Chameleon affixes in Sekani produce strictly layered stratal domains

Introduction: This article presents a study on the domains of morphological tone association in Sekani (Athabaskan, Hargus 1985). I identify a chameleon affix (Kiparsky 2020) in Sekani that shows diverging domain integration, which I claim follows from its variable stratal affiliation. Allowing variable stratal affiliation upholds the assumption of strict layering, dictating that all word-level operations follow all stem-level operations, which is empirically supported by tone association in Sekani. Strict layering follows directly from the proposed analysis of chameleon affixes, couched in OT morphology, which treats chameleon affixes as affixes that violate their default stratal affiliation to accommodate higher-ranked morphological constraints. **Data:** Hargus (1985) shows that conjugation prefixes in Sekani come with a floating L tone which associates to the preceding syllable in examples (1a) and (1b). The derivational prefix in (1a) and the object prefix in (1b) thus fall inside the phonological domain of L tone association. Other affixes, presented in examples (1c) and (1d), fall outside this domain. The L tone is not realised on the surface, despite the prepositional prefix in (1c) and the subject prefix in (1d) immediately preceding the conjugation affix.

(1) *Conjugation L tone association (domains indicated by brackets)*

a. tse tl'õ̀- də- `sə- leh → tse tl'õ(dè sɬeh)
rock circle- DER- CONJ- handle.PL.OBJ
's/he puts rocks in a circle.'

b. tà- sə- `sə- n- h- tʃèh → tà(sə̀ sīhtʃèh)
up- 1SG.OBJ- CONJ- 2SG.SBJ- CLF- handle.ANIM.OBJ
'You(sg) carry me uphill'

c. tən ɣa- `nə- s- get → tən ɣa (nəsget)
ice P- CONJ- 1SG.SBJ- poke
'I chisel through the ice'

d. ts'ə- `sə- tʃ'õ → ts'ə (ztʃ'õ)
1PL.SBJ- CONJ- shoot.OBJ.dead
'we shot[OBJ] dead.'

In a stratal approach, the object and derivational affixes are stem-level (SL) affixes, where they are visible to L tone association. The L tone is deleted at stem-level if there are no preceding stem-level affixes. Thus, assuming that the prepositional prefix and the 1PL.SBJ prefix are word-level (WL) affixes, the non-realisation of the L tone in (1c,d) follows from the stratal architecture. However, the word-level 1PL.SBJ affix can surface with the L tone of the conjugation affix when an object affix precedes it, see example (2).

(2) ɣu- ts'ə- `sə- tʃ'õ → (ɣu ts'ə̀ ztʃ'õ)
3PL.OBJ- 1PL.SBJ- CONJ- shoot.OBJ.dead
'We shot them dead'

According to the heretofore established stratal affiliation, example (2) seems to contain a word-level affix that is linearly closer to the root than a stem-level affix, schematised in (3a). This configuration violates the affix ordering generalisation (Siegel 1974, Allen 1978, Selkirk 1982) and predicts that stratal domains are interleaving which violates strict layering (Kiparsky 1982, Mohanan 1986). Importantly though, the phonological domain in (2) does not indicate that word-level phonology is sandwiched between stem-level phonology. Instead, (2) shows the presence of a large stem-level domain, schematised in (3b), because the L tone is in fact realised on the 1PL.SBJ affix. Crucially then, the 1PL.SBJ affix is affiliated with the stem-level domain in example (2), elsewhere it is a word-level affix. This variable stratal affiliation classifies 1PL.SBJ as a chameleon affix.

(3) a. $[_{\text{SL}}$ OBJ $[_{\text{WL}}$ SBJ $[_{\text{SL}}$ CONJ verb $]]] \rightarrow$ *$(_{\text{SL}}$ OBJ $(_{\text{WL}}$ SBJ $(_{\text{SL}}$ CONJ verb $)))$

b. $[_{\text{SL}}$ OBJ $[\boxed{\text{SL}}$ SBJ $[_{\text{SL}}$ CONJ verb $]]] \rightarrow (_{\text{SL}}$ OBJ SBJ CONJ verb)

Analysis: The phonological domains in (1) and (2) show that stratum affiliation cannot be a static property of an affix. Thus, I propose that stratum affiliation is determined in a global morphological OT evaluation, where violable stratum constraints define the default stratal preference of an affix. For the relevant examples in Sekani, I provide three stratum constraints.

(4) a. OBJ=SL : Assign * for every OBJ affix that is not affiliated with the stem level.

b. CONJ=SL : Assign * for every CONJ affix that is not affiliated with the stem level.

c. SBJ=WL : Assign * for every 1PL.SBJ affix that is not affiliated with the word level.

Affix order is determined by morphological constraints, relevant for Sekani is the precedence constraint OBJ$\succ$SBJ, which enforces object prefixes to linearly precede subject prefixes. Under the ranking CONJ=SL, OBJ=SL, OBJ$\succ$SBJ $\gg$ SBJ=WL, the OT computation correctly derives that the stratum affiliation of the 1PL.SBJ affix diverges from its default to accommodate the affix ordering constraint, the higher ranked stratum constraints and the affix ordering generalisation (assumed to be universal and inviolable), see candidate a. in the tableau below.

$\sqrt{\text{shoot}}$, CONJ, SBJ, OBJ		CONJ=SL	OBJ=SL	OBJ$\succ$SBJ	SBJ=WL
☞	a. $[_{\text{SL}}$ OBJ $[_{\text{SL}}$ SBJ $[_{\text{SL}}$ CONJ $\sqrt{\text{shoot}}$ $]]]$				*
	b. $[_{\text{WL}}$ OBJ $[_{\text{WL}}$ SBJ $[_{\text{SL}}$ CONJ $\sqrt{\text{shoot}}$ $]]]$		*!		
	c. $[_{\text{WL}}$ SBJ $[_{\text{SL}}$ OBJ $[_{\text{SL}}$ CONJ $\sqrt{\text{shoot}}$ $]]]$			*!	

The analysis can be readily extended to other chameleon affixes. For example, the well-known English affix /-ment/ is a default word-level affix, as it does not shift stress. However, it can be followed by the stem-level affix /-al/, which shifts stress onto /-ment/, i.e. develop-mént-al. Just as in Sekani, /ment/ is a chameleon affix which appears inside a stem-level domain, where its default stratum constraint is violated to abide by morphological well-formedness. **Discussion:** The introduction of stratum constraints in OT morphology allows for a straightforward analysis of chameleon affixes. Further, the stratal domains created by morphology remain strictly layered, as evidenced by Sekani phonology. In addition, constraint re-ranking predicts the existence of a different type of chameleon affix. In short, the ranking of a WL suffix constraint over an SL suffix constraint and a high-ranked morphological constraint forcing the WL suffix to be more internal than the SL suffix, represented abstractly by the ranking A=WL, A$\prec$B $\gg$ B=SL, yields the following most optimal candidate: $[[\ \sqrt{\text{root}}\ \text{A}\ ]_{\text{WL}}\ \text{B}\ ]_{\text{WL}}$.

Interestingly, the Sekani possessive affix provides evidence for such a configuration. When the POSS affix appears in isolation with the root, it bleeds a general phonological process of nasalisation of the final root vowel; compare the root in isolation in (5a) to the root with affixation of POSS in (5b). When a NMLZ affix linearly precedes the POSS affix, nasalisation applies, see (6). Thus, affixation of NMLZ and POSS counterbleeds nasalisation.

(5) a. ts$\underline{\grave{o}}$ - ‘shit’

b. sə-ts$\underline{\grave{o}n\text{-}\grave{e}}$
1SG-shit-POSS
‘my shit’

(6) sa- ts’ə- də- ɬ- ʔon -i è $\rightarrow$ [sats’ədɬʔ$\underline{\tilde{o}\grave{e}}$]
ʔ- UNSP.S- DER- ASP- compact.obj.in.position -NMLZ -POSS
‘my pendant’

Given (5b), the POSS affix is a default SL affix (POSS=SL), where it bleeds nasalisation. The NMLZ affix is a default WL affix (NMLZ=WL), it always counterbleeds nasalisation. The POSS changes from its default SL affiliation to WL when it must follow the WL NMLZ affix, thereby creating the output: $[[\ \sqrt{\text{root}}$ NMLZ $]_{\text{WL}}$ POSS$]_{\text{WL}}$. Just like the SBJ chameleon affix in Sekani, the POSS chameleon affix changes its default stratum affiliation and thereby creates strictly layered stratal domains.

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