preemption of outer prefixal person markers, dependence of suffixal number markers on prefixal modality markers, modality-based choice of inner person/number exponents, and assignment of suffix grammatical function based on prefixal competition.

1.2 Discussion

The Yimas data pose some clear challenges to most theories of inflection, however for quite different reasons: for morphemic theories the biggest obstacle is discontinuous extended exponence, as observed with number marking of S arguments in the negative or potential. For rule-based approaches, such as A-morphous Morphology (Anderson, 1992) or PFM (Stump, 2001), cascaded rule blocks do not provide for an easy expression of syntagmatic dependencies. The problem here is that combination of forms implies introduction by separate rule blocks, yet separation into rule blocks makes interaction difficult to state. Word-based approaches, such as Blevins (2005), finally, may not have problems with the syntagmatic dependence between exponents (cf. Harris, 2009), but they clearly have difficulty capturing reuse of exponents across different positions or functions.

Instead, I shall propose an analysis in terms of discontinuous morphotactic constructions that directly take into account the dependent nature of the suffixal markers, as well as competition for initial position, and will derive the affiliation with subject or object function on the basis of competition for prefixal realisation.

2 An analysis in terms of morphotactic constructions

The formal analysis I propose is couched within the framework of Information-based Morphology (Crysmann & Bonami, 2016), a constructional theory of inflectional morphology that organises rules associating *m* functions with *n* morphs into cross-cutting inheritance hierarchies. Most importantly for our purposes here, exponents introduced by any rule may be discontinuous, owing to the fact that position class information is a first class property of exponence, alongside shape.

For Yimas, I propose three dimensions: one for the prefixal exponents of core grammatical functions, one for the prefixal markers of negative and potential, and a third one for the suffixal number markers. What is crucial is that the partial rule descriptions in these three dimension are underspecified with respect to the maximal number of morphs, in order to permit combination of descriptions by means of unification.

Essentially, the rule descriptions for prefixal pronominal affixes only assert the shape and the prefixal position of the exponent, as a member of the list of morphs, without restricting how many morphs there will be in total. The description for suffixal markers defines the shape and position of the number suffixes, but furthermore requires the presence of two prefixal markers, in positions -3 and -2. Likewise, the constraints introducing the negative and potential in slot -3 will require a morph in slot -2, yet be open to combination with a suffixal marker in slot 3. Intersection of descriptions from the three domains will derive the patterns in the negative/potential. In order to account for the use of pronominal affixes outside the negative/potential construction, it is sufficient to provide a monomorphic template in the dimension for negative/potential which will unify with the pronominal prefixes. Finally, idiosyncratic markers, such as the number-neutral version of *pu-* in the negative can easily be accounted for by making them morphotactically dependent. Moreover, by integrating suffixal and prefixal marking into a morphotactic construction, it becomes straighforward to account for multiple exponence in the case of S arguments. To conclude, cross-classification of underspecified morphotactic rule descriptions can derive rules for pronominal affixation for both constructional and general variants alike that not only capture the independent and dependent uses, but at the same time can account for constructionally induced idiosyncrasies.

References

Anderson, Stephen R. 1992. *A-morphous morphology*. Cambridge: Cambridge University Press.

Blevins, James P. 2005. Word-based declensions in Estonian. In Geert E. Booij & Jaap van Marle (eds.), *Yearbook of morphology 2005*, 1–25. Springer.

Crysmann, Berthold & Olivier Bonami. 2016. Variable morphotactics in information-based morphology. *Journal of Linguistics* 52(2). 311–374.

Foley, William A. 1991. *The Yimas language of New Guinea*. Stanford: Stanford Univeristy Press.

Harris, Alice C. 2009. Exuberant exponence in Batsbi. *Natural Language and Linguistic Theory* 27. 267–303.

Stump, Gregory T. 2001. *Inflectional morphology. a theory of paradigm structure*. Cambridge: Cambridge University Press.