Positional competition in Murrinh-Patha by rule composition

Berthold Crysmann
CNRS, Laboratoire de linguistique formelle

In this talk, I shall address positional competition between subject and object agreement markers in Murrinh-Patha, a polysynthetic Non-Pama-Nyungan language of Australia. The data discussed here are taken from Nordlinger (2010, 2015).

Verbs in Murrinh-Patha minimally consist of a lexical stem (open class) and a classifier stem (CS) from a set of 38 classifier stem paradigms. Together, these two stems express basic lexical meaning. While the lexical stem (in slot 5) is uninflected, the classifier stem (in slot 1) differentiates TAM as well as subject agreement.

1	2	3	4	5	6	7	8	9
CS.SUBJ.TAM	SUBJ/OBJ NUM	RR	IBP	**LEX-STEM**	TAM	ADV	SUBJ/OBJ NUM	ADV

Figure 1: Murrinh-Patha position classes (Nordlinger, 2015)

In addition to inflection by means of the classifier stem, Murrinh-Patha verbs are inflected with a number of discrete markers, organised into a positional template, as shown in Figure 1. Of particular interest for this paper are slots 2 and 8, where exponents of subject and object agreement can be found.

Agreement marking operates along up to four inflectional dimensions (illustrated by the paradigm of object agreement markers in Table 1): the language distinguishes four numbers (singular, dual, paucal, plural) and three persons, including a distinction between inclusive and exclusive for first person non-singular cells. Additionally, Murrinh-Patha marks a rather unique category of non-sibling in the dual and the paucal. Exponents of this category are differentiated for gender, which is otherwise not marked in the verb. Furthermore, the paucal is only distinguished for non-siblings. With siblings, paucal and plural are non-distinct. Another peculiarity of the non-sibling marker pertains to its morphotactics: while all other exponents of object agreement surface in slot two, the dual and paucal non-sibling markers are realised discontinuously in slot 8 (in the case of direct object agreement).

			1		2	3
			INCL	EXCL		
SG			N/A	-ngi	-nhi	∅
DU	NSIB	M	-nhi	-nganku + nintha	-nanku + nintha	-(pu)nku + nintha
		F	-nhi	-nganku + ngintha	-nanku + ngintha	-(pu)nku + ngintha
	SIB		-nhi	-nganku	-nanku	-(pu)nku
PC	NSIB	M	-nhi + neme	-nganku + neme	-nanku + neme	-(pu)nku + neme
		F	-nhi + ngime	-nganku + ngime	-nanku + ngime	-(pu)nku + ngime
	SIB		-nhi	-ngan	-nan	-(pu)n
PL			-nhi	-ngan	-nan	-(pu)n

Table 1: Object agreement markers

Subject agreement (cf. Table 2) is quite similar to object agreement, despite the difference in exponence: while object agreement is realised by discrete markers in slots 2 and 8, subject agreement is realised fusionally as part of the classifier stem (slot 1) plus discrete markers for non-sibling (slot 2/8) and for the non-future dual (slot 2). Another difference pertains to

dual non-sibling marking: with direct object markers, the person/number exponent (slot 2) is syncretic with the person/number exponent of the sibling dual, whereas for subjects the classifier stem is syncretic with the singular.

			1 INCL	1 EXCL	2	3
SG			N/A	bam	dam	bam
DU	NSIB	M	thubam	bam + nintha	dam + nintha	bam + nintha
		F	thubam	bam + ngintha	dam + ngintha	bam + ngintha
	SIB		thubam	ngubam + ka	nubam + ka	pubam + ka
PC	NSIB	M	thubam + neme	ngubam + ka + neme	nubam + ka + neme	pubam + ka + neme
		F	thubam + ngime	ngubam + ka + ngime	nubam + ka + ngime	pubam + ka + ngime
	SIB		thubam	ngubam	nubam	pubam
PL			thubam	ngubam	nubam	pubam

Table 2: Subject agreement (non-future sub-paradigm for classifier stem *see(13)*)

1 Positional competition

As discussed above (cf. also Figure 1), the positions for the affixal markers of subject agreement overlap with those for object marking, so the central question is to how conflict is actually resolved. Murrinh-Patha witnesses two strategies: displacement of the subject marker, and omission.

The first case of positional competition relates to the subject non-sibling markers *nintha/ngintha*. When marking subject agreement, these markers surface in slot 2, if available, i.e. before the lexical stem.[1]

(1) bam- **-ngintha-** ngkardu
SUBJ.3.SG-CS.SEE(13).NFUT NON-SIB.F.DU see
'They (dual non-sibling) saw him/her.' (Nordlinger, 2010)

However, if object agreement is overtly realised (any cell other than 3rd singular), slot 2 receives the object person/number marker and the subject non-sibling dual marker must surface in slot 8 instead, i.e. after the lexical stem, cf. (2).

(2) bam- -ngi- ngkardu **-ngintha**
3.SUBJ.SG-CS.SEE(13).NFUT 1.SG.OBJ see SUBJ.DU.NON-SIB.F
'They (dual non-sibling) saw me.' (Nordlinger, 2010)

Given the fact that subject and object non-sibling markers are syncretic, and that object non-sibling markers are also realised in slot 8, non-sibling marking may end up ambiguous as to whether it refers to the subject or the object, cf. the examples from Nordlinger (2015) below.

(3) ma- -nanku- -rdarri- purl -nu- **-ngintha**
1.SUBJ.SG-CS.HANDS(8).FUT OBJ.2.DU/PC back wash FUT NON-SIB.F.DU
'I will wash your (female dual non-sibling) backs.' *or*
'We (two exclusive female non-sibling) will wash your (dual sibling) backs.'

[1]The paucal non-sibling marker *-neme/-ngime* are always realised in slot 8.

In (3), *ngintha* may either refer to the object, leaving subject agreement solely marked by the singular classifier stem, yielding singular. Alternatively, singular stem and dual non-sibling marker jointly express first person exclusive female non-sibling dual, leaving the object marker in slot 2 to express sibling dual.

What is important about realisation of the subject dual non-sibling markers is that realisation in slot 8 is only ever licit when slot 2 is blocked by another exponent. If slot 2 is free, subject *ngintha/nintha* must surface there.

The second case relates to the dual/paucal number marker *ka* which appears in slot 2 in the non-future, as shown in (4a,b) from Nordlinger (2010). Note that in the non-future, as opposed to other TAM categories, the dual and plural stems are syncretic.

(4) a. pubam- **-ka-** -ngkardu
3.DU/PL-CS.SEE(13).NFUT -DU/PC.NFUT see
'They (dual sibling) saw him/her.'

b. pubam- **-ka-** -ngkardu- -ngime
3.DU/PL-CS.SEE(13).NFUT DU/PC.NFUT see PC.NON-SIB.F
'They (paucal, female, non-sibling) saw him/her.'

c. pubam- -nhi- -ngkardu
3.DU/PL-CS.SEE(13).NFUT 2.SG.O see
'They (two/paucal/plural siblings) saw him/her.'

d. pubam- -ngkardu
3.DU/PL-CS.SEE(13).NFUT see
'They (plural) saw him/her.'

Again, in the case of overt object marking (4c), subject marking in slot 2 becomes unavailable. In contrast to the dual non-sibling markers, there is no alternate realisation for *ka*, even if a suitable position (like slot 8) happens to be unoccupied. Instead *ka* is simply dropped, possibly leading to ambiguity between dual and plural, as shown in (4c). Note that without a competitor in slot 2, only a non-dual interpretation is possible (4d).

2 Realisational morphology

As argued by Nordlinger (2010), the high degree of overlapping exponence, involving discontinuous surface positions provides evidence against a morpheme-based view, favouring instead a templatic realisational perspective. Ever since Stump (1993), position class systems have provided core evidence for an inferential-realisational approach to morphology. However, no formal analysis has yet been developed for the data at hand. Indeed, positional competition in Murrinh-Patha poses some non-trivial challenges: rule block systems, such as PFM (Stump, 1993), ensure maximal independence of rules of exponence in different rule blocks, which is good for multiple exponence, but does not lend itself easily to capture the exclusive disjunction between subject sibling marking in slots 2 and 8. While an ambifixal rule block (Stump, 1993) may serve to capture the positional alternation of subject agreement as prefixation vs. suffixation to the lexical stem, it cannot capture the dependence on overt realisation of object agreement, which must be introduced in a different rule block. In more recent work, Stump (2017) proposes rule conflation as a means to compose complex realisation rules from more elementary building blocks. However, conflation is inherently constrained to strict adjacency. What we need, however, for Murrinh-Patha is the exact opposite, namely composition of rules in order to model the discontinuous dependency between exponents of subject agreement in slot 8 on the presence of exponents in slot 2.

I shall therefore build on Information-based Morphology (Crysmann & Bonami, 2016), an alternative approach to inferential-realisational morphology that represents position class information as a first class property of exponents, such that realisation rules can simultaneously license multiple, even discontinuous exponents. Furthermore, realisation rules are organised in a cross-classifying inheritance hierarchy, such that complex rules can be built from partial descriptions by means of unification.

The formal analysis I propose captures positional dependencies by means of complex rules that simultaneously license exponents for subject and object agreement in slots 1, 2 and 8. These rule constraints from which these complex rules are built are organised into three dimensions (INI, MID, FIN), such that each composed rule must inherit from exactly one rule constraint in each dimension. The first dimension (INI) consists of stem selection rules that introduce suitable classifier stems in slot 1, according to subject agreement and TAM specifications. The second (MID) and third dimension (FIN) jointly describe the range of affixal realisations for both subject and object agreement. The rule constraints in the FIN dimension describe the shape and position of the non-sibling markers, which are always final in this complex: while the paucal markers *neme/ngime* are restricted to slot 8, the dual markers *nintha/ngintha* are underspecified for their exact surface position. Yet, they do require that slot 2 be non-empty. Alongside these exponence constraints, there is a purely morphotactic rule constraint that captures the situation where no second affixal marker is present, restricting exponents to slots 1 and 2. The MID dimension finally provides exponence rule constraints for the initial affixal markers, including dual *ka* and the object person/number markers (*nhi*), which are all constrained to slot 2. However, these rules are open to combine with exponents contributed by the FIN dimension. In addition, the MID dimension provides two purely morphotactic constraints: one constraint that leaves slot 2 empty to license bare classifier stems (cf. (4d)) and paucal non-sibling subject markers (slot 8), and finally a constraint to receive a marker in slot 2. These constraints are actually sufficient to derive the distribution of non-sibling marking: while *neme/ngime* are always in slot 8, whether or not slot 2 is filled, *nintha/ngintha* surface in slot 8, if in combination, or in slot 2 when there is no other marker that can fill slot 2. Finally, the distribution of dual/paucal *ka* is governed by both Paninian and positional competition: if no object markers are present, the availability of a specific dual/paucal form, cf. (4a) restricts the bare dual/plural classifier to denote plural, cf. (4d). However, there is no more specific form that could preempt the *combination* of subject and object agreement, yielding (4c).

To conclude, the study of positional competition in polysynthetic languages like Murrinh-Patha highlights a basic requirement for realisational morphology: the possibility to compose rules of exponence and to be able to do so in a discontinuous fashion.

References

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