When Multiple Exponence is Blocked

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1. Restricting redundancy

Morphological blocking effects can be understood to include avoidance of redundancy (Aronoff 1976; Anderson 1986; Aronoff & Anshen 1998; inter alia)

women > *womans, ***womens**

went > *goed, ***wented**

In contrast, multiple exponence (ME) can be defined as the requirement of redundancy (Caballero & Harris 2012; Caballero & Inkelas to appear):

d-ex-d-o-d-ano

5-destroy-5-PRES-5-EVID

'They (5) are evidently destroying it' (Batsbi: Harris 2009)

Many approaches that formalize a restriction on redundancy (e.g. Noyer 1997, Stump 2001) then must provide a separate mechanism for ME.

Xu and Aronoff (2011) propose treating redundancy restriction as a violable constraint NoFeatureSplit, so ME is only permitted when other constraints force it.

In Realization OT framework, morphological correspondences are induced language-particular realization constraints; NoFeatureSplit is universal.

Factorial typology makes ME look rare:

NoFeatureSplit > Morph1 > Morph2: only Morph1 realized

Morph1 > NoFeatureSplit > Morph2: only Morph1 realized

Morph1, Morph2 > NoFeatureSplit: both realized (ME)

Makes parodox of blocking and ME explicit, but:

- Predicts that exponents which display ME cannot be blocked by other exponents of those features; this paper presents possible counterexamples
- Typological claim makes implicit assumptions about possible induced constraints

2. Blocked ME in Gourmanchema

In Gourmanchema (Gur; Burkina Faso), the class of indefinite nouns is marked by a suffix, while definite nouns are also marked with a prefix (often identical).

ŋūmb-ī	'donkeys'	bí-gā	'a child'
ī-ŋūmb-ī	'the donkeys'	gī-bí-gā	'the child'
gī-yié-gā	'the small calabash'	ó-nīl-ō	'the person'
ó-yié-gū	'the big calabash'	bí-nī-bā	'the people'

So: {DEF}:{CM-}, {CM}:/*/ > NoFS

However, regardless of definiteness, the heads of relative clauses are marked with a different prefix /ya-/, with tone changes.

yā-bī́-gā́ 'the child who' yā-níl-ó 'the person who'

yā-yié-gā́ 'the small calabash which'

Possessive prefixes also block class prefixes, despite possessed noun definiteness.

lí-tí-lī 'the book' ō-bád-ō 'the chief'

ñ-tī́-lī́ 'my book' ñ-bā́d-ó 'my chief'

ō-tī́-lì 'his book' ó-bā́d-ó 'his chief'

So: {POSS,DEF}:/*/, NoFS > {DEF}:{CM-}

No reason to think prefixes are prosodically restricted, cf

ñ-yā́-bā́d-ó 'my chief, not yours'

(Data from Beckett 1974: 53-86)

Root	Definite	3SG POSS	Relative
chief	ō-bád-ō	ó-bā́d-ó	yā-bád-ó
child	gī-bí-gā	ō-bī́-gà	yā-bī́-gā́
food	mī-jiē-mā	ó-jié-mà	yā-jié-má
people	bí-nī-bā	ó-ní-bā	yà-nì-bà

3. Blocked ME in Gitonga

In Gitonga (Bantu; Mozambique), demonstratives agree with the noun.

Distal once:

mi-simbo	ji-ʈe	'those trees'
4-tree	4-DIST	
ɣi-woŋga	ɣi-ʈe	'that cat'
7-cat	7-DIST	

Proximal twice:

mi-simbo	j-eji	'these trees'
4-tree	4-4.PROX	
ɣi-woŋga	ɣj-eɣi	'this cat'
7-cat	7-7.PROX	

The numerals 'one' to 'four' also agree, with 'one' marked twice.

mi-simbo	mi-vˈiɽi	'two trees'	ɣi-woŋga ɣi-mw-eɣj-o 'one cat'
4-tree	4-two		7-cat 7-one-7.PROX-o

So: {CM}:/*/ > NoFS

However, class 1 DIST uses class 3 /wu-/ and class 3 'one' uses class 1 /-ojo/.

Participate in ME in PROX, but blocked here.

So: NoFS > {CM,1}:/ju/, {CM,3}:/wu}

Classes 1 and 3 have distinct adjectival CM, but same nominal class prefix:

/mu-/ with monosyll roots, /0-/ with longer [-vc, +cont]-initial roots, /N-/ otherwise

Implicational relations → syncretism like this

(Data from field notes; Amaral 2007 agrees)

Class	PROX	DIST	'one'
1	j-oju	**wu-ʈe**	**m-ojo**
3	w-owu	**wu-ʈe**	**m-ojo**
5	ɽ-eɽi	ɽi-ɽe	ɽi-mw-eɗo
7	ɣj-eji	ɣi-ɽe	ɣi-mw-eɣjo
9	j-eji	ji-ɽe	mw-ejo
14	w-owu	wu-ɽe	wu-m-owo
15	ɣ-oɣu	ɣu-ɽe	ɣu-m-oɣo

4. Quantitative typology

NoFeatureSplit tries to formalize an intuition: blocking is 'more common' than ME (though see Caballero & Harris 2012).

- In simple two-exponent factorial typology, ME is in only 1/3 of ranking space

However, induced constraints are highly arbitrary – can't limit to just two morphs

In a typology with more morphs (e.g. N = 9), ME more common (N-1)/(N + 1)

NoFS > Morph1, Morph2, ... Morph9	Blocking
Morph1 > NoFS > Morph2, ... Morph9	Blocking
Morph1, Morph2 > NoFS > Morph3, ...	Multiple Exponence (2)
...	...
Morph1,... Morph9 > NoFS	Multiple Exponence (9)

Also, quantitative typological prediction depends on assumed probability distribution of constraint ranks

Xu & Aronoff's interpretation of ranking space is the same as Riggle (2010): All constraints drawn from same distribution, uniform over ranks

But prior probability in learning models (Hayes and Wilson 2008; Boersma and Pater 2008) implies normal/log-normal distribution of weights

Functional constraints (e.g. NoFS) limited by more than just learning biases

5. Conclusions

Feature-based blocking by NoFeatureSplit is insufficient to account for the blocked ME in Gourmanchema and Gitonga.

The contrast between ME and blocking is not a single dimension:

- Functionally, there are featural/cue-based reasons for both ME and blocking
  - Violable NoFeatureSplit conceptualizes feature-based blocking; Cue-based ME for 'weak' exponence (Caballero and Inkelas to appear)
- Formally, morphotactics/templates needed for both ME and blocking
  - The data here (both ME and blocking) can be modeled with more detailed realization constraints (cf rule blocks), with or without NoFeatureSplit

Typological models (especially quantitative ones) must distinguish cross-linguistic constraints from language-particular instantiation. If both are constraints, either:

- separately, in distinct typological and language-specific systems
- use weighted constraints to factor out typological trends from language variety

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