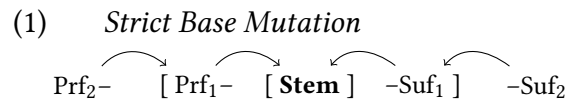


Exocentric mutation as argument for Generalized Nonlinear Affixation

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Main Claim The existence of exocentric mutation is unexpected given paradigmatic accounts; a prediction that is explicitly formulated as the principle of ‘Strict Base Mutation’ (=SBM; Alderete, 2001*b,a*). It states that affix-triggered mutation can only affect a morphologically more inward base, never a more outward morpheme. In this talk we discuss different types of exocentric mutation in the domain of segmental length and hence extend the typology of existing counterexamples to the SBM principle. We show that exocentric mutation is expected under an analysis assuming that mutation is an epiphenomenon that follows from the affixation of (non-segmental) phonological elements. **Background** According to the SBM, mutation only affects the base of affixation, illustrated in (1). Morpheme-specific phonology triggered by the affixation of specific segmental morphemes or non-concatenative morphology can hence only affect the base to which the morphological category in question



is added. The SBM is a central prediction in Transderivational Antifaithfulness Theory (Alderete, 2001*b,a*) and also in, for example, the REALIZE MORPHEME-based theory proposed in Kurisu (2001): only a mutation can be demanded that distinguishes the output form from a morphologically less complex base. An autosegmental approach in line with the ‘Generalized Nonlinear Affixation’ framework assuming that all mutation and non-concatenative morphology is the result of affixation (Lieber, 1987; Bermúdez-Otero, 2012), does not make this prediction. A non-segmental phonological element that is part of the representation for a morpheme is realized via association to higher/lower nodes and these nodes can, in principle, belong to either a following, the same, or a preceding morpheme. Wolf (2005), Wolf (2007), and Apoussidou (2003) discuss counterexamples against the SBM that involve feature mutation (Chukchee and Celtic) and stress (Modern Greek). Extending this typology of ‘exocentric mutation’, we discuss several cases of length-alternating mutation that are problematic for the SBM. **Exocentric mutation** The distinction between transitive and intransitive verbs in Tamil (Dravidian) involves gemination of either the stem-final consonant (=C) or the initial C of a following suffix (Schiffmann, 1999; Sundaresan and McFadden, 2014). The alternations in (2-a) all involve gemination of the stem-final C in the intransitive form and the allomorph /in/ as past tense marker (there are no voiced geminates in Tamil, hence devoicing is involved). In the forms in (2-b), a different allomorph for the past tense /ndʒ/ can be found and interestingly, gemination now affects this past tense suffix (or any suffix in this position) and not a stem C. (Compounding in Malayalam (Mohanan and Mohanan, 1984; Mohanan, 1989; Asher and Kumari, 1997) can be analysed as a similar case where gemination affects either the last C of the first part of the compound or the first C of the second part of the compound.)

(2) *Gemination in Tamil (Sundaresan and McFadden, 2014, 2+3)*

	TRANS.STEM	PST		INTR.STEM	PST	
a.	uud(u) _{epenth}	uud-in-	‘blow’	uutt(u) _{epenth}	uutt-in	‘pour’
	tirumb(u) _{epenth}	tirumb-in-	‘return’	tirupp(u) _{epenth}	tirupp-in-	‘return’
b.	oɖæ	oɖæ-ndʒ-	‘break’	oɖæ	oɖæ-čč-	‘break’
	vaɭar	vaɭar-nd-	‘grow’	vaɭar	vaɭar-tt-	‘grow’

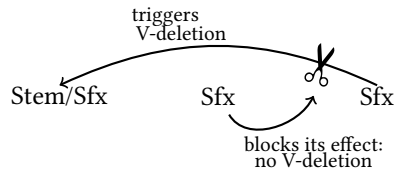
Tamil is hence an example where an affix triggers a mutation on either the more inwards base or a more outwards affix. Another pattern of mutation that is predicted under an autosegmental analysis but is highly problematic for the SBM are instances where an affix triggers mutation on either a more inwards base or alternates itself. Exactly such a pattern can be found in the Cushitic language Dhaasanac (Tosco, 2001; Nishiguchi, 2007, 2009) where plural

formation for certain nouns involves suffixation of /an/ and gemination of the stem-final C (3-a) that is not expected from any regular phonological processes in the language. If, however, the stem is polysyllabic, gemination is blocked (a recurring phenomenon in Dhaasenach) and the suffix surfaces as /a:n/ instead. This pattern is interestingly different from the pattern in Tamil since it involves an alternation between lengthening of a vowel (=V) or a C. Again, however, a morphologically triggered lengthening process affects either a segment of the stem or of a following suffix, summarized abstractly in (4).

(3)	<i>Dhaasanach</i> (Tosco, 2001, 87)		(4)	<i>Location of the length mutation</i>	
	BASE	PL	/stem/	-	/suffix/
a.	kur	'knee'	kur:am	...	V C
	ʃar	'a kind of stick'	ʃar:am		C/V
b.	ʔar:ɔŋɔd	'clearing-stick'	ʔar:ɔŋɔdɑ:m	↑	↑
	deger	'barren'	degerɑ:m	Length.	Length.

A final interesting challenge for the SBM are mutation patterns that involve the interaction of different affixes. In *Muylaq' Aymara* (Coler, 2010), a particular morphological length-alternation can be characterized as the blocking of an expected other morphological length-alternation. There is a class of lexically marked suffixes in *Muylaq' Aymara* that trigger phonologically unexpected deletion of a preceding V (/muna-t-χa/ → /muntχa/, */munatχa/ 'I want' (Coler, 2010, 165)). If now the verbalizer morpheme that is ø-marked in all other contexts, is followed by a suffix that is expected to trigger V deletion, the V that is expected to be remain unrealized, unexpectedly surfaces. Due to this peculiar property, one can call the verbalizer the 'rescuer morpheme': its only surface effect is to bleed an expected morphological V deletion (/mara-ni-ø_{VB}-t_{1.SG}-wa/ → /maranitwa/, */marantwa/ 'I am... years old' (5) *Blocking mutation in Muylaq' Aymara* (Coler, 2010, 361)).

(5) *Blocking mutation in Muylaq' Aymara* (Coler, 2010, 361)).



This is now a problem for SBM since an affix manipulates/blocks an effect of a more outwards affix and this 'blocking mutation' has no surface effect that can be represented as part of the base in a theory based on surface correspondences to

morphologically less complex forms, illustrated abstractly in (5). **Analyses assuming non-linear affixation** The exocentric mutation in Tamil follows under an autosegmental analysis assuming that a length-inducing μ as exponent for the intransitive is suffixed to the stem. This μ preferably associates to affix C's but cannot associate across V's due to standard locality restrictions: if the past tense suffix starts with a V, then lengthening affects a stem-final C. Absolutely parallel, the length-inducing suffix in Dhaasenach can be assumed to contain an extra floating μ in its representation. This μ strives to dock unto the preceding stem and if such a lengthening of stem segments is impossible, the μ associates to the V of the suffix itself. And the outward 'blocking mutation' in *Muylaq' Aymara* can be represented as a floating autosegment as well: if the V-deletion is the non-realization of a μ , an additional floating μ as a representation for the verbalizer can block this effect since it can provide an additional μ that already satisfies the μ -removal. Such an analysis, however, is only possible in a theory where the phonological effect of all affix representation is calculated simultaneously and affixes can hence have mutation effect on neighbouring morphemes to their left or their right.

(6) *Lengthening in Dhaasenach: autosegmental analysis*

underlying PL-Suffix	Surface	
	Context 1: (6-a)	Context 2: (6-b)
μ μ a m	μ μ μ k u r a m	μ μ μ ... g e r a m

References

- Alderete, John (2001a), 'Dominance effects as transderivational anti-faithfulness', *Phonology* **18**, 201–253.
- Alderete, John (2001b), *Morphologically governed accent in Optimality Theory*, Routledge, New York.
- Apoussidou, Diana (2003), The deformity of anti-faithfulness, in 'Proceedings of the Stockholm Workshop on "Variation within Optimality Theory"', pp. 15–24.
- Asher, Ronald E. and T. C. Kumari (1997), *Malayalam*, Routledge, London.
- Bermúdez-Otero, Ricardo (2012), The architecture of grammar and the division of labour in exponence, in J.Trommer, ed., 'The morphology and phonology of exponence: The state of the art', Oxford University Press, Oxford, pp. 8–83.
- Coler, Matt (2010), A grammatical description of Muylaq' Aymara, PhD thesis, Vrije Universiteit Amsterdam.
- Kurusu, Kazutaka (2001), The Phonology of Morpheme Realization, PhD thesis, University of California at Santa Cruz. ROA 490-0102.
- Lieber, Rochelle (1987), *An Integrated Theory of Autosegmental Processes*, SUNY Press.
- Mohanan, Karuvannur Puthanveetil and Tara Mohanan (1984), 'Lexical phonology of the consonant system in Malayalam', *Linguistic Inquiry* **15**, 575–602.
- Mohanan, Tara (1989), 'Syllable structure in Malayalam', *Linguistic Inquiry* **20**, 589–625.
- Nishiguchi, Sumiyo (2007), 'Bimoraic filter and sonority sensitive syllable contact in Dasenach imperfective', *Research in African Languages and Linguistics* **7**, 43–58.
- Nishiguchi, Sumiyo (2009), The prosodic morpheme in Dasenach, in C. G.Häberl, ed., 'Afroasiatic Studies in Memory of Robert Hetzron: Proceedings of the 35th Annual Meeting of the North American Conference on Afroasiatic Linguistics (NACAL 35)', Cambridge Scholars Publishing.
- Schiffmann, Harold F. (1999), *A Reference Grammar of Spoken Tamil*, Cambridge University Press.
- Sundaresan, Sandhya and Thomas McFadden (2014), 'Notes on the morphophonology of the Tamil verb-stem alternation', talk given at GLOW 37, Brussels, March 19.
- Tosco, Mauro (2001), *The Dhaasanac language*, Rüdiger Köppe Verlag.
- Wolf, Matthew (2005), An autosegmental theory of quirky mutations, in 'Proceedings of the 24th West Coast Conference on Formal Linguistics', pp. 370–378.
- Wolf, Matthew (2007), For an autosegmental theory of mutation, in L.Bateman, M.O'Keefe, E.Reilly, and A.Werle, eds, 'University of Massachusetts Occasional Papers in Linguistics 32: Papers in Optimality Theory III', GLSA, Amherst, MA, pp. 315–404.