# Postsyntactic Morpheme Reordering in Mari - Evidence from Suspended Affixation

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**Outline:** I show that (i) the morphological template in the noun phrase of Eastern Uralic languages should be derived on the basis of an underlying structure that is consistent with standard assumptions about the DP syntax and the Mirror Principle by postsyntactic reordering operations and (ii) the interactions of these processes with a deletion process called *Suspended Affixation* (SA) provide new insights on the derivational nature of postsyntax. SA generally deletes the right edge of non-final conjuncts under recoverability. In Mari (unlike in Turkish), SA applies to underlying rather than surface structures. I show that only a derivational account in terms of ordered postsyntactic operations makes the correct predictions concerning the surface order of morphemes *and* the ability of each morpheme to delete under SA. In particular, I show that, in some cases, only a Duke-of-York derivation captures the facts adequately. This, as it stands, provides a strong argument for derivational theories of postsyntax.

**The nominal template:** The nominal template of Eastern Uralic languages is remarkable wrt. to a number of properties, two of which are (i) Local cases precede possessive affixes whereas structural cases follow them. (ii) Number occurs in various positions: Either adjacent to the stem or to the right of the possessive affix (see Luutonen (1997), McFadden (2004)) (ex. from Mari).

(1) pasu-vlak-ešte-na
garden-PL-INESS-1PL.POSS
'in our gardens' (INESSIVE)

(2) pasu-vlak-na-m
garden-PL-1PL.POSS-ACC
'our gardens (ACCUSATIVE)'

(3) pasu-vlak-na
garden-PL-1PL.POSS   'our gardens'

(4) pasu-na-vlak
garden-1PL.POSS-PL   'our gardens'

These alternations raise the question whether the nominal template of Mari can be deduced to the standardly assumed order of affixes as predicted by the Mirror Principle (Baker (1985)).

**Suspended Affixation:** The nominal coordinator /den/ in Meadow Mari enforces a process called Suspended Affixation typically known from Turkish languages (see e.g. Kabak (2007)). This process deletes the right edge of non-final conjuncts if it is identical with the one of final conjunct as in (5). As (6) and (7) show, there is no requirement for the remnant to be an otherwise attested form which suggests a deletion analysis (cf. Ershler (2012)).

(5) Pij  den kajek-vlak-em
dog and bird-PL-ACC
'dogs and birds.'

(6) memna den nunem
us.???  and them.ACC
'us and them'

(7) 1.PL.NOM = /me/
1.PL.ACC = /memnam/
1.PL.GEN = /memnan/

In Turkish languages, SA has a strong requirement that only right edges can be deleted (8). Deletion of non-final affixes while maintaining the final ones is ungrammatical (9):

(8) kasaba ve  kent-ler-imiz-den
town   and city-PL-1PL.POSS-ABL
'from our towns and villages'

(9) *kasaba-dan ve  kent-ler-imiz-den
town-ABL   and city-PL-1PL.POSS-ABL
'from our towns and villages'

In Mari, however, we find cases where the right-edge constraint can be violated. Case markers can be deleted regardless of whether they follow or precede the possessive affix in linear order:

(10) Pörjeng oksa-m     tud-en    aka-ž     den iza-m-lan      pua.
Man     money-ACC 3SG.GEN sister.3SG and brother-1SG-DAT give-3SG.PRES
'The man gives money to her/his sister and my brother.'

(11) Üder mej-en   uše-m     den tej-en    süm-ešte-t.
girl  1SG-GEN mind-1SG and 2SG-GEN heart-INESS-2SG
'The girl is in my mind and in your heart.'

The dative case in (10) is at the right edge of the conjuncts. Hence, deletion is expected. The inessive case in (11), however, is *not* at the right edge as it is followed by the possessive. It can still be deleted. Also, the plural morpheme can be deleted in cases where it precedes the possessive affix in linear order. In (12) the first conjunct can have a plural interpretation.

(12)  A-vlak  tud-en  sad-še  den memna-n pasu-vlak-ešte-na  mod-et
child-PL 2PL-GEN garden-2PL and 1PL-GEN field-PL-INESS-1PL play-PRET.3PL
'The children played in your gardens and in our fields.'

These data raise the question whether SA can receive a unified analysis in Turkish and in Mari.

**Analysis:** The two questions raised at the end of the previous sections can receive a unified answer. If we assume that the nominal template in Mari is indeed derived on the basis of an underlying representation that resembles the standard order of functional projections, we can give a simple answer to the question why it behaves differently wrt. to SA: It is some kind of underlying representation that serves as a basis for the application of SA.

The syntactic output structure looks as follows: $[_{KP} [_{DP} [_{NumP}$ NP Num $]$ D $]$ K $]$ with Num hosting the plural affix, D hosting the possessive affix and K hosting case. This serves as the input to postsyntactic operations needed to derive the full pattern of affix order and whether affixes are deletable: (i) D-Lowering (D-L): Operation that lowers D to left-adjoin to Num. Applies on the basis of hierarchichal structure (see McFadden (2004)). Derives (4) on the basis of (3). D-L is optional. (ii) Suspended Affixation (SA): Deletes right edges of KPs of a conjunct in coordination if the features are recoverable on the final conjunct. Applies on linearized structures. (iii) D-Metathesis (D-M): Puts D to the right of K if K has a local case feature. This metathesis rule can (for some speakers) even apply over a possibly intervening Num-head. D-M applies on linear structures. Derives the difference between (1) and (2). D-M is obligatory. Also, we need (v) linearization (LIN) and (vi) vocabulary insertion (VI) as in Arregi & Nevins (2012) (A&N).

(13)  D-L: $[_{KP} [_{DP} [_{NumP}$ NP Num $]$ D $]$ K $]$ $\overrightarrow{\text{D-L}}$ $[_{KP} [_{DP} [_{NumP}$ NP $[_{Num^0}$ D Num $] ]$ t $]$ K $]$

(14)  D-M: NP D (Num) $K_{local}$ $\overrightarrow{\text{D-M}}$ NP (Num) $K_{local}$ D

The order of operations is as following:    (16)  D-L $\succ$ LIN $\succ$ SA $\succ$ D-M $\succ$ VI

**Derivations:** SA deletes the right edge of the whole complex at its point of application. Thus, the order of operations in (16) is crucial to give the correct results in terms of (a) morpheme order and (b) ability to delete under SA. D-L precedes SA and thus changes of order induced by D-L have an effect on SA. After D-L, Num follows D and can thus be deleted by SA irrespective of the (non-)identity of D in both conjuncts (12). D-M however follows SA and the reordering of structural case marker and possessive affix has thus no effect on which morphemes can be deleted (11) & (12). If both D-L and D-M apply, this creates a Duke-of-York derivation (Pullum 1976) as D-M undoes the effects of D-L. However, SA shows that there was an intermediate stage of the derivation where D preceded Num. D-M however comes too late to affect SA. Thus, K can be deleted although it is followed by a D in (11).

**Further Evidence:** The established order of operations can be tested against evidence from allomorphy and suppletion. E.g., the illative case marker (-š vs. -ške) is sensitive to whether it is followed by D or not. This is expected given the order in (16) as VI follows D-M. Pronominal stem suppletion as in (7) is sensitive to features deleted by SA. This is unexpected and possibly creates an order paradox as VI $\not\succ$ SA if SA $\succ$ D-M and D-M $\succ$ VI. This can be solved by refining the definition of SA saying that SA marks affixes for non-insertion rather than deleting them.

**Discussion:** The need of intermediate levels of representation for a SA provides a clear argument for a derivational nature of the PF module as laid out in A&N. In the analysis, the structure that serves a basis for SA can neither be reduced to the syntactic output nor the surface string. It is thus unclear how representational theories (e.g. Ryan 2010) could capture these facts at all.

**References**: ● Arregi & Nevins (2012): Morphotactics - Basque Auxiliaries and the Structure of Spellout. Springer ● Baker, M. (1985): The Mirror Principle and morphosyntactic explanation. Linguistic Inquiry 16.3: p. 373-415. ● Ershler, D. (2012): Suspended Affixation and the Structure of Syntax-Morphology Interface. Acta Linguistica Hungarica 59.1 ● McFadden, T. (2004): The Position of Morphological Case in the Derivation. PhD dissertation. UPenn ● Luutonen, J. (1997): Variation of morpheme order in Mari declension. Suomalais-ugrilainen Seura. ● Ryan, K.: Variable Affix Order: Grammar and Learning. Language: 86(4)