

1. Introduction

• **Templatic morphology:** order of affixes is arbitrarily fixed, doesn't co-vary with syntactic structure.
 → The “CARP” template in Bantu: verbal derivational suffixes (“verbal extensions”) prefer to appear in an arbitrarily specified order (1) (Hyman & Mchombo 1992, Hyman 2003, Good 2005):

(1) **CAR(T)P Template:** CAUSATIVE < APPLICATIVE < RECIPROCAL (< TRANSITIVE) < PASSIVE

• Baker (1985) wasn't sure whether templatic morphology adhered to the Mirror Principle:

(2) **Mirror Principle (MP):** *Syntactic derivations reflect morphological derivations (and vice versa).*

In other words: **Does (morpho)syntactic structure matter in templatic morphology?**

• **Answer: Yes.** MP obscured later in derivation by other factors preferring arbitrary order. Clear evidence from partially templatic ordering alternations (e.g. Rice 2000, Hyman 2003, Ryan 2010, Zukoff 2023).

• **This poster:** Morphophonological evidence for the operation of the MP in Bantu's CARP template in cases that *don't* involve (simple) ordering alternations.

- Suffix doubling in Chichewa (Hyman & Mchombo 1992, Hyman 2003, Mchombo 2004)
- Overapplication opacity in Nyakyusa (Hyman 2000, 2003, Persohn 2017)

• Despite adhering to templatic order, certain asymmetries in these patterns require that the syntax, morphology, and phonology be based on and explicitly track **distinct structures**.

- These asymmetries require an implementation of the MP where concatenation occurs in parallel in the phonology using Base-Derivative Correspondence (Benua 1997), *not* cyclic concatenation.

2. Restricted Suffix Doubling in Chichewa: Data

• The Applicativized Reciprocal requires the **CARP order** (3a), bans the **Mirror order** (3b).
 ◦ It *also* allows a particular **Doubling order** (3c). (Hyman & Mchombo 1992:351ff., Hyman 2003:253ff.)

(3) a. **CARP order** ✓ b. **Mirror order** ✗ c. **Doubling order** ✓
mang-il-an- **mang-an-il-* *mang-an-il-an-*
 tie-APPL-REC- tie-REC-APPL- tie-REC-APPL-REC-
 Meaning: ‘tie each other for/at’ Putative structure: [[[Root]Rec]Appl]

• For the Reciprocalized Applicative (4), the **Mirror order** obeys **CARP**.

- It does not permit a **Doubling order** (4c).

(4) a. **CARP order** ✓ = b. **Mirror order** ✓ c. **Doubling order** ✗
mang-il-an- *mang-il-an-* **mang-il-an-il-*
 tie-APPL-REC- tie-APPL-REC- tie-APPL-REC-APPL-
 Meaning: ‘tie for each other’ Putative structure: [[[Root]Appl]Rec]

• All grammatical outputs conform to the “template”, if we implement it using a “bigram morphotactic constraint” APPL-REC (5) (adapted from Ryan 2010):

(5) **APPL-REC:** When exponents of Applicative and Reciprocal are both present in the output, assign one * if an exponent of Applicative is not followed by an exponent of Reciprocal.

→ *But why do we have Doubling for (3)? And then why not for (4)?*

3. Restricted Suffix Doubling in Chichewa: Analysis

• **What's going on?** Variation between desire not to do doubling (INTEGRITY-IO (6)) and desire to retain the order of the “base” (CONTIGUITY-BD (7)).

(6) **INTEG-IO:** One * for each input segment with multiple output correspondents.
 (7) **CONTIG-BD:** One * for each pair of adjacent base segments that aren't adjacent in the derivative.

- The **base** is the realization of the immediate subconstituent of the complex derivative.
 → *This may require reassessment of the “freestanding word” condition on basehood in BD-Corr (cf. Benua 1997).*
- These constraints are variably ranked w.r.t. each other, and both are dominated by APPL-REC (5).
 ◦ No variation (i.e. no doubling) when Mirror order is CARP obeying (8); variation when it isn't (9).

	BASE: [[Root]Appl]	A-R	INTG	CNTG		BASE: [[Root]Rec]	A-R	INTG	CNTG
	INPUT: [[[Root]Appl]Rec] (4)					INPUT: [[[Root]Rec]Appl] (3)			
(8)	a. [✗] <i>Root-Appl-Rec</i>					a. [✗] <i>Root-Appl-Rec</i>			*
	b. <i>Root-Rec-Appl</i>	*!		*		b. <i>Root-Rec-Appl</i>	*!		
	c. <i>Root-Appl-Rec-Appl</i>		*!			c. <i>Root-Appl-Rec-Appl</i>		*!	*!
	d. <i>Root-Rec-Appl-Rec</i>		*!	*!		d. [✗] <i>Root-Rec-Appl-Rec</i>		*	

• If we understand “the Mirror Principle” as *adherence to base order via CONTIG-BD*, the asymmetric variability of suffix doubling demonstrates that the MP is active in this templatic ordering.

4. Overapplication Opacity in Nyakyusa

- Nyakyusa (Persohn 2017) has another verbal extension: “Transitive” /i/ (a.k.a. “short causative”).
 ◦ It triggers spirantization on immediately preceding segments: e.g. simple Transitive (10b).
 ◦ Nyakusa templatically orders Reciprocal before Transitive (cf. (1)), regardless of scope (10c,d).

• Only in the Reciprocalized Transitive (10d), spirantization **overapplies** to the root *even though the target and trigger are not adjacent* in the output.

(10) Transitive and reciprocal (Myler 2017:105, citing Hyman 2000:9)

a.	[sob-]	‘get lost (intr.)’			
b.	[sof-i-]	‘lose’ (tr.)’	Transitive		[[Root]Trans]
c.	[sob-an-i-]	‘get each other lost’	Transitivized Reciprocal		[[[Root]Rec]Trans]
d.	[sof-an-i-]	‘lose each other’	Reciprocalized Transitive		[[[Root]Trans]Rec]

- This is a cyclic effect (as suggested by Hyman 2003, *a.o.*), demonstrating the activity of the MP:
 ◦ The affixes are ordered in parallel according to an undominated bigram constraint (REC-TRANS).
 ◦ A BD-faithfulness constraint (≈ IDENT[stident]-BD) applies the process just in case it applied in the base, i.e. when the base is [[Root]Trans].

5. Conclusion

- In both suffix doubling in Chichewa and overapplication opacity in Nyakyusa, structure makes a difference even when templaticism neutralizes affix order.
- This shows that the Mirror Principle — syntactic structure underlies morphological structure — is in force even in templatic morphology.
- The evidence presented here demonstrates that, not just order, but also morphophonological effects can diagnose MP behavior.
- Such effects can only be understood using a quasi-cyclic BD-correspondence framework, precisely because cyclic concatenation is unavailable as an explanatory mechanism in templatic morphology.