

## Fishing for CARP in Kinyarwanda

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The order of derivational morphemes has been proposed to be isomorphic to the syntactic c-command relations of the heads they realise, which in turn reflect semantic scope (Mirror Principle: Baker, 1985; Rice, 2006). However, it has also been noted that derivational suffixes in Bantu languages tend to follow a fixed CAUS-APPL-RECP-(TRANS)-PASS order (CARP template: Hyman, 2003; Good, 2005). These two notions are at odds with one another, since one predicts that the morphology must reflect the syntax, while the other predicts that surface morphology will be invariant. This paper investigates these principles in Kinyarwanda, presenting a novel case of the interaction: both CARP and Mirror Principle must be jointly satisfied.

Investigations have been undertaken for Luganda (McPherson & Paster, 2009), Chichewa (Zukoff, 2017), and Nyakusa and Ndebele (Myler, 2017), in which the goal was to account for violations of either the Mirror Principle or CARP. McPherson & Paster and Zukoff chose to analyse violations using ranked bigram constraints in an optimality theoretic framework (OT), while Myler chose to analyse them not as violations, but rather evidence of movement in the syntax. I present novel data from Kinyarwanda that shows neither of these two accounts can be adopted wholesale for CARP across Bantu. Barring one mixed case, if both CARP and the Mirror Principle cannot be jointly satisfied in Kinyarwanda, a periphrastic form must be used. The table below summarizes the meaning-to-surface mappings in Kinyarwanda verbal extensions.

Meaning	Surface	CARP	Mirror
[V CAUS] APPL	V-CAUS-APPL	✓	✓
[V APPL] CAUS	<i>periphrastic</i> /V-CAUS-APPL-APPL-TRANS	✓	??
[V CAUS] RECP	V-CAUS-RECP	✓	✓
[V RECP] CAUS	N/A	-	-
[V CAUS] PSV	V-CAUS-PSV	✓	✓
[V PSV] CAUS	<i>periphrastic</i>	-	-
[V APPL] RECP	V-APPL-RECP	✓	✓
[V RECP] APPL	<i>periphrastic</i>	-	-
[V APPL] PSV	V-APPL-PSV	✓	✓
[V PSV] APPL	N/A	-	-
[V RECP] PSV	<i>periphrastic</i>	-	-
[V PSV] RECP	<i>periphrastic</i>	-	-

I argue that this result is incompatible with a syntactic movement account for morphemic templates. The OT analyses in McPherson & Paster (2009) and Zukoff (2017) are also inadequate, given that they fail to force periphrasis. I show that the constraint M-PARSE (Prince & Smolensky, 1993), proposed for paradigm gaps, can be used to account for the Kinyarwanda facts. While such a phonological analysis can account for the data, it misses syntactic generalisations pertaining to adverbial modification, complementarity in the distributions of heads, and variable semantics of applicatives. These are all diagnostics for selectional restrictions of argument introducing heads as per Pylkkänen (2008). I extend this analysis to the valency modifying reciprocal and passive heads, showing that while it can predict the order of morphemes in Kinyarwanda, much about syntax and semantics of the reciprocal in particular remains to be investigated.

This work contributes to the ongoing discussion about the division of labour between the syntactic and phonological components of the grammar, in particular with respect to morphology.

## References

- Baker, Mark (1985). The mirror principle and morphosyntactic explanation. *Linguistic Inquiry* 16:3, 373–415.
- Good, Jeff (2005). Reconstructing morpheme order in Bantu: The case of causativization and applicativization. *Diachronica* 22:1, 3–57.
- Hyman, Larry M (2003). Suffix ordering in Bantu: A morphocentric approach. Booij, Geert & Jaap van Marle (eds.), *Yearbook of Morphology 2002*, Springer, 245–281.
- McPherson, Laura & Mary Paster (2009). Evidence for the mirror principle and morphological templates in Luganda affix ordering. Ojo, Akinloye & Lioba Moshi (eds.), *Selected Proceedings of the 39th Annual Conference on African Linguistics*.
- Myler, Neil (2017). Exceptions to the Mirror Principle and morphophonological ‘action at a distance’. Newell, Heather, Máire Noonan, Glynne Piggott & Lisa deMena Travis (eds.), *The Structure of Words at the Interfaces*, Oxford University Press, 100–125.
- Prince, Alan & Paul Smolensky (1993). *Optimality Theory*. Rutgers Optimality Archive.
- Pylkkänen, Liina (2008). *Introducing arguments*, vol. 49. MIT press, Cambridge, US.
- Rice, Keren (2006). *Morpheme order and semantic scope: Word formation in the Athapaskan verb*. Cambridge University Press.
- Zukoff, Sam (2017). The mirror alignment principle: Morpheme ordering at the morphosyntax-phonology interface. Iovtcheva, Snejana & Benjamin Storme (eds.), *MIT Working Papers in Linguistics*, MITWPL, Cambridge, US, vol. 81, 105–124.