

On the fate of Proto-Uralic medial consonants in Mari



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0. Introduction

Starting point

- A new reconstruction of PM first-syllable vocalism (presented as [Savelyev 2022]).
- It has been shown that the PM first-syllable vowel system was based on the contrast between lax and tense vowels.
- The quality of the (pre-)PM first-syllable vowels was strongly dependent on the quality of the (pre-)PM medial consonants.
- The medial glides **-w-*, **-j-* had a special role in shaping the PM first-syllable vowel system. Pre-PM sequences “vowel + glide” were a major source of PM tense vowels.

Sources of medial glides in Mari: a preliminary interpretation

PU	PM		
	Back-vocalic env.	Rounded front-vocalic env.	Unrounded front-vocalic env.
*-j-	*-j-	*-j-	*-j-
*-w-	*-w-	*-w-	*-j-
*-k-	*-w-	*-w-	*-j-
*-x-	*-w-	*-w-	{*-j-}
*-ɖ-	*-w-	*-w-	{*-j-}
*-ɖ'-	*-w-	*-w-	{*-j-}

{...} The reflex is expected but hardly attested (due to the scarcity of PM lexemes inherited from PU).

A consequence

One should make a clear distinction between PM $*-w-$ [= traditional $*-0-$] and PM $*-\beta-$ [= traditional $*-w-$]. The former triggers tense articulation on the first-syllable vowel and yields *j* or, more commonly, a zero in the contemporary varieties. The latter does not trigger tense articulation on the vowel and is realized as a medial $-\beta-$ [$\beta \sim b \sim w$] / final $-p$ in the contemporary Mari (see below).

PU	pre-PM	PM	Modern Mari
$*w-$	$*w-$	$*\beta-$	$\beta-$
{In loanwords:	$*b-$	$*\beta-$	$\beta-$ }
$*p-$	$*p-$	$*p-$	$p-$
$*-w-$	$*-w- / *-j-$	$*-w- / *-j-$	$-0(-) / -j(-)$
$*-p-$	$*-b-$	$*-\beta- / *-p$	$-\beta- / -p$

PM *-w- vs. *-β-

PU **puwa-* ‘to blow’ > pre-PM **pʊwɒ-* > PM **pûwâ-* ‘id.’ > M *puâ-* | NW *puâ-*;

PU **koxsi* ‘spruce’ > pre-PM **kɔwzâ* > PM **kôwz* ‘id.’ > M *kož* | H *kož*;

PU **luki-* ‘to count’, **luka* ‘number’ > pre-PM **lɔw(â)-*, **lɔw(ɒ)* > PM **lûwδ-* ‘to count’ > M *luδ-* | NW *luδ-*, PM **lûw* ‘ten’ > M *lu* | H, NW *lu*

vs.

PU **kopa* ‘bark’ > pre-PM **kʊbɒ* > PM **kʊβâ* ‘husk, chaff’ > M *kuβö*, *kuβ-âl* | H *kâβ-âl*;

PU **koppala* ‘female capercaillie’ > pre-PM **kʊbɒl(ɒ)* > PM **kʊβâ-l-ćâ* ‘id.’ > M *kuβâlcö* | H *kâβâlzâ*;

PU **tappa-* ‘to entangle’ > pre-PM **tɔbɒ-* > PM **tɔβâ* ‘dag lock’ > M **toβö* | H *taβâ*;

U dial. #*repäci* ‘fox’ > pre-PM **riβɔśa* > PM **riβâž* ‘fox’ > M *râβâž*, *ârβâž* | *rəβəž*, *ərβəž*.

1. The development of PU *-mp-

Rule 1.1: PU *-mp- > PM *-wβ- / *-wp#

PU **lämpi-* ‘to melt’¹ > pre-PM **lewba-* > PM **lêjβa-* ‘id.’ > M *leβa-* | H *liβa-*;

Cf. a minimal pair: PU **läpi-* ‘to cover’ > pre-PM **lebā-* > PM **leβa-* ‘id.’ > M *leβ-eδ-* | H *leβ-eδ-*.

PU **kompa* ‘wave’² > pre-PM **kuwbλ* > PM **kôwβâ* ‘id.’ > M dial. *koβâ*;

Cf. a minimal pair: PU **kopa* ‘bark’ > pre-PM **kvbλ* > PM **kuβâ* ‘husk, chaff’ > M *kuβö, kuβ-âl* | H *kâβ-âl*. M dial., H *koe* represents a secondary development (< **kôwwâ* < **kôwβâ*). H *ko* probably goes back to the “clipped” PM variant **kôw*.

PU **ləmpi* ‘small lake / swamp’³ > pre-PM **lwwb(â)* > PM **lôwp* ‘lowland’ > M *lop*;

PU **kumpi* ‘tussock’⁴ > pre-PM **kuwb(â)* > PM **kûwp* ‘swamp’ > M *kup* | H *kup*;

? PU **tumpi* ‘back’⁵ > pre-PM **twwb(â)* > PM **tûwp* ‘id.’ > M *tup* | H *tup*.

¹ UEW 685: FW **lämpɜ* (> Mr). Aikio 2014a, 155: PU **lämpi-* > PM **liwe-*. Aikio 2014b, 83–84: PM **lewā* ~ **liwā* ‘warm’. Zhivlov forthc.: PU **lämpi* ‘warm’ > PM **liwā*. || ² UEW 203: PU **kumpa* (no Mr cgn). Aikio 2014b, 83: PU **kompa* > PM **kowā*. || ³ UEW 235: PU **lampe* (> Mr). Aikio 2015, 58: PU **limpi* (no Mr cgn). Zhivlov forthc.: PU **ləmpi* (no Mr cgn). || ⁴ UEW 203 (under PU **kumpa*, no Mr cgn). Zhivlov forthc.: PU **kumpi* (no Mr cgn). || ⁵ UEW 538: FU **tuppɜ* (> Mr).

The origin of PM *-mb-

M dial. *šomba* ‘ботало = a stick used to scare fish into nets’ – goes back to PM *šômbâ and *cannot* be further compared to PU *sampi / *sompā ‘stick’¹ (one would expect PM *sôwβâ ~ *sôwp). The form is probably related to M dial. *šomb-aš* ‘anvil’. PM *šômbâ < Chuv. ideophone **šâmbâ-, as in *šâmbâl* ‘dipping a large object into the water’, *šâmbâlt* ‘loud splash in the water’;

PM *lômbâ ‘bird-cherry’ < PU *δ’emi ‘bird-cherry’² + PU *pawi ‘tree’, hence PM *-mb- < PU *-mV=p- (or, generally, < PU *NV=p-?);

PM *kômbâ ‘goose’, PM *pêmbâ ‘chaffinch’ – no established etymology, but the shared components in the forms (...mb̅) and their meanings (bird names) suggest that these are opaque compounds, too (*=bV < *pVCV ‘bird’?).

¹ UEW 764: FP *sompā (> Mr). Zhivlov 2014, 144: PU *sampi / *sompā (> Mr). || ² UEW 65: *δ’eme (*δ’ōme) (> Mr *lom + *pu). Aikio 2014b, 83: PU *d’jmi > PM *lom + *pu. Zhivlov 2014, 134: PU *δ’jmi > PM *lombâ. Zhivlov forthc.: PU *δ’emi > PM *lom-.

2. The development of PU clusters with $*w$

Rule 2.1: PU *CwV, *CVw > pre-PM *wCV > PM *wCV / *jCV

PU *ćarwi ‘horn’¹ > pre-PM *śurwr > PM *šûwr ‘id.’ > M dial. šur | H šur;

U dial. #kaswa- ‘to grow’² > pre-PM *kwrws-k- > PM *kûwsk- ‘id.’ > M kušk- | H kušk-;

PU *kajwa- ‘to dig’³ > pre-PM *kwrwjɶ- > *kôwjâ- > PM *kôwâ- ‘id.’ > M kuâ- | H koâ-, but
+kôwjâ-l-mâ [FREQ-PTCP.PASS] > PM *kôwlmâ ‘spade’ > M kolmǔ | H kolmâ;

PU *ojwa ‘head’⁴ > pre-PM *owjɶ > PM *βûj ‘head’ > M βuj | H βuj;

U dial. #tamwi ‘oak’⁵ > pre-PM *tormâ > PM *tûwmâ ‘id.’ > M tumǔ | H tum;

PU *nataw ‘sibling-in-law’⁶ > pre-pre-PM *natwa > pre-PM *nwrwdɶ > PM *nûwδâ
‘spouse’s younger sister’ > M nuδǔ | H nuδâ;

¹ UEW 486: FU *śorwa (> Mr). Aikio 2014a, 127; 2015, 53: PU *śarwi > PM *šur. Zhivlov 2014, 130: PU *ćarwi > PM *šur. || ² UEW 129–130: FW, ? FU *kaswa (> ? Mr). Zhivlov 2015: U dial. #kaswa- (> Mr). || ³ UEW 170: FP, ? U *kojwa- (> Mr). Aikio 2015, 54: PU *kajwa- (> Mr). Zhivlov forthc.: PU *kajwa- > PM *koâ-. || ⁴ UEW 336–337: PU *ojwa (> Mr). Aikio 2014a, 157: PU *ojwa > PM *wuj. Zhivlov 2014, 138: PU *ojwa > PM *wuj. || ⁵ UEW 798: FW, ? FP *toma (> Mr). Zhivlov 2014, 132: PU *tammi > PM *tuma. Aikio 2015, 53: PU *tammi (> Mr). Zhivlov 2015: PFV *tammi (> Mr), cf. OPrm tu-pu, Udm tĭ-pĭ ‘oak’ & PSl. *dǫbъ ‘oak’. || ⁶ UEW 299–300: PU *natɶ (> Mr). Zhivlov 2014, 129: PU *nataw > PM *nuδâ. Aikio 2015, 55: PU *nataw (> Mr).

Rule 2.1: PU $*CwV, *CVw$ > pre-PM $*wCV$ > PM $*wCV / *jCV$

PU $*wän̄iw$ ‘son-in-law’¹ > pre-pre-PM $*wän̄wi$ > pre-PM $*wew̄ŋa$ > $*wej̄ŋa$ > PM $*β̄ej̄ŋa$ ‘id.’ > M $βen̄ě$ | H $βin̄ə$;

PU $*orawa$ ‘squirrel’² > pre-pre-PM $*orwa$ > pre-PM $*ɔwr(â)$ > PM $*ûwr$ ‘id.’ > M ur | H ur .

? Rule 2.2: PU $*CjV, *CVj$ > pre-PM, PM $*jCV$

U dial. # $tärj̄ä$ ‘lathwork in a sled’³ > pre-PM $*tejr̄a$ > PM $*têjr$ ‘sled’ > M ter | H tir ;

U dial. # $poča-j$ ‘(rein)deer’⁴ > pre-pre-PM $*puč̄ja$ > pre-PM $*puj̄č̄a$ > PM $*pûj̄č̄â$ ‘elk; deer’ > M $püč̄ö$ | H $puč̄â$.

¹ UEW 565: PU $*wän̄e$ (> Mr). Aikio 2014a, 155; 2014b, 84: PU $*wän̄iw$ > PM $*wiŋ̄a$. || ² UEW 343: FP, ?? U $*ora$ (> Mr). Aikio 2014a, 157: PU $*ora$ > PM $*ur$. Zhivlov 2014, 138; forthc.: PU $*ora$ > PM $*ur$. Aikio 2015, 61: PU $*ora(-p/wa)$ (!) (> Mr). || ³ UEW 517: FU $*tärj̄ä$ (> Mr). Aikio 2014a, 138–139: Mr ter | tir is borrowed from an unidentified source, FU $*tärj̄ä$ is unconvincing. || ⁴ UEW 387: FU, ? U $*poča$ (> Mr). Aikio 2014a, 157: PU $*počaw$ > PM $*puč̄a$. Zhivlov 2014, 138: PU $*poča$ > PM $*puč̄a$.

Rule 2.3: PU **äwC* (and, in theory, PU **äxC*, **ädC*, **äd'C?*) > ?
pre-PM, PM **eC*

PU **jäwrä* 'lake'¹ > pre-PM, PM **jer* 'id.' > M *jer* | H *jär*;

PU **läwli* 'heavy'² > pre-PM, PM **lela* 'id.' > M *nelě* | H *nelə*, dial. *lela*.

[No counterexamples!]

¹ UEW 633: FW **järwä* (> Mr). Aikio 2014, 137; 2015, 63: PU **jäwrä* (> Mr). Zhivlov 2014, 115: PU **jäwrä*. || ² UEW FW, ? FU **läwl3* (> Mr). Starostin et al. 2017: PU **läwli* (> Mr).

3. Simplification of PU clusters with *1

Rule 3.1: PU **-lʷ-* > pre-PM **-l-* > PM **-l-*

A very early
development

PU **pilwi* ‘cloud’¹ > pre-PM, PM **pɪl* ‘id.’ > M *pâl* | H *pəl*;

Pre-PM **pɪwɫə* would yield PM **pîjl* > H *pil*.

PU **tälwä* ‘winter’² > pre-PM, PM **telə* ‘id.’ > M *telə* | H *tel*;

Pre-PM **tewɫə* would yield PM **têjlə* > H *til*.

PU **talwa-* ‘to bring’³ > pre-pre-PM **tɔlɫ-* > pre-PM, PM **tôl-* ‘to come’ > M *tol-* | H *tol-*;

Pre-PM **tɔwɫ-* would yield PM **tûwɫ-* > M *tul-* | H *tul-*.

¹ UEW 381: FU **pilwe* (**pilŋe*, > Mr). Aikio 2014a, 146: PM **pîl*. Zhivlov 2022: PU **pilwi* > PM **pîl*. || ² UEW 516: PU **tälwä* (> Mr). Aikio 2015, 64: PU **tälwä* (> Mr). Zhivlov forthc.: PU **tälwä* > PM **telə*. || ³ Aikio 2022, 29–30: PU **tolwa-* (> ? Mr). Zhivlov 2014, 127: PU **talwa-₁* > PM **tola-*. Aikio 2015, 56: PU **talwa-* (no Mr cgn).

Rule 3.2: PU *-lj- > pre-PM *-l- > PM *-l-

A very early
development

PU **neljä* ‘four’¹ > pre-PM, PM **nil* ‘id.’ > M *nâl* | H *nəl*;

Pre-PM **nijl₃* would yield PM **nîjl* > H *nil*.

PU **peljä* ‘ear’² > pre-PM, PM **pil-əkš* ‘ear’ > M *pâlâš* | H *pələš*;

Pre-PM **pijl₃* would yield PM **pîjl-əkš* > H *piləš*.

¹ UEW 315–316: FU **neljä* (**neljä*) (> Mr). Aikio 2014a, 154; 2014b, 83: PU **neljä* > PM **nil*. Zhivlov 2022, 369: PU **neljä* > PM **nil*. || ² UEW 370: FU **peljä* (> Mr). Aikio 2014a, 154: PU **peljä* > PM **piləkš*. Zhivlov 2022: PU **peljä* > PM **piləš*.

Rule 3.3: PU *-lk- > pre-PM *-lK- > PM *-l-

PU **ćelkä* ‘back’¹ > pre-PM **śilK*(3) > PM **šil-əž* ‘waist’ > M *šâlâž* | H *šaləž*;

PU **jalka* (~ **jelka*) ‘foot’² > pre-PM **jɔlK*(λ) > PM **jɔl* ‘id.’ > M *jol* | H *jal*;

PU **mälki* ‘breast’³ > pre-PM **melK*(ə) > PM **mel* ‘id.’ > M *mel* | H *mel*;

PU **kulki-* ‘to run’⁴ > pre-PM **kɔlK-* > **kɔl-δ-al-* [CAUS/INTENS-INCH] > PM **kuδal-* ‘id.’ > M *kuδal-* | H *kâδal-*;

Cf. PM **υlδâ-* ‘to pray’ : [FREQ] **υδ-âl-* with the same development *-lδVl-* > *-δVl-*.

PU **palka* ‘village’⁵ > pre-PM **pɔlK*(λ) > Merya =*bɔl* (in place names);

PU **tulka* ‘feather’⁶ > pre-PM **tɔlK*(λ) > PM **tɔl* ‘id.’ > M =*tâl* in *pâs=tâl* ‘feather’;

PU **węlka-* ‘to descend’⁷ > pre-PM **wɔlK*λ- > PM **βɔlâ-* ‘id.’ > M *wolâ-* | H *walâ-*.

¹ UEW 772: FW **śelkä* (> Mr). Aikio 2014a, 154: PU **śelkä* > PM **šiləž*. || ² UEW 88–89: FU **jalka* (> Mr). Zhivlov 2014, 127: PU **jalka*₂ > PM **jâl*. Aikio 2015, 64: PU **jalka* / **jilka* (> Mr). || ³ UEW 267: FU **mälke* (**mäl̥ye*) (> Mr). Zhivlov forthc.: PU **mälki* > PM **mel*. || ⁴ UEW 679: FP **kutt3-* (*kott3-*) (> Mr). UEW 198: PU **kulke-* (no Mr cgn). Aikio 2014a, 148: PM **küdala-* (no Ur etym). Aikio, 2018, a [comment](#) in J. Pystynen’s blog: Mr < ? PU **kunti-*. Zhivlov forthc.: PU **kulki-* (no Mr cgn). || ⁵ UEW 351: Ug., ? FU **paly3* (no Mr cgn). Zhivlov 2014, 128: PU **palka*₂ (no Mr cgn). Napol’skich 2016, 182: Merya -*бoл* = Hu. *falu*. || ⁶ UEW 535–536: PU **tulka* > ? Mr (“die Zusammengestellung stößt jedoch auf Schwierigkeiten”). Aikio 2014a, 146: PM **pistal* (no Ur etym). Zhivlov forthc.: PU **tulka* (no Mr cgn). || ⁷ UEW 535–536: FU **walka-* (> Mr). Zhivlov 2014, 133: PU **wilka*₁₋ > PM **wäle-*. Aikio 2015, 60: PU **wilka-* (> Mr).

Rule 3.3: PU *-lk- > pre-PM *-lK- > PM *-l-

New suffixation:

PU *w_ɛlki ‘light’¹ > pre-PM *wɔlK(â) > PM *βɔl-γâ ‘id.’ > M woly-aka | H walyâ;

Cf. forms such as PM *vžar = *vžar-γâ ‘green’.

PU *salka- ‘to stand’² > pre-PM *SɔlKɹ- > PM *šɔl-γâ- [REFL] ‘id.’ > M šoyâ- | H šalyâ-.

Cf. forms such as M dial. ijarâ- = ijar-γâ- ‘to settle down’.

*-lK- > -l- is a late development. Relative chronology:

- (1) PU *ɛ > early pre-PM *ɔ before clusters with a velar or a labial (incl. PU *lk);
- (2) early pre-PM *ɔ > *ô before pre-PM *-l#, *-lV;
- (3) late pre-PM *-lK- > PM *-l-.

¹ UEW 554–555: FW, ? FU *walk₃ (> Mr). Zhivlov 2014, 136: PU *w_ɛlki > PM *w_ɛlγâðâ. Aikio 2015, 59: PU *w_ɛlki (> Mr). || ² UEW 431: FU *salk₃- (> Mr). Aikio 2015, 65: PU *salka- / *solka- / *salki- (> Mr). Zhivlov 2022: PU *salka- > PM *š_ɛlγâ-.

Rule 3.4: pre-PM **-v̥lm-* > PM **-vm-*

[Cf. Aikio 2013, 168: “The development **lm* > **m* is regular in Mari at least after back vowels”.]

PU **ku/olmi* ‘three’¹ > pre-PM **kvlm(â)* > PM **kvm* ‘id.’ > M *kum* | H *kâm*;

PU **kolmi* ‘tree bark’² > pre-PM **kvlm-âžâ* > PM **kvmâž* ‘birch bark’ > M *kumâž* | H *kâmâž*;

PU **jilma* ‘air; weather’³ > pre-PM **jvlmâ* > PM **jvmâ* ‘God; sky’ > M *jumö* | H *jâmâ*.

¹ UEW 174: FU **kolme* (**kulme*) (> Mr). Aikio 2014a, 156–157: PU **kolmi* ~ **kulmi* > PM **kŭm*. Zhivlov 2022, 370: PU **kolmi* ~ **kulmi* > PM **kŭm*. || ² Aikio 2013, 168–169: PU **kolmis* > PM **kŭmăž*. || ³ UEW 81–82: FU **ilma* (no Mr cgn). UEW 638: FW **juma* (> Mr). Zhivlov forthc.: PU **jilma* (no Mr cgn).

4. The development of PU $^*_{-n-}$, $^*_{-\eta-}$

Rule 4.1: PU *-Vna > PM *-Vn(â)

PU *muna ‘egg’ > PM *munâ ‘id.’ > M munö | H mânâ;

PU *puna ‘fur; body hair’ > PM *pun ‘id.’ > M pun | H pân;

PU *puna- ‘to plait’ > PM *punâ- ‘id.’ > M punâ- | H pânâ-;

PU *tuna- ‘to learn’ > PM *tun(â)- ‘id.’ > M tun-âktâ-, tuń-em- | H tâmeń-.

Rule 4.2: PU *-Vnä > PM *-Vńa

PU *künä ‘elbow’ > PM *kń-er ‘id.’ > M kâńer | H kâńer;

PU *minä ‘I’ > PM *mińa ‘id.’ > M mâj, dial. mâńě, mińa | H mæń;

PU *tinä ‘you (sg.)’ > PM *tińa ‘id.’ > M tâj, dial. tâńě | H tæń.

The development of PU *Vni: current interpretation

PU *-n- > PM *-0- in front-vocalic PU *i-stems¹

Rule 4.3: PU *-n- > PM *-j- in any PU *i-stems

PU *meni- ‘to go’ > PM *mîjə- ‘to come (there)’ > M mijə- | H miə-;

PU *peni ‘dog’ > PM *pîj ‘id.’ > M pij | H pi;

PU *weni- ‘to stretch (intr.)’ > PM *βîj ‘straight’ > M βij | H βi;

PU *nijni ~ *niñi ‘bast’² > PM *ñîj ‘id.’ > M ñij | H ñi;

PU *tejniši ‘pregnant (of an animal)’³ > pre-PM *tyjəž > PM *tûjəž ‘id.’ > M tûžö, dial. tûjüž | H tûž;

¹ Aikio 2014b, 91. || ² Aikio 2014a, 91: ? PU *ñijni > PM *ni. Zhivlov forthc.: PU *niñi > PM *ni. || ³ Aikio 2014b, 90–91: IE > PU *tejniš > PM *tüöz.

Rule 4.3: PU *-n > PM *-j- in any PU *i-stems

PU *kani- ‘to go’ > pre-PM *kɔj-št- [FREQ] > PM *kɔšt- ‘to walk’ > M *košt-* | H *kašt-*;
Cf. PU *čoji- ‘to sound’ > pre-PM *śɔj-ktâ- [CAUS/INTENS] > PM *śɔktâ- ‘id.’ for the same contraction *-ɔjCC- > *-ɔCC-.

PU *pɛni- ‘to put’ > pre-PM *pɣj-št+tə- [FREQ+CAUS/INTENS] > PM *pîjštə- ‘id.’ > M *pâštə-* | H *pištə-*;

For the first-syllable vowel development, cf. PU *pɛci ‘mitten’ > pre-PM *pɣjśa > PM *pîjž ‘id.’.

A possible counterexample: PU *sɛni ‘sinew, vein’ > M *šön* | *šün* ‘id.’.

Solution: **Rule 4.4:** pre-PM *-wn(ə) > PM *-wn. Cf.:

PU *kuwni ‘lye’ > pre-PM *kuwn(â) > PM *kôwn ‘id.’ > M *kon* | H *kon*;

PU *ćuwni ‘clay’¹ > pre-PM *śuwn(â) > PM *šûwn ‘id.’ > M *šun* | H *šun*;

! PU *sɛni-w ‘sinew, vein’ > pre-pre-PM *sɣjnwa > *pre-PM *sɣwn(ə) > PM *sûwn ‘id.’.

¹ Aikio, UED, 146: ? PU *ćuwini(w) (> ? Mr).

Rule 4.5: PU $*(L)VnC-$ [where L represents a sonorant or *0-] > pre-PM $*(L)VC-$

Rule 4.6: PU $*(T)VnC-$ [where T represents an obstruent] > pre-PM $*TVnC-$

PU **jäntiŋi* ‘bowstring’ > pre-PM, PM **jɪδän* ‘string (in a carding bow)’ > M *jâðan* | H *jəðäng*;

PU **lonti* ‘notch’¹ > pre-PM, PM **lɔðâ* ‘id.’ > M *loðö* | H *laðâ*;

PU **lunta* ‘(aquatic) bird’ > pre-PM **lɔðɒ* > PM **lɔðâ* > M *luðö* | H *lâðâ*;

PU **wanča* ‘root’ > pre-PM **wɔžɒ* > PM **wɔž* ‘id.’ > M *wož* | H *waž*;

PU **ońća* ‘share (of meat)’² > ? pre-PM, PM **už-aš* ‘share’ > M *užaš*;

PU **anti* ~ **onta* ‘sprout’³ > pre-PM, PM **ɔð-ar* ‘id.’ > M *oðar* | NW *aðar*;

¹ Aikio, 2018, a [comment](#) in J. Pystynen’s blog: PU **lonti* > PM **lâda*. || ² Aikio, UED, 74: PU **ońća* > PM **užaš*. || ³ Aikio, UED, 17–18: PU **anti* / **onta* > PM **âdar*.

Rule 4.5: PU $*(L)VnC-$ [where L represents a sonorant or *0-] > pre-PM $*(L)VC-$

Rule 4.6: PU $*(T)VnC-$ [where T represents an obstruent] > pre-PM $*TVnC-$

PU **kan-ta-* ‘to carry’ > pre-PM **kɔndɒ-* > PM **kɔndâ-* ‘id.’ > M *kondâ-* | H *kandâ-*;

PU **kunta* ‘hunting party’ > pre-PM, PM **kɔnd-em* ‘area, region’ > M *kundem* | H *kândem*;

PU **ćonta* ‘dung’ > pre-PM **śɔndɒ* > PM **šɔndâ* ‘toilet; urine’ > M *šondǒ* | H *šanδâ*;

PU **penčä* ‘pine’ > pre-PM **pɣnčɜ* > PM **pɣnčə* ‘id.’.

Rules 4.5, 4.6: Possible counterexamples

PU **lenti* ‘lowland’;

– cannot be the source of PM **londâ* ‘lowland’, rather PU **lenti* > pre-PM **lyjδa* > PM **lîjδa* ‘lowland’¹ (although PM **î* seems to be irregular).

PU **mântä-* ‘to let escape, to make a mistake’;

– is hardly the source of PM **mendə-* ‘to dawdle; to languish’². The semantic match is uncertain, and HM *mendə-* cannot be separated from HM *menduk* and *menduzâ* ‘dawdler’. Both are obviously borrowed from Rus. dial. *ментюк* ‘burbot’, (metaph.) *ментюх* ‘clumsy or lazy person’ (!) and Rus. dial. *ментуз* ‘burbot’, (metaph.) ‘fat, obese person’, correspondingly [CPHG 18: 110]. Given this, HM *mendə-* should rather be explained as a denominal verb: HM *men* ‘burbot’ < Rus. dial. *мен* ‘burbot’ [Ibid., 106], (!) *мень* ‘burbot’, ‘clumsy or lazy person’ [Ibid., 111].

PU **ňanča-* ‘to stretch’ > PM **nũ(j)ňčak* ‘dough’;

– the vowel correspondence is, too, problematic. Is the comparison correct at all?

PU **ońćca* ‘front’ > PM **ɔńćâl* ‘id.’;

– a specific development before **ćć*?

PU **wanča-* ‘to step over’ > PM **wɔnčâ-* ‘id.’

– does the PM form rather reflect the variant PU **wančča-*? Cf. the previous case.

¹ The comparison is first proposed by A. Aikio in a [comment](#) to J. Pystynen’s blog. || ² Proposed by A. Aikio in the same comment.

Rule 4.7: pre-PM **TÄńC-* [where Ä represents an unrounded front vowel] > PM **TÊjC-*

PU **käńcä-* ‘to freeze’ > pre-PM **keńžə-* > PM **kêjžə-* ‘id.’ > H *kižə-*;

A reflex of IE **b^hend^h-* ‘to bind’¹ > **penti-* > pre-PM **pińd-* > PM **pî(j)δ-* ‘id.’ > M *piδ-* | *piδ-*;

PU **-(i)nti-*, a frequentative suffix > pre-PM **-əńd-* > **-əjd-* > PM **-eδ-*, a frequentative suffix (with a regular pre-PM **-Vj-* > PM **-e-* in a non-first syllable).

Possible counterexamples:

PU **pintili-* ‘to protect’ > PM **piδ-äl-* ‘to protect, intervene’². Based on the new reconstruction, one would expect **pintili-* > pre-PM **pijδ-äl-* > PM **pî(j)δ-äl-*. The Mari word should rather be explained as an inchoative form of PM **piδ(ə)-* <= OChuv. **pyt-* ~ **pit-* < PTK **büt-* ‘to intervene’.

PU **sińcV-* ~ **säńcä-* ‘to sit down’³ > ? PM **šińc-* ‘id.’. Based on the new reconstruction, one would rather expect PM **šijž-*. The shape **šińc-* points to a haplology from pre-PM **šińž-əńc-*, where **-əńc-* is a popular suffix of intensive verb forms.

PU **kenči-* ‘to look for’⁴ > PM **kič-äl-* ‘id.’ – the comparison is probably correct, but the PM reflex is quite unclear.

¹ Aikio 2014a, 138: IE > pre-PM **pänti-* > PM **pida-*. || ² Aikio, 2018, a [comment](#) in J. Pystynen’s blog. || ³ Zhivlov 2014, 129: PU **sińcV-* (> Mr). Aikio 2015, 64: PU **säńcä-* (> Mr). || ⁴ Saarikivi & Metsäranta 2021, 101.

Rule 4.8: pre-PM *-nC# > PM *-C# (a simplification of the word-final cluster)

PU **künči* ‘nail’ > pre-PM **kynč* > PM **kyč* ‘id.’ > M *küč* | H *kač*; PU **künčä-* ‘to scratch’ > pre-PM **kynč-* > PM **kyč-* ‘id.’ > M *küčâš* in *šokšâ=küčâš* ‘sweating sickness’; M *küčâštâ-* | H *kačâštâ-* ‘to feel pain’;

Cf. PM **kynčä-* ‘to dig’, a haplology from pre-PM **kynč-ənčä-* [INTENS].

PU **panča-* ‘to open’ > pre-PM **pɔnč-* > PM **pɔč-* ‘id.’ > M *poč-* | H *pač-*;

PU **ponči* ‘tail’ > pre-PM **pɔnč* > PM **pɔč* ‘id.’ > M *poč* | H *pač*;

PU **kuńci-* ‘to urinate’ > pre-PM **kvnž-* > PM **kvž-* ‘id.’ > M *kuž-* | H *kâž-*; PU **kuńci* ‘urine’⁵ > pre-PM **kvnž* > PM **kvž* ‘id.’ > M dial. *kůž=* | H *kâž=*;

PU **šenti-* ‘to root out (trees)’ > pre-PM **syjnδ-* > PM **sũ(j)δ-* ‘id.’;

PU **kunti* ‘length’¹ > pre-PM **kvnd* > PM **kuδ* ‘id.’.

Cf. M *kut*, H *kât* < ? **kvt*, but the *-t is probably secondary; dial. *tu=γudeštâ* ‘at this time’ points to the expected **kuδ*.

¹ Saarikivi & Metsäranta 2021, 101: PU **kunti* > PM **kūt*.

Rule 4.9: PU **-ŋi* > PM **-j* after a PU unrounded front vowel

PU **jäŋi* ‘ice’ > pre-PM **(j)Ij* > PM **îj* ‘id.’ > M *ij* | H *i*;

PU **piŋi* ‘tooth’ > pre-PM **pɣj* > PM **püj* ‘id.’ > M *püj* | H *pü*;

PU **päŋi* ‘end; head’¹ > pre-PM **pij* ‘arrow head’ > PM **pîj-aks* ‘arrow’.

The velar nasal retains in pre-PM **-wŋ(ə)* (cf. pre-PM **-wn(ə)* > PM **-wn*):

PU **wäŋiw* ‘son-in-law’ > pre-pre-PM **wäŋwi* > pre-PM **wewŋə* > **wejŋə* > PM **βêjŋə* ‘id.’ > M *βeŋě* | H *βiŋə*. PU **wäŋiw* ‘son-in-law’¹ > pre-pre-PM **wäŋwi* > pre-PM **wewŋə* > **wejŋə* > PM **βêjŋə* ‘id.’ > M *βeŋě* | H *βiŋə*.

¹ The comparison works in M. Zhivlov’s reconstruction (PU **päŋi*; Zhivlov 2022, 365), but not in A. Aikio’s (**peŋä*; Aikio 2022, 13).

Retention of PU intervocalic *-ŋ- in other stem types

PU *čaŋa- ‘to hit’ > pre-PM, PM *čɔŋâ- ‘to hack; to make a notch’ > M čoŋâ- | H čangâ-;

PU *kaŋa-ɣla ‘armpit’ > pre-PM *kɔŋla > PM *kôŋla ‘id.’ > M koŋla | H kongâla;

PU *aŋi ‘mouth’ > pre-PM *ɔŋ=l-aks > PM *ôŋlaks ‘chin, jaw’ > M oŋâlaš | H ongâlaš;

PU *saŋi- ‘to enter’ > pre-PM *šɔŋ(â)- > PM *šôŋ(â)- > M šoŋ-al- | H šang-al-.

PU *poŋi ‘bosom’ > pre-PM *pɔŋ-ɔš > PM *pôŋɔš ‘id.’ > M pomâš | H pongâš;

PU *šoŋi ‘foam’ > pre-PM *šɔŋ > PM *šôŋ ‘id.’ > M šoŋ | H šong;

PU *tüŋi ‘base’ > pre-PM, PM *tyŋ ‘id.’ > M tüŋ | H tang.

5. The development of PU $^*-\delta-$, $^*-\delta'-$

Current interpretation

PU *-δ- > PM *-δ- ~ *-θ-, PU *-δ'- > PM *-δ- ~ *-θ-¹

Rule 5.1: ~~PU *δ, *δ' > PM *θ~~ PU *-δ-, *-δ'- > pre-PM, PM *-w- / {*-j-}

PU *adi- ‘to sleep’² > pre-PM *ɔw-l-mλ [FREQ-PTCP.PASS] ‘*a place to sleep’ > PM *ôwlmâ > M, NW olmö ‘place’, H olm-anga ‘bench’ (anga ‘board’). TschWb 448: H olman̄ga (!) ‘Schlafbrett (an der Wand befestigte breite Bank, auf der man liegen kann)’;

PU *að-ma ‘sleep’³ > pre-PM *ɔwmλ > PM *ôwmâ ‘sleep; dream’ > M, NW omö, H om;

PU *jadā- ‘to do magic’⁴ > pre-PM *jɔwλ > PM *jôw ‘magic, spell’ > M ju | H jo;

PU *kudā- ‘to weave’⁵ > pre-PM *kɔwλ- > PM *kôwâ- ‘id.’ > M kuâ- | H koâ-;

[PU *wädimi ‘marrow’⁶ > PM *βêjm ‘brain’ > M βem | H βim is probably a false etymology; the latter is most likely a Bulghar Turkic loan [Savelyev 2022: 26]].

¹ Aikio 2014b, 85–86: “unexplained duality”. Zhivlov forthc.: “unknown conditions [for PM *-δ- ~ *-θ-]”. || ² UEW 334: FU *oδa- (no Mr cgn). Zhivlov 2014, 130; forthc.: PU *adi- ‘to sleep’ (no Mr cgn). Aikio 2015, 51: PU *adi- (no Mr cgn). || ³ UEW 335: FU *oδa-mɜ (> Mr). Zhivlov 2014, 126: PU *aðma₁ > PM *omə. Aikio 2015, 53: PU *adma (> Mr). || ⁴ Aikio 2022, 24: PU *jada- (no Mr cgn). || ⁵ UEW 675: FP *kudā- (> Mr). Aikio 2014b, 85: PU *kudā- (> Mr). Zhivlov forthc.: PU *kudā- > PM *koə-. || ⁶ UEW *wiδɜ(-mɜ) (> Mr). Aikio 2014b, 85: PU *widimi (> Mr). Zhivlov 2022, 373: PU *wädimi > PM *wim(ə).

Rule 5.1: PU $*-\delta-$, $*-\delta'-$ > pre-PM, PM $*-w-$ / $\{*-j-\}$

PU $*wu\delta'i$ 'new'¹ > pre-PM $*(w)\upsilon w$ > PM $*\hat{u}w$ 'id.' > M *u* | H *u*;

PU $*c\ddot{u}\delta'i$ 'coal'² > pre-PM $*s\gamma w(\partial)$ > PM $*\check{s}\hat{u}w$ > M *šüj* | H *šü*;

H *šü* points to PM $*\check{s}\hat{u}w$ unequivocally. PM $*\check{s}\hat{u}j$ would yield H *sü*.

PU $*c\ddot{u}\delta'ämi$ 'heart'³ > pre-PM $*s\gamma w(\exists)m(\partial)$ > PM $*\check{s}\hat{u}wm$ 'id.' > M *šüm* | H *šüm*;

H *šüm* points to PM $*\check{s}\hat{u}wm$ unequivocally. PM $*\check{s}\hat{u}jm$ would yield H *süm*. Cf. a quasi-minimal pair: PU $*c\epsilon mi$ 'fish scale' > pre-PM $*s\gamma jm(\partial)$ > PM $*\check{s}\hat{u}jm$ 'bark; peel' > M *šüm* | (!) H *süm*.

PU $*c\acute{o}\delta'ka$ 'a k. of duck'⁴ > pre-PM $*s\acute{o}w\omega a$ > PM $*\check{s}\hat{o}we$ 'id.' > M =*šue* | H =*šoe*.

¹ UEW 587: FU $*wud'e$ (> Mr). Aikio 2014b, 86: PU $*wud'i$ (> Mr). Zhivlov forthc.: PU $*wu\delta'i$ > PM $*u$. || ² UEW 477–478: PU $*si\delta'e$ ($*s\ddot{u}\delta'e$) (> Mr). Aikio 2014a, 134: PM $*s\ddot{u}$. Aikio 2014b, 86: PU $*s\ddot{u}\delta'i$ (> Mr). Starostin et al. 2017: PU $*f\ddot{u}\delta'yi$ (> Mr). || ³ UEW 477: PU $*si\delta\ddot{a}(-m\exists)$ ($*s\ddot{u}\delta\ddot{a}(-m\exists)$) (> Mr). Aikio 2014a, 153: PM $*s\check{s}üm$. Zhivlov forthc.: PU $*cV\delta'ä$, der. $*cV\delta'ä.m$ > PM $*s\check{s}üm \sim *s\check{s}üm$. || ⁴ UEW 482: FU $*s\acute{o}\delta ka$ (> Mr). Zhivlov 2014, 136; forthc.: PU $*c\acute{o}\delta'ka$ > PM $*s\acute{o}e$. Aikio, UED, 130: $*c\acute{o}\delta ka$ > PM $*s\acute{o}e \sim *s\acute{o}e \sim *s\acute{o}e$.

The alleged change PU *-δ-, *-δ'- > PM *-δ-: false etymologies

PU **puδ'a-* 'to hit, split, break'¹ > PM **puδ-ešt-* 'to burst, split (intr.)' > M *puδešt-* | H *pâδešt-*, PM **puδârtâ-* 'to break (tr.)' > M *puδârtâ-* | H *pâδârtâ-*;

Instead, PM **puδ-ešt-* should be explained as a verb derived productively from the PM ideophone **pvt* <= Old Chuv. > Chuv. *pât* 'burst'. PM **puδârtâ-* 'to break (tr.)' is related to PM **puδârγâ-* 'to break (intr.)', and both go back to the PM ideophone **puδâr* <= Old Chuv. > Chuv. *pâdâr* 'crackling'. For the semantics, cf. forms such as M *puδâr-γ-âl-maš* 'crackling'. Cf. also shared derivatives such as Chuv. *pâdârğa* 'fragile, brittle' and Mari dial. *pâδârka* 'crumb, granule'.

PU **täwδi* ~ **täxδi* 'full'² > PM **tîć* 'id.' > M *tić* | H *cic*.

To justify the Uralic etymology, one should posit the change **wδ* ~ **xδ* > **jδ*, which would be expected after a front unrounded vowel, but the further development **jδ* > **jt* > **ć* includes an ad hoc change **jδ* > **jt*. In addition, **î* is an unlikely PM reflex in the case of PU **CäwCV* > pre-PM **CäjCV*; one would expect PM **ê*. PM **tîć* 'full' = Chuv. *tâžâ*, *tažâ* 'tight, stiff', *tânc* 'fully, completely' < Chuv. *tâc*, an ideophone for 'quick action', 'hit, strike', 'falling object', etc. Generally, terms for 'full; tight' being based on ideophones is a very popular model in the Volga-Kama area (Arkhangelskiy forth.). Cf. cases such as Chuv. *jâlt* 'quick action {idph.}' > *jâlt* 'fully, completely', Chuv. *lać* 'hit, strike {idph.}' > *lać* 'tightly', etc.

¹ Aikio 2006, 22; 2014a, 156; 2014b, 86: PU **puδ'a-* > Mr. || Aikio 2014^a, 155: PU **täwδi* > PM **tić*. Zhivlov forthc.: PU **täxδi* > PM **tić*.

The alleged change PU $*-\delta-$, $*-\delta'-$ > PM $*-\delta-$: revised reconstructions

PU $*-\delta V-ti-$, $*-\delta'V-ti-$ (where $*-ti-$ is a verb suffix¹) > PM $*-w-\delta-$:

PU $*ka\delta'a-$ ‘to leave’ > pre-PM $*k\omega\lambda-$ > PM $*k\hat{o}w-\delta-$ [REFL] ‘to stay’ > M $ko\delta-$ | H $ko\delta-$,
PM $*k\hat{o}w-\delta\hat{a}-$ [CAUS] ‘to leave’ > M $ko\delta\hat{a}-$ | H $ko\delta\hat{a}-$, PM $*k\hat{o}w-lt\hat{a}-$ [MOM] ‘to throw’ > M
 $kolt\hat{a}-$ | H $kolt\hat{a}-$;

PU $*le\delta i-$ ‘to be afraid’ > pre-PM $*l\gamma(j)w-\delta-$ > PM $*l\ddot{u}w\delta-$ ‘id.’ > M $l\ddot{u}\delta-$ | H $l\ddot{u}\delta-$;

PU $*\acute{c}o\delta'a$ ‘war’ > pre-PM $*\acute{s}v\omega\lambda-$ > PM $*\acute{s}\hat{u}w-\delta-$ ‘to curse, scold’ > M $\acute{s}u\delta-al-$ | H $\acute{s}u\delta-al-$.

{Cf. cases such as PM $*l\hat{u}w-\delta-$ ‘to count’ < PU $*luki-$ ‘to count’ + $*-ti-$, where the need to interpret PM $*-\delta-$ as a verb suffix is undeniable.}

+ Cf. the case of PM $*\acute{s}\hat{o}w\delta\hat{a}$ ‘lung’ > M $\acute{s}o\delta\check{o}$ | H $\acute{s}o\delta\hat{a}$.

– reconstructed traditionally as $*\acute{s}o\delta\hat{a}$ and compared to Komi dial. $\acute{s}\acute{e}l$, $\acute{s}\acute{e}l'$ ‘gills’ in [UEW 786]. However, cf. also Komi dial. $t\acute{s}\acute{e}l'$ ‘crack, aperture; gills’, which makes inevitable the following loan etymology for the Kom word: < Rus. $\acute{u}\acute{e}l\acute{b}$ ‘crack, aperture’, dial. (Perm governorate; Даль) $\acute{u}\acute{e}l\acute{b}y\acute{a}$ (pl.) ‘gills’. Mari $*\acute{s}\hat{o}w\delta\hat{a}$ ‘lung’ should be rather compared to PSam $*suovd\acute{e}$ ‘gills’ (as in [UEW 754]) < ? PU $*\acute{s}awta$ (J. Pystynen, p.c.). For an alternative etymology of the Samic word (pre-Samic < PGerm $*saupa-$ ‘pit’), see [Aikio 2006, 12].

¹ Aikio 2021, 171: “There is a reflexive verb suffix of this shape [PU $*-ti-$]”.

Summary I: the reflexes of PU intervocalic consonants in Mari

PU	PM	PU	PM	PU	PM
*p	*-β- / *-p#	*š	*ž (~ *š)	*ń	? / *j
*t	*δ	*δ	*w / {*j}	*ŋ	*ŋ / *j
*k	*w / *j	*δ'	*w / {*j}	*l	*l
*č	*č	*x	*w / {*j}	*r	*r
*ć	*ž / *ź	*m	*m	*w	*w / *j
*s	*z	*n	*n / *ń / *j	*j	*j

Summary II: the reflexes of PU medial consonant clusters in Mari – 2

	<u>2nd</u> <u>cons.</u>	*p	*t	*k	*č	*ć	*s	*š	*m	*n	*ń	*l	*r	*w	*j
<u>1nd</u> <u>cons.</u>															
*x			*wδ / {*jδ}				*wz								*w
*m		*-wβ- /*-wp#	*mδ											*wm	
*n			*nd / *δ		*nč /*č										
*ń						*ž /*jž									
*ŋ			*ŋd	*ŋg			*ŋVž	*ŋVž						*ŋVw > *wŋ	
*l				*l					*lm/*m					*l	*l
*r		*rβ	*rδ	*rγ						{*rtŋ} /*rtń	*rtń			*wr	*jr ?
*w			*wδ / {*jδ}							wn		{*wl}/*l	{*wr}/*r		
*j					*jč				*jm	? / *j				*w (< +wj)	



Спасибо / Thank you / Кугу тау