Surface Correspondence in Reduplication

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1. Overview

Aims

- Present new data from fieldwork on Huozhou Chinese that provides evidence for a pattern of backcopying in reduplication;
- Show that backcopying in reduplication an be analyzed using Surface Correspondence ('SCorr', e.g. Rose & Walker 2004), an independently motivated mechanism for enforcing surface identity.

2. Diminutive Formation in Huozhou Chinese

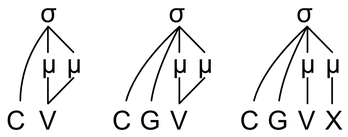
Huozhou Chinese and Data Sources

- *Huozhou Chinese*
  - a variety of Zhongyuan Mandarin, spoken in Huozhou, central Shanxi Province.
  - approx. 290,000 speakers (Feng & Zhao 2014).

- *Data Sources*
  - Published data in literature (Tian 1992, Feng & Zhao 2014, etc.)
  - My own fieldwork data (natural speech and elicited words from three consultants, aged 55-65; July 2019).

Sketch of Huozhou Phonology

- Moraic representations of syllable (G = glide):
- Coda position (X) can be [j, w, ŋ].



Diminutive Formation in Huozhou

1) Diminutive Rime Change

- For syllables with coda [j], [w], or [ŋ], the coda is subtracted with compensatory lengthening to form a diminutive (numbers indicate tones):

	noun	diminutive	gloss
a.	[saj^{21}]	[saː^{51}]	'sieve'
b.	[pɑw^{21}]	[poː^{21}]	'bag'
c.	[pɑŋ^{35}]	[paː^{35}]	'plate'

Table 1.

2) Diminutive Reduplication

- For open syllables, full reduplication is used to form a diminutive;
- For syllables with [j] or [ŋ] coda, partial reduplication is an alternative variant for diminutive:

	noun	diminutive	gloss
a.	[ŋəː^{35}]	[ŋəː^{35}.ŋəː^{55}]	'moth'
b.	[saj^{21}]	[saː^{51}] ~ [saj^{21}.saː^{33}]	'sieve'
c.	[pʰɑŋ^{35}]	[pʰaː^{35}] ~ [pɑŋ^{35}paː^{55}]	'plate'

Table 2.

- For syllables with [w] coda, partial reduplication is an alternative variant for diminutive; **backcopying is observed in reduplication:**

	noun	diminutive	gloss
a.	[pɑw^{21}]	[poː^{21}] ~ [poː^{21}.poː^{21}] (*[pɑw^{21}.poː^{21}])	'bag'
b.	[tʰow^{51}]	[tʰuː^{51}] ~ [tʰuː^{51}.tʰuː^{21}] (*[tʰow^{51}.tʰuː^{21}])	'bean'
c.	[tɕʰjɑw^{35}]	[tɕʰjoː^{35}] ~ [tɕʰjoː^{35}.tɕʰjoː^{55}] (*[tɕʰjɑw^{35}.tɕʰjoː^{55}])	'bar'

Table 3.

Summary

- Open-syllable nouns: full reduplication only.
- [j] / [ŋ]-ending nouns: rime change or partial reduplication.
- [w]-ending nouns: rime change or reduplication with backcopying:
- **The backcopying pattern is the focus of this presentation, namely what mechanism is responsible for this pattern.**

3. Proposal

Representation

- The underlying representation of the diminutive morpheme is a **mora (μ_d)**
- The affixal mora can give rise to variable surface forms, including *compensatory lengthening (rime change)* and *reduplication* (Saba Kirchner 2010, Trommer & Zimmermann 2014, etc.). Relevant analytical details are pursued in another work (Yang 2019).

Identity-enforcing mechanism in grammar

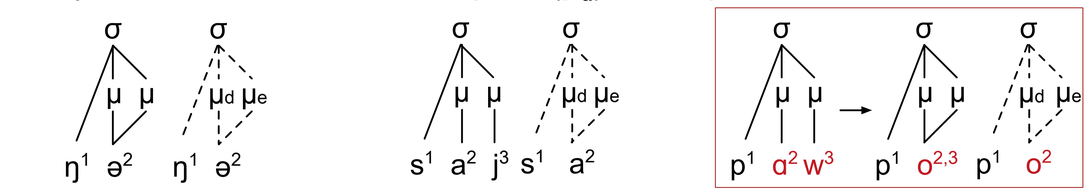
- *Surface Correspondence* (Hansson 2001, Rose & Walker 2004) was originally proposed for long-distance segment agreement.
- This mechanism is not 'turned off' for reduplication (see also Inkelas and Zoll 2005, Inkelas 2008)
  - CORR constraints enforce surface correspondence between segments in an output that share certain features;
  - Corresponding segments are required to be featurally identical by IDENT-SS[F].

[poː$_x$. poː$_x$]
SCorr

4. Analysis

Output Representation

- One way to flesh out the moraic template (μ_d) is reduplication



- (**Note:** digits indicate input-output relations; μ_e refers to an epenthetic mora since the reduplicated string still possesses a full tone which demands bimoraicity.)

- The reduplicant is viewed as an affix: [$_{STEM}$ pɑw + $\mu_{DIMINUTIVE}$]

Crucial Constraints and Tableaux

1) CORR and IDENT-SS
   - **CORR-SS[–cons]$_{STEM}$** requires all [–cons] segments within the stem domain to establish correspondence;
   - **IDENT-SS[F]** requires all corresponding segments to be featurally identical, at the sacrifice of **IDENT-IO[F]**.

2) CORR-SS[–cons]$_{STEM}$ enforces identity between all vocoids, but an identity effect is *only* visible in diminutive reduplication, not in a bare noun root (i.e. /pɑw/ → [pɑw], without DIMINUTIVE morpheme):
   - **ID-SS[high]&$_{STEM}$ID-SS[high]**, locally self-conjoined constraint in the stem domain (Ito & Mester 2003, Smolensky 2006, etc.)
   - Multiple violations of **ID-SS[high]** result in a cumulative markedness effect
   - This mechanism distinguishes /pɑw + μ_x/ from /pɑw/.

Tableau 1. (digits indicate input-output relations, not tones)

	p^{1}ɑ^{2}w^3	**CORR**	**ID-IO[hi/lo]**	**ID-SS[hi]**
☞	**a.** p^{1}ɑ$_x$^{2}w$_x$^{3}			*
	b. p^{1}oː^{2,3}		*!*	

Tableau 2. (digits indicate input-output relations, not tones)

	p^{1}ɑ^{2}w^3 + μ_x	**CORR**	**ID-SS[hi]^2**	**ID-IO[hi/lo]**	**ID-SS[hi]**	**UNIFORMITY**
☞	**a.** p^{1}oː$_x$^{2,3}.p^{1}oː$_x$^{2}			***		*
	b. p^{1}ɑ$_x$^{2}w$_x$^{3}.p^{1}ɑː$_x$^{2}		*!		**	
	c. p^{1}o$_x$^{2}w$_x$^{3}.p^{1}oː$_x$^{2}		*!	**	**	
	d. p^{1}ɑ$_x$^{2}w$_y$^{3}.p^{1}ɑː$_x$^{2}	*!*				

- The proposed grammar requires that all surface corresponding segments be identical in height (and roundness, not shown);

- j-ending nouns such as [kaj] and [paj] do not exhibit such a pattern since the relevant candidates (e.g. *[keː.keː], *[peː.peː]) do not follow the general phonotactic rules of this language.

5. Alternative Analysis

- [poː.poː] could be analyzed as the cyclic application of rime change and reduplication:
  - /pɑw + diminutive/ → [poː] → [poː.poː]

- This will cause problem for j-ending and ŋ-ending nouns (those in *Table 2*):
  - /kaj + diminutive/ → [kaː] → *[kaː.kaː]
  - /pɑŋ + diminutive/ → [paː] → *[paː.paː]

6. Closing Remarks

Summary

- These data from Huozhou Chinese provide new evidence for the existence of backcopying in reduplication;
- This pattern can be analyzed with SCorr (see Inkelas and Zoll 2005 for other examples);
- A cyclic alternative is not successful for the Huozhou pattern.

Further Issues

- Part of the success of the current analysis is due to specific phonological and morphological patterns in Chinese.
- Future work: to what extent can SCorr be used in analyzing the phenomena that show identity effects (e.g. overapplication, underapplication).

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