Opacity in Mojeño Trinitario Reduplication: A Harmonic Serialism Account

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Abstract

- In Mojeño Trinitario (Arawak), rhythmic vowel deletion underapplies in reduplicated forms: the RED-vowel is blocked from deletion
- To account for the opacity in MT, I propose a novel version of Harmonic Serialism (McCarthy 2016) with standard faithfulness constraints as they are also used in parallel OT (Prince & Smolensky 1993), and argue against Serial Template Satisfaction (McCarthy et al. 2012)
- Crucially, the faithfulness constraint MaxBr has the double function of triggering reduplication in the first step and protecting the reduplicant vowel from being deleted later in the derivation

Harmonic Serialism: Background

- Harmonic Serialism (McCarthy 2010) is a serial version of OT
- Candidates are derived and evaluated in a series of multiple steps
- GEN is limited to making one change at a time
- Each candidate must either be identical to the input or differ from the input by only a single operation
- The output of GEN and EVAL at each step is submitted as the input for a following step until no further changes can be made and the derivation converges

Reduplication in Mojeño Trinitario

Reduplication

- Mojeño Trinitario displays partial reduplication of the verbal root, expressing iterativity or attenuation (Rose 2014):

(1) psoppox'konu
pi-sopo-**po**-xi-'ko-nu
2SG-believe-**RED**-CLF-ACT-1SG
'You half-believe me.'

Vowel Deletion

- Rhythmic vowel deletion applies to all underlying forms, deleting every weak vowel of a foot
- The vowel of the final syllable is always preserved

(2) nomxiko
nu_1-o_2mo_3-xi_4-ko_5
1SG-carry-CLF-ACT
'I am carrying it.'

Metrical Parsing and Stress

- (Underlying) Syllables are parsed into left-aligned, iambic feet; if the number of syllables is odd-numbered, the last foot is monosyllabic
- In the underlying form (before vowel deletion), main stress is assigned to the penultimate foot:

(3) (tisò)(kokò)(xikó)(jorè)

Vowel Deletion and Reduplication

- Vowel deletion targets all weak (=odd) vowels.
- The RED-vowel, is always preserved; if it is odd-numbered, deletion targets the next odd vowel:

(4) sittutupikripo
su_1-$i_2tV_3tu_4$-**tu**$_5$-pi_6-ko_7-ri_8po_9
3-learn-RED-CLF-ACT-already
'She is learning little by little.'

The Opacity Problem:
→ RED is counted by rhythmic vowel deletion, but it is blocked from deletion (as opposed to the base vowel)

A Challenge for Reduplicative Theory

Serial Rule-Based Approaches

Serial rule-based accounts (Distributed Reduplication, Frampton 2004) cannot account for the pattern, since no ordering of reduplication and vowel deletion can predict the right form.

(5) a. Reduplication > Vowel Deletion → transparent deletion
b. Vowel Deletion > Reduplication → base and reduplicant always identical

Parallel OT

- Since vowel deletion applies to non-stressed vowels, it has to be ordered after stress assignment (cf. McCarthy 2008)
- Since the reduplicant is present for the counting by the vowel deletion rule (even though it is not deleted), vowel deletion has to be ordered after reduplication
- Due to the lack of IR-faithfulness, base-V cannot be copied and deleted at the same time

A Harmonic Serialism Account

Step 1: Reduplication

/RED, ti-ko-xuma-xi/	¬Fin(F,ω) Red=Syl	Max-Br	ParseSyl	RedForm FtForm	Reduce	Ident	AllFtL
1a. ti.ko.xu.ma.xi		***!*	*****				
1b. (ti.kò)(xu.má)(xì)		***!*		*	**		**
1c. ☞ ti.ko.xu.ma.**ma**.xi		**	******				
1d. ti.ko.xu.ma.**xu.ma**.xi	*!		*******				

- The high-ranked MaxBR triggers reduplication in the first step, requiring correspondents of the base in the reduplicant

Step 2: Metrical Parsing

/RED, ti-ko-xuma-xi/	¬Fin(F,ω) Red=Syl	Max-Br	ParseSyl	RedForm FtForm	Reduce	Ident	AllFtL
2a. ti.ko.xu.ma.**ma**.xi		**	*!*****				
2b. ☞ (ti.kò)(xu.má)(**ma**.xì)		**			***		**
2c. (ti.kò)(xu.mà)(**ma**.xí)	*!	**			***		**
2d. (ti.kò)(xu.má)**ma**(xì)		**	*!	*	***		**

- Metrical parsing is triggered by ParseSyl

Step 3: Vowel Deletion

/RED, ti-ko-xuma-xi/	¬Fin(F,ω) Red=Syl	Max-Br	ParseSyl	RedForm FtForm	Reduce	Ident	AllFtL
3a. (ti.kò)(xu.má)(**ma**.xì)		**			**!*		**
3b. ☞ (t •.kò)(x•.má)(**ma**.xì)		**			*	**	**
3c. (t•.kò)(x•.má)(**m•**.xì)		***!				***	**

- Reduce triggers deletion of weak vowels; MaxBR prevents the deletion of the RED vowel

STS Makes Wrong Predictions

- The standard model for reduplication in HS is Serial Template Satisfaction (STS, McCarthy et al. 2012) which dispenses with faithfulness constraints; markedness constraints control the serial copying of segments until the reduplicative template is satisfied
- MT reduplication cannot be accounted for in STS: due to the lack of BR identity constraints, STS has no way of accounting for the fact that the base vowel can be deleted, but not the RED vowel
- STS massively undergenerates: out of 6 rule interaction patterns, it can only account for overapplication

Comparison of frameworks

Pattern	parallel OT	STS	HS with faithfulness	Distributed Reduplication
Underapplication	✓	✗	✓	(✓)
Underapplication MT	✗	✗	✓	✗
Overapplication	✓	✓	✓	✓
Overappl. RED-B-juncture	✗	✗	✓	✓
Back-Copying	✓	✗	✓	(✓)
Skipping Effects	✓	✗	✓	(✓)

- HS with faithfulness constraints, in contrast, can account for all six attested patterns and is the only framework which is able to derive the underapplication pattern in MT

Factorial Typology of reduplicative patterns in HS

Ranking	Pattern
MaxBr » Phono-Constraint » ID-IO » ID-Br	Underapplication, MT Style
MaxBr, ID-Br » Phono-Constraint » ID-IO	Underapplication
MaxBr , Phono-Constraint »(Id-Io$_{RED}$ ») ID-Br » ID-IO	Overapplication
MaxBr , Phono-Constraint » ID-Br »ID-IO	Overappl. at Juncture
MaxBr , Phono-Constr. »(Id-Io$_{Base}$ ID-Br ») ID-IO	Back-Copying
Phono-C_1 » MaxBr » Phono-C_2 » Contig-Br » Id-Br	Skipping Effects

Conclusion

- Reduplication in MT can only be accounted for in a novel version of Harmonic Serialism with standard faithfulness constraints; serial approaches, parallel OT as well as STS fail to account for the pattern
- HS with faithfulness is the only theory able to derive the full range of attested reduplicative patterns
- STS massively undergeneralizes, failing to account for all patterns other than regular overapplication