Proto-Dravidian Origins of the Kuṛux-Malto Past Stems

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Abstract   In the closely related Dravidian languages Kuṛux and Malto, the verbs have lexically determined past stems, formed from the verb bases with various suffixes such as -*y*, -*c*, -*j*, -*s*, -*t*, -*ṭ* and -*ḍ*. There are also past stems with zero, with or without gemination of the final consonant. The past suffixes *-t, *-tt, *-i, *-c, *-cc and *-nt are reconstructed for Proto-Dravidian, and we examined if the Kuṛux-Malto past stems are explainable from them. We found that some past stems are derived from affixation of Proto-Dravidian *-t. The close distributional resemblance of Kuṛux-Malto -y to South Dravidian *-i(ṉ) suggests their common origin. We also confirmed that the suffixes *-c and *-cc need to be posited for Proto-Kuṛux-Malto, while there are no clear reflexes of the suffixes *-tt and *-nt. Since *-c and *-cc are also found in the converb formation of South-Central Dravidian, they might be a shared innovation. The geminating past, which is probably an innovation of Kuṛux-Malto, gave rise to the new, productive past stem class with zero.

Keywords   Proto-Dravidian. Kuṛux. Malto. Past stem. Comparative reconstruction.

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1 Introduction

Kuṟux (kuṟux or kŭṟux, also known as Oraon) and Malto are Dravidian tribal languages spoken mainly in the Indian states of Jharkhand, Chhattisgarh, Odisha and West Bengal, hundreds of kilometres away from the nearest sister languages, Gondi and Kui. While Kuṟux and Malto share nearly a half of the basic vocabulary and form a close subgroup, they are divergent from the other Dravidian subgroups, i.e. South Dravidian, South-Central Dravidian, Central Dravidian and Brahui. Kuṟux and Malto were once grouped under 'North Dravidian' with Brahui, but McAlpin (2003) and Kobayashi (2022) cast doubts on the putative shared innovations of Kuṟux-Malto and Brahui, i.e. split of Proto-Dravidian velar stops into velar and uvular stops, and the finite past with *-k, respectively.

Each verb base of Kuṟux and Malto has a past stem formed with a lexically determined past suffix. The past suffixes of Kuṟux and Malto do not encode transitivity, which is signalled by a geminated stop in some other Dravidian languages, e.g. Tamil *kiẓi-nt-* 'to be torn' vs *kiẓi-tt-* 'to tear' < *-ntt (*DEDR* 1581); Telugu *kāgu* 'to be heated' vs *kācu* 'to heat' (*DEDR* 1458) where *c* is traced back to the palatalised past suffix *-tt (Krishnamurti 2003, 193). A finite verb consists of a verb base or a past stem, a tense suffix, and a pronominal suffix signalling agreement in person, number and gender with the nominative subject. A finite past form contains the past tense suffix -*k* after the past stem in the first and second persons; since a past stem usually contains a past suffix, a finite past is often doubly characterised for the past tense in the first and second persons. Kobayashi and Tirkey (2017, 121-5) grouped the verbs into four classes by the synchronic criteria of the past stem formation. In this paper, we will trace the origins of the Kuṟux and Malto past stems by comparing them with those in other Dravidian languages, and try to classify the Kuṟux and Malto verbs by the historical origins of their past stems. For each Dravidian language, there are unique criteria of classifying the past forms, and there is no consensus on the number of the conjugation classes in Proto-Dravidian (Steever 2020, 22). However, the irregular and non-uniform alternation patterns some languages show in the past forms provide valuable evidence for reconstruction and subgrouping. Since the Tamil-Malayalam-Toda-Kota-Koḍagu subgroup (henceforth 'Tamil-Koḍagu subgroup') of South Dravidian shows the richest variety of past stems, we will compare the past stem formations of Kuṟux-Malto primarily with those of this subgroup. In Kobayashi (2011, 41), we posited *-t, *-c, *-cc, *-nc, *-y, gemination, and

zero as the past stem types of Proto-Kuṛux-Malto. Kobayashi (2022, 13) argued that the Kuṛux-Malto past tense suffix *-k < PDr. *-kk was originally a predicative adjective suffix also found in Pengo. In this paper, we argue that the Kuṛux-Malto past stems are grouped into four classes based on their suffixes, i.e. two inherited classes, the *-t past and the *-y past; and two classes that were extended by innovation, the *-c/*-cc past and the zero past.

2 The Past Stems of Kuṛux-Malto

2.1 Coronal Past Stems

Kuṛux and Malto have past stems ending in a coronal obstruent, i.e. *t, ṭ, d, ḍ* or *s*, grouped under Class 4 in Kobayashi and Tirkey (2017, 124). This is a closed class, and the past stems of this class show diverse final consonants. Most verb bases of this group end in the rhyme -V̆C, but (10) Kṛx. *põyy-* and (11) Mlt. *pūn-* have -VXC (= VVC or VCC) rhymes.

(1) Mlt. *ãh-/ at-* 'to beat the drum', Kṛx. *ass-/* (*assy-*) 'to play on, to sound', *DEDR* 320, Tamil *aṛai/ -nt-* 'to beat' etc. From PDr. *aṯ-/ *aṯ-t-. Malto *h* from PDr. *ṯ* is also found in (8) *teh-* and (9) *peh-*.

(2) Kṛx. *uy-/ uss-* 'to plough', Mlt. (*us-/*) *us-*, (*usy-*) 'to turn up the soil', *DEDR* 688, Tamil *uẓu/ -t-* 'to plough', etc. From PKM *uy-/ *us- < *uy-/ *uc- < *uy/ *uy-t- < PDr. *uẓ/ *uẓV-t- (PDr. *ẓ > PKM *y as in *kiyyā* from PDr. *kiẓ-V, *DEDR* 1619, Pfeiffer 2018, 376, Kobayashi 2020, 478)

(3) Kṛx. *on-/ oṇḍ-*, Mlt. *ōn-/ oṇḍ-* 'to drink'; *DEDR* 600, Tamil *uṇ/ uṇṭ-* 'to drink', Konḍa *uṇ-/ uṭ-* 'to drink', Parji *un-/ uṇḍ-* 'to drink', etc. From PDr. *uṇ-/ *uṇ-t- (Subrahmanyam 1971, 196)

(4) Mlt. *qal-/ qaḍ-* 'to steal', Kṛx. (*xaṛʔ-/*) *xaḍḍ-*, *DEDR* 1372, Tamil *kaḷ/ kaṭṭ-* 'to steal', Gondi *kallānā* id., Brahui *xalling* 'to lift (cattle)', etc. From PDr. *qaḷ-/ *qaḷ-t- (cf. Tamil *kaṭṭ-* < *kaḷ-tt-). Since Kuṛux also has words reflecting *qaḷ- such as *xalb* 'thief', Kṛx. *xaṛʔ-* is probably a back-formation from the past stem *xaḍḍ-* after the model of (76) *eṛʔ-/ eḍḍ-* 'to invite'.

(5) Kṛx. *xoy-/ xoss-* 'to mow', Mlt. *qoy-/ qos-* 'to reap', *DEDR* 2119, Tamil *koy/ -t-* 'to pluck, cut', Konḍa, Pengo *koy-/ koyt-* 'to reap, cut', etc. From PKM *qoy/ *qoc- < PDr. *qoy-/ *qoy-t- (cf. (68) Kṛx. *xoy-/ xojj-*, Mlt. *qoy-/ qoj-* 'to measure', *DEDR* 2227).

(6) Kṛx. *xot-/ xott-* 'to cut by striking', Mlt. (*qõh-/*) *qot-* 'to cut down', *DEDR* 2091, Tamil *kottu/ -i* 'to hoe', Konḍa *kot-/ kott-* 'to peck', etc. From PDr. *qott-/ *qott-t-.

(7) Kṟx. *kuṟ-/ kuṭṭ-* 'to heat', Mlt. *kuṟ-/ kuṭ-* 'to burn, roast', *DEDR* 2654, Tamil *cuṭu*, (*cuṭuv-*)/ *cuṭṭ-* 'to be hot', Telugu *cū̃ḍu* 'to burn', Kolami *suḍ-/ suṭṭ-* 'to cook', etc. From PDr. **k̂uṭ-/ *k̂uṭ-t-* (Subrahmanyam 2013, 397).

(8) Mlt. *teh-/ tet-* 'to knit, weave', Kṟx. *tess-/ (tissy-)* 'to plait', *DEDR* 3446, Tamil *terṟu/ -i* 'to become intertwined', Kannada *tettu* 'to intertwine'. From PDr. **teṯ-/ *teṯ-t-*.

(9) Kṟx. *pes-/ pett-* 'to pick up', Mlt. *peh-/ pet-* 'to take up'. *DEDR* lists the latter under 4446, Tamil *piṟakku/ -i* 'to heap, pile up', etc., but it should rather be listed with Kṟx. *pes-* under *DEDR* 4423, Tamil *peṟukku/ peṟukki-* 'to gather, to pick up', Konḍa *peṟ-, peRt-* 'to pick, pick up', Parji *ped-/ pett-* 'to pick up' etc. From PDr. **peṯ-/ *peṯ-t-*.

(10) Kṟx. *põyy-/ poss-*, Mlt. *poy-/ pos-* 'to rain', *DEDR* 4407, Tamil *pey/ peyt-*, Koḍagu *poyy-/ pojj-* '(rain) rains', Telugu *pōyu* 'to pour', Kolami *paiyeng* 'to pour', etc. From PDr. **poy-/ *poy-t-*.

(11) Mlt. *pūn-/ puṇḍ-* 'to put on one's own neck', *DEDR* 4361, Tamil *pūṇ/ pūṇṭ-* 'to wear', Konḍa *pūṭ-/ -t-* 'to fasten bullocks to the plough, yoke', etc. From PDr. **pūṇ-/ *pūṇ-t-* with pre-cluster vowel shortening (Subrahmanyam 2013, 398; Kobayashi 2020, 474).

(12) Kṟx. *nal-/ (nalʸ-)*, Mlt. *lal-/ laḍ-* 'to dance', *DEDR* 3612, Kota *nayḷ-/ naḷc-* 'to play', Kannada *nali* 'to dance', etc. From PDr. **naḷ-/ *naḷ-t-*.

All the past stems of these verbs can be explained by positing the Proto-Dravidian past suffix *-t. Since there are cognates which take *-t in South Dravidian as well, such as (3) Tamil *uṇṭ-* and (11) Tamil *pūṇṭ-*, at least some of the Kuṟux-Malto past stems with *-t can be reconstructed for Proto-Dravidian.

2.2   Past Stems with -*y*

In about one third of the verbs, the past stem is formed by adding -*y* to the verb base (Class 1 in Kobayashi, Tirkey 2017, 122). In Kuṟux, all verbs belonging to this class have the rhyme VXC. In a few verbs, such as Kṟx. *pāk-/ pakky-*, Kṟx. *īc-/ iccy-* 'to pull out', Kṟx. *ōl-/ ully-* 'to burn', Kṟx. *xēnd-/ xindy-* 'to buy', (15) Mlt. *ēk-/ eky-*, the long base vowel is shortened before -*y* < *-i, probably by Krishnamurti's rule that a long vowel of a (C)VC base is shortened before a vowel-initial suffix (Zvelebil 1967, 87).

(13) Kṟx. *att-/ atty-* 'to put on', Mlt. *at-/ aty-* 'to wear', *DEDR* 145, Tamil *attu/ -i* 'to unite, to apply (as medicine)', Telugu *attu* 'to be attached or joined', Gadaba *atkap-* 'to mend, join'. From PDr. **att-/ *att-i-*.

(14) Kṛx. *amb-/ amby-* 'to leave', Mlt. *amb-/ amby-* 'to forsake', *DEDR* 329, Tamil *aṉuppu/ -i*, Telugu *anucu, anupu*, Br. *hamping* 'to load up'. From PDr. **anVp-/ *anVp-i-*.

(15) Kṛx. *ēk/ īky-* 'to walk', Mlt. *ēk-/ eky-* 'to go', *DEDR* 871, Tamil *ēku/ -i* 'to go, pass, walk', Telugu *ēgu* 'to go, proceed'. From PDr. **ēkk-/ *ēkk-i-*.

(16) Kṛx. *oṛk-/ uṛky-* 'to strip a tree of its bark', *DEDR* 954, Tamil *oṭukku/ -i* 'to subjugate', Telugu *uḍugu, uḍuvu* to give up, etc. From PDr. **oṭVkk-/ *oṭVkk-i-*.

(17) Kṛx. *kaṭṭ-/ kaṭṭy-* 'to cross', Mlt. *kaṭ-/ kaṭy-* 'to exceed', *DEDR* 1109, Tamil *kaṭa/ -tt-* 'to cross', Toda *kaṛt-/ kaṛty-* 'to take across', Telugu *kaḍacu* 'to pass, elapse', Parji *kaḍp-/ kaḍt-* 'to cross'. From PDr. **kaṭṭ-/ *kaṭṭ-i-*.

(18) Kṛx. *kitt-/ kitty-* 'to rot', Mlt. *kit-/ kity-* 'to rot', *DEDR* 1606, Kota *kit-/ kity-* 'to rot', Telugu *cīku* 'to rot', Kolami *sivk-/ sivikt-* 'to become rotten'. From PDr. **kitt-/ *kitt-i-*.

(19) Kṛx. *kuss-/ kussy-* 'to butt', *DEDR* 1850, Tamil *kuṟṟu/ -i* 'to pound', Gadaba *kurk-/ kuruk-* 'to beat like a carpet', etc. From PDr. **kuṯ-/ *kuṯ-i-*.

(20) Kṛx. *xapp-/ xappy-* 'to swallow', *DEDR* 1222, Tamil *kappu/ -i* 'to gorge', Pengo *kap-/ -t-* 'to bite', etc. From PDr. **qapp-/ *qapp-i-*.

(21) Kṛx. *xalx-/ xalxy-* 'to be wet and muddy', Mlt. *qalɢ-/ qalɢ-* 'to disturb (as water)', *DEDR* 1303, Tamil *kalaṅku/ -i* 'to be confused', Toda *kalx-/ kalxy-* 'to be stirred up', Telugu *kalãgu* 'to be in agitation'. From PDr. **qalVq-/*qalVq-i-*.

(22) Kṛx. *xāy-/ xayy-* 'to become dry', Mlt. *qāy-/ (qāy-)* id., *qayek* 'dry', *DEDR* 1458, Tamil *kāy/ -nt-* 'to grow hot, to be dried up', Manḍa *kāy-* 'to warm oneself', Naiki (Chanda) *kāy-* 'to be hot', *kāp-* 'to heat', etc. From PDr. **qāy-/ *qay-i-*. This might rather belong to the geminating past (§ 2.5 c).

(23) Kṛx. *xett-/ xetty-* 'to shake off', Mlt. *qet-/ qety-* 'to dust, to beat the jungle', *DEDR* 1954, Koḍagu *kett-/ ketti-* 'to gore with horns', Kannada *kettu* 'to quiver'. From PDr. **qett-/ *qett-i-*.

(24) Kṛx. *xoṭṭ-/ xuṭṭy-* 'to break', Mlt. *qoṭ-/ qoṭy-* 'to break', *DEDR* 2063, Tamil *koṭṭu/ -i* 'to beat', Telugu *koṭṭu* 'to beat', Parji *koṭṭ-* 'to strike with an axe', etc. From PDr. **qoṭṭ-/ *qoṭṭ-i-*.

(25) Kṛx. *tīr-/ tīry-* 'to lag behind', Mlt. *tīr-/ tīry-* 'to be off, to go away', *DEDR* 3278, Toda *ti·r-/ ti·ry-* 'to be ended', Telugu *tīru* 'to be finished', Naikṛi *tīr-* 'to be finished'. From PDr. **tīr-/ *tīr-i-*.

(26) Kṛx. *tupp-/ tuppy-* 'to spit', Mlt. *tup-/ tupy-* 'to spit', *DEDR* 3323, Tamil *tuppu/ -i*, Pengo *cup-/ -t-* 'to spit'. From PDr. **tupp-/ *tupp-i-*.

(27) Kṟx. *tumm-/ tummy-* 'to sneeze', Mlt. *tum-/ tumy-* 'to sneeze', *DEDR* 3336, Tamil *tummu/ -i*, Telugu *tummu* 'to sneeze', Naiki (Chanda) *tum-* 'to sneeze'. From PDr. **tum-/ *tum-i-*.

(28) Kṟx. *temb-/ timby-* 'to beg', *DEDR* 3431A, Tamil *tevvu/ -i* 'to beg hard', Telugu *dēvurincu* 'to beg humbly'.

(29) Kṟx. *term-/ tirmy-* 'to roll something upon itself', *DEDR* 3246, Tamil *tirumu/ -i* 'to turn', Telugu *trimmaru* 'to wander, rove, ramble', etc. From PDr. **terVm-/ *terVm-i-*.

(30) Kṟx. *nan-/* (*nañj-*), Mlt. *nan-/ nany-* 'to do', *DEDR* 3589, Tamil *naṇṇu/ -i* 'to do, make'. From PDr. **naṇ-/ *naṇ-i-*.

(31) Kṟx. *nāb-/ nāby-* 'to thresh rice', *DEDR* 3769, Tamil *nēmpu/ -i* 'to winnow', Telugu *nēmu* 'to winnow, sift'.

(32) Kṟx. *nunx-/ nunxy-* 'to swallow', Mlt. *nunɢ-/ nunɢ-*, *DEDR* 3697, Tamil *nuṅku/ -i* 'to swallow, devour', Brahui *nughushing* 'to swallow, devour'. Malto tends to avoid the sequence of *q/ɢ* and *y*. From PDr. **nunVq-/ *nunVq-i-*.

(33) Kṟx. *pāṛ-/ pāṛy-* 'to sing', Mlt. *pāṛ-/ pāṛy-* 'to sing, to bewail', *DEDR* 4065, Tamil *pāṭu/ -i*, Kolami pa·ḍ-/ pa·ḍt- 'to sing', Parji *pāḍ-* 'to sing'. From PDr. **pāṭ-/ *pāṭ-i-*.

(34) Kṟx. *pūx-/ pūxy-* 'to swell', (Mlt. *pūɢ-/ pūɢ-* 'to swell'), *DEDR* 4469, Tamil *poṅku/ -i* 'to boil up', Telugu *poṅgu* 'to bubble up, boil', Konḍa *pog-/ -it-* 'to boil and overflow', Naiki (Chanda) *phugay-* 'to swell'.

(35) Kṟx. *batt-/ batty-* '(of liquids) to decrease', Mlt. *bat-/ baty-* 'to dry up', *DEDR* 5320, Tamil *vaṟṟu/ -i* 'to grow dry', Telugu *vaṭṭu* 'to be dried up', Ollari *vaṭ-* 'to dry, wither', Brahui *bārring* 'to become dry'. From PDr. **vaṭṭ-/ *vaṭṭ-i-*.

(36) Kṟx. *bekkh-/ bikkhy-* 'to be choked', Mlt. *beq-/ beq-* 'to wrestle, to be choked', *DEDR* 5383, Tamil *vikku/ -i-* 'to hiccup', *vikku* 'hiccup', Telugu *vekku* 'to hiccup, sob', Kolami *veksi* 'hiccup'. From PDr. **veqq-/ *veqq-i-*.

(37) Kṟx. *maṟx-/ maṟxy-* 'to get dirty', (Mlt. *maɾɢ-/ maɾɢ-* 'to become black') *DEDR* 4750, Tamil *maẕuku/ -i-* 'to become blunt', Telugu *mraggu* 'to die, perish'.

(38) Kṟx. *mucc-/ muccy-* 'to close', Mlt. *muc-/ mucy-* 'to close', *DEDR* 4915, Tamil *muccu/ -i-* 'to cover', Gondi *muccānā* 'to wrap something round one's body', Pengo *muc-/ mucc-* 'to cover', Naikṛi *mus-* 'to cover', Brahui *must* 'shut, closed'. From PDr. **mucc-/ *mucc-i-*.

(39) Kṟx. *muñj-* 'to finish', *DEDR* 4891, Tamil *muki-/ -nt-* 'to end', *muñcu/ -i-* 'to end', Telugu *mugiyu* 'to be finished', etc.

(40) Kṟx. *murr-/ murry-* 'to thunder', Mlt. *mur-/ mury-* 'to speak', *DEDR* 4973, Tamil *mural-/ muraṉr-, murarru/ murarri* 'to make a sound, cry', Telugu *morayu* 'to sound, resound', Naikṟi *moray-* 'to sound'.

(41) Kṟx. *mulx-/ mulxy-* 'to sink', (Mlt. *mulɢ-/ mulɢ-* 'to dip in'), *DEDR* 4993, Tamil *muẓuku/ -i-* 'to bathe the entire body, to sink', Konḍa *muɽg-/ -it-* 'to be drowned, sink', Gadaba *mulg-* 'to immerse, be immersed'.

In the Dravidian languages with multiple past stem classes, Tamil also forms the past stems with *-i(ṉ)* when the verb base ends in a heavy rhyme or is multisyllabic, and ends in an obstruent or *v*. In fact, there are verb bases reflected in Kuṟux-Malto and the Tamil-Koḍagu subgroup that take the same suffix *-i* in both groups, such as (24) Kṟx. *xoṭṭ-*, Mlt. *qoṭ-* 'to break', (38) Kṟx. *mucc-* 'to close', Mlt. *muc-* 'to close' and (39) Kṟx. *muñj-* 'to finish'. Since Tamil has corresponding past stems with the cognate suffix *-i* in 21 out of the 28 verbs,[1] the distribution pattern as well as the suffix are reconstructible for Proto-Dravidian unless Kuṟux-Malto belongs to South Dravidian.[2]

2.3 Past Stems in *-c*

Many Kuṟux verb bases end in *ʔ*, which is deleted when flanked by two consonants. About 60% of verbs ending in *ʔ* form the past stems with the suffix *-c* (Class 2 in Kobayashi, Tirkey 2017, 123), while the rest have past stems with zero (§ 2.5). A small number of such verb bases, all basic words, end in *-Vʔ*, while the rest end in a consonant of various natural classes followed by *ʔ*.

a. Verbs with the rhyme Kṟx. -Vʔ

(42) Kṟx. *kheʔ-, khẽʔ-/ kecc-* 'to die', Mlt. *key-/ kec-* id., *DEDR* 2426, Tamil *cā/ cett-* id., Kannada *sāy* id., Parji *cay-/ cañ-* id., Brahui *kahing/ kask-* id., etc.

(43) Kṟx. *ciʔ-/ cicc-* 'to give', Mlt. *ciy-/ cic-* id., *DEDR* 2598, Tamil *ī/ -nt-* 'to give to inferiors', Kannada *ī/ itt-* 'to give', Telugu *iccu* id., Konḍa *sī-/ -t-* id., Parji *cī/ ciñ-* id., etc.

(44) Kṟx. *coʔ-/ cōc-* 'to rise', Mlt. *coy-/ cōc-* id., *DEDR* 2867, Konḍa *sō-/ sōt-* 'to start or set out', Pengo *hō-/ -t-* 'to come out', etc.

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1 Out of the 101 Tamil basic verbs given in `https://ilearntamil.com/100-impor-tant-tamil-verbs/`, 43 take the past suffix *-i*. If we assume this to be the average ratio of the Tamil *-i* past, 21 out of 28 is significantly higher than average by Fisher's exact test at *p* <.05, even though we did not list all the putative cognates in *DEDR* here.

2 Cf. Andronov (2003, 215), who comments in parenthesis: "There are no grounds, of course, to equate this vowel with the ancient Dravidian preterite suffix *-i-".

(45) Kṟx. *neʔ-/ nēc-* 'to beg'. If this verb belongs to *DEDR* 3602, Tamil *naya/ -nt-* 'to long for', *nē* 'love', Telugu *naya* 'beauty', etc., it might be a denominative.

(46) Kṟx. *baʔ-/ bāc-* 'to say', *DEDR* 5514, Gondi *vehānā* 'to tell', Pengo *vec-/ vecc-* 'to speak', etc.

(47) Kṟx. *hoʔ-/ (h)occ-* 'to take', Mlt. *oy-/ oc-* 'to take', *DEDR* 984, Tamil *oy/ oynt-* 'to drag along', *uy/ uytt-* 'to carry, take away', Gondi *oy-/ ō-* ' to take, take away', Parji *uy-/ uñ-* 'to carry, take, take away', etc.

(48) Kṟx. *biʔ-/ bicc-* 'to be cooked', (Mlt. *bic-/ bic-* 'to be cooked'), *DEDR* 5517, Tamil *vē/ vent-* 'to burn, be hot', Koḍagu *bey-/ becc-* 'to cook (rice)', Telugu *vēḡu* 'to be fried, grieve', Konḍa *vey-/ vet-* 'to be burned', Naiki (Chanda) *vey-* intr. 'to burn', Brahui *bāsing* 'to become hot', etc.

(49) Kṟx. *beʔ-/ (biccy-)* auxiliary 'to be', Mlt. *beh-, bey-/ behc-, becc-* 'to be', *DEDR* 4427 (isolated). This might belong to 5549, Tamil *vai/ -tt-* 'to put, place, keep', etc.

b. There are verbs that end in Kṟx. -VCʔ and Mlt. -VCy. (55) Kṟx. *ṭaŋʔ-* has a -VCCʔ rhyme. A few verbs, such as (59) Kṟx. *barʔ-* vs Mlt. *bar,* do not end in -y in Malto.

(50) Mlt. *aḍy-/ aḍc-* 'to be enough', *DEDR* 78, Tamil *aṭu/ -tt-* 'to be fit, becoming', Konḍa *aṭ-/ -t-* 'to be able'

(51) Kṟx. *ōrʔ-/ ōrc-* 'to be warm weather', *?DEDR* 656, Tamil *uru/ -tt-* 'to burn', Kannada *uri* 'to burn', Telugu *uriyu* intr. 'to burn', etc.

(52) Kṟx. *khapʔ-/ khapc-* 'to cover exactly', (Mlt. *qap-/ qapy-* 'to touch filth, to be soiled with'), *DEDR* 1221, Tamil *kappu/ -i-* 'to overspread'

(53) Kṟx. *khalʔ-/ khalc-* 'to dilute', *DEDR* 1299, Tamil *kala-/ -nt-* 'to mix', Kolami *kalay-/ -t-* 'to be mixed'

(54) Kṟx. *cīrʔ-/ cīrc-* 'to saw', (Mlt. *circ-/ circy-* 'to scratch'), *DEDR* 2491, Ma. *īruka* 'to saw, split',

(55) Kṟx. *ṭaŋʔ-/ ṭaŋgc-* 'to hang', *DEDR* 3478, Tamil *ṭoṅku/ -i-* 'to hang'.

(56) Kṟx. *ḍegʔ-/ ḍegc-* 'to leap, to jump', *DEDR* 2971, Kui *dega-/ degi-* 'to run, jump, leap'.

(57) Kṟx. *nāxʔ-/ nāxc-*, Mlt. *nēɢy-/ nēɢc-* 'to breathe', *DEDR* 3765, Parji *nēñ(j)* 'to breathe', etc.

(58) Kṛx. *paṭʔ-/ paṭc-* 'to be filled in', (Mlt. *paty-/ paṭc-* 'to catch up liquid in a vessel'), *DEDR* 4034, Kannada *paṭṭu* 'to seize, to be held', Telugu *paṭṭu* 'to hold, to catch' n. 'hold, grasp'.

(59) Kṛx. *barʔ-/ barc-*, imperative *bar-ā* 'to come', Mlt. *bar-/ barc-*, *DEDR* 5270, Tamil *varu/ vant-*, Telugu *vacc-/ rā-*, Gondi *waiānā/ wāt-*, imperative *waṛā*, Parji *ver-/ veñ-*, Brahui *banning/ bass-*, imperative *ba*.

This is a productive class, and contains many loanwords adapted from Indo-Aryan languages, such as the following:

(60) Kṛx. *dharʔ-/ dharc-* 'to hold', Mlt. *dary-/ darc-*. From *CDIAL* 6747, dhárati 'holds, keeps', Hindi *dharnā* 'to keep, place', Oriya *dharibā* 'to hold'.

(61) Kṛx. *guṇḍʔ-/ guṇḍc-*, Mlt. *guṇḍy-/ guṇḍc-* 'to reduce to powder'. From *CDIAL* 4193, guṇḍaka m. 'dust, powder', Bengali *gū̃ṛā* 'powder, pounded', Oriya *guṇḍā* 'dust, powder'.

(62) Kṛx. *ghērʔ-/ ghērc-*, Mlt. *gēry-/ gērc-* 'to fence in'. From *CDIAL* 4474, *ghēr 'to make go round, surround', Hindi *ghernā* 'to surround', Bengali *gherā* 'to surround'.

(63) Kṛx. *jōṛʔ-/ jōṛc-*, Mlt. *jōṛy-/ jōṛc-* 'to join'. From *CDIAL* 10496.4, *yōṭayati 'joins', Bengali *joṛā*, *juṛā* 'to join, fasten', Oriya *joṛibā*, Hindi *joṛnā*.

2.4   Past Stems in *-j*

There are a handful of bases that do not end in *ʔ* and form the past stems with the suffix *-j*. This suffix will be discussed in § 3.1 b).

(64) Kṛx. *man-/ mañj-* 'to become', Mlt. *men-/ meñj-* 'to become, to be', *DEDR* 4778, Tamil *maṉṉu/ -i-* 'to be permanent', Telugu *manu* 'to live, exist', Kuwi *man-/ macc-* 'to be', Gadaba *man-*, *maṇḍ-*, *manj-*, *mey-*, Parji *men-/ mett-* 'to be, to stay', Brahui *manning*, *mass* 'to become, to be'.

(65) Kṛx. *men-/ meñj-* 'to hear, ask', Mlt. *men-* (South and Central *mēn*)/ *meñj* id., *DEDR* 5516, Tamil *viṉā/ viṉāy-* 'to ask, hear', Telugu *vinu/ viṇṭ-* 'to hear, obey', Pengo, Manḍa, Kuwi *ven-/ vec-*, Parji *ven-/ vend-* 'to hear', Brahui *bining/ bing* 'to hear'.

(66) Kṛx. *pān-/ pañj-* 'to ripen', *DEDR* 4004, Tamil *paẓu/ -tt-* 'to ripen', Kannada *paṇṇu* 'to be produced', Telugu, Konḍa *paṇḍu* 'to ripen', Parji *paṇḍ-* '(plant) matures', *paṛñ-* 'to ripen'.

(30) Kṛx. *nan-/ nañj-*, Mlt. *nan-/ (nany-)* 'to do', *DEDR* 3589, Tamil *naṉṉu/ -i* 'to do, make'.

(67) Mlt. *ĩh-/ iñj-* 'to pelt', Kṟx. (*iñj?-*)/ *iñj-*, (*iñjc-*) 'to shoot [arrows]'. *DEDR* lists this under 805, Tamil *ey-/ eyt-* 'to discharge arrows', Parji *ey/ eñ-* 'to shoot'. Alternatively, this verb might belong to *DEDR* 859 Tamil *eṟi-/ eṟi-nt-* 'to throw, discharge' because PDr. *ṯ (> Tamil *ṟ*) develops to Malto *h* in (1) *ãh-* and (9) *peh-* as well.

(68) Mlt. *il-/ ij-* 'to stand', Kṟx. *il?-/ ill-*, *ilc-* 'to get up', *ij?-/ ijj-* 'to be upright', *DEDR* 3675, Tamil *nil/ niṉṟ-* 'to stand', Telugu *nilucu* id., Gondi (Koya) *nil-/ nitt-* to stand, Kolami *il-/ ilt-* 'to stand', etc.

(69) Kṟx. *xoy-* (*xōy-* in Grignard 1924, s.v.)/ *xojj-* 'to measure', Mlt. *qoy-/ qoj-*, *DEDR* 2227, Gondi *kāhtānā* 'to measure'. Cf. (5) Kṟx. *xoy-/ xoss-* 'to mow'.

2.5 Past Stems in Zero (Class 3)

About 40% of the verb bases that end in *ʔ* in Kuṟux, and a few verb bases without *ʔ*, form the past stems without any suffix. If the base ends in *ʔ* in Kuṟux, the past stem shows subtractive morphology of *-ʔ/* -0 as in (78) Kṟx. *kīdʔ-/ kīd-*. All the past stems of this type end in -VXC, except *keb-/ kepp-* 'to scold', whose final consonant is geminated and devoiced in the past stem.

From a functional point of view, there is no confusion of present[3] and past forms, for it is possible to distinguish past and present forms without the past stem suffix except when the past stem is used by itself. The finite past forms have the additional past tense suffix *-k* between the past stem and the pronominal suffix in the first and second persons, and the pronominal suffixes of the past third-person forms begin with *a* in contrast with those of the present that begin with *i*, *d* or *n*, e.g. Mlt. *arɢ-ih* 'he digs' vs *arɢ-ah* 'he dug'. In Central Dravidian languages such as Parji as well, the verb bases serve as the past stems without alteration (Burrow, Bhattacharya 1953, 52).

a. In a few verbs with the rhyme -V̆CC, the verb bases and the past stems are identical.

(70) Kṟx. *urkh-/ urkh-* 'to go out', Mlt. *urq-/ urq-* id. *DEDR* 668 (practically isolated).

(71) Kṟx. *ury-/ ury-* 'to rub off', *DEDR* 652, Tamil *uri/ -nt-* 'to peel, to strip off', Naikṟi *uyp-* 'to take off', etc.

(72) Kṟx. *poll-/ poll-* 'to be unable', Mlt. *pol-/ pol-* id. *DEDR* 4571, Tamil *poṉṟu, -i* 'to perish', Telugu *poliyu* 'to die', etc.

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3 I use the term 'present' instead of 'non-past' commonly used in Dravidian, because Kuṟux and Malto have the future tense which contrasts with the present.

(73) Kṛx. *bañ̃-/ bañ̃-* 'to cover with tiles', *DEDR* 5532, Tamil *vey-/ -nt-* 'to cover, to roof', Gondi (Koya) *vēnc-* 'to cover (house)', Kolami *vēnz-/ vēnst* 'to thatch', Brahui *bēnifing* 'to thatch', etc.

(74) Kṛx. *boŋg-/ boŋg-* 'to run', Mlt. *boŋɢ-/ boŋg-* 'to run', *DEDR* 4473 (isolated).

b. In the Kuṛux forms of the following pairs, the verb bases end in ʔ, while the past stems are formed by deleting ʔ and geminating the consonant before it if the base has the rhyme -VCʔ, and just by deleting the ʔ if -VXCʔ (C ≠ r).

(75) Kṛx. *axʔ-/ akkh-* 'to know', Mlt. *āɢ-/ aqq-*, *DEDR* 17 (isolated etymon).

(76) Kṛx. *eṛʔ-/ eḍḍ-* 'to invite', (?Mlt. *eṛy-/ eṛc* 'to speak with fluency'), *DEDR* 786, Kolami *iḍḍ-/ iṭṭ-* 'to tell, show', etc.

(77) Kṛx. *esʔ-/ ess-* 'to break', *DEDR* 520, Tamil *iṛu- (iruv-)/ iṛṛ-* 'to break, snap', Telugu *iriyu* 'to be broken, smashed'.

(78) Kṛx. *kīdʔ-/ kīd-*, Mlt. *kīd-/ kīd-* 'to lay down', *DEDR* 1990, Tamil *cē-/ -tt-* 'to dwell, lie', Kannada *kē-/ kēd-* 'to lie down', Kolami *ke·p-/ ke·pt-* 'to make (child) to sleep'.

(79) Kṛx. *tindʔ-/ tind-, tindc-* 'to feed', Mlt. *tind-/ tind-* 'to feed by hand', *DEDR* 3263, Tamil *tiṇ-/ tiṇṛ-* 'to eat', Telugu *tinu/ tiṇṭ-* id., Gondi *tindānā* id., Pengo *tin-/ tic-* id., *tīc-/ tīcc-* 'to feed', Parji, Kolami, Naikṛi, Naiki (Chanda) *tin-/ tind-* 'to eat', etc.

(80) Kṛx. *pāxʔ-/ pāx(c)-* 'to open, to force open', *DEDR* 3808, Tamil *paku-/ pakk-* 'to split', Pengo *pag-/ pakt-* intr. 'to split'; *pak-/ -t-* tr. 'to split', Naiki (Chanda) *pay-* 'to break', etc.

(81) Kṛx. *pesgʔ-/ pesg-* 'to weed', *DEDR* 4423, Tamil *peṛukku/ -i-* 'to gather, pick up',

(82) Kṛx. *pēsʔ-/ pēs-* 'to command', *DEDR* 4430, Tamil *pēcu/ -i-* 'to talk', Kannada *pēẓ/ pēẓd-* 'to utter, say', Telugu *p(r)ēlu* 'to prattle, chatter, talk nonsense'.

(83) Kṛx. *bichrʔ-/ bicchr-* 'to set free', Mlt. *bicr-/ bicr-, bicry-* 'to let go', ?*DEDR* 5393, Tamil *viṭu/ viṭṭ-* 'to leave', Kota *viṛc-/ viṛc-* 'to make or let go', Gondi *viṛc-* 'to leave, abandon'.

c. A few verb bases ending in -VC have past stems with geminated final consonants, with shortening of the base vowels if they are long:

(84)   Kṛx. *kiṭ-* (also *kiṭʔ-)/ kiṭṭ-, kiṭc-* 'to push the unburnt ends of sticks into fire'.

(85)   Kṛx. *keb-/ kepp-* 'to scold', *DEDR* 1955, Tamil *ceppu/ ceppi* 'to say', Malayalam *ceppuka* 'to say', Telugu *ceppu* 'to say'.

(86) Kṛx. *mōx-*/ *mokkh-* 'to eat', Mlt. *mōq-*/ *moq-*, *DEDR* 5127, Malayalam *mōkuka* 'to drink, sip'.

(22) Kṛx. *xāy-*/ *xayy-* 'to become dry', Mlt. *qāy-*/ (*qāy-*) id., *qayek* 'dry', and (72) Kṛx. *poll-*/ *poll-* 'to be unable', Mlt. *pol-*/ *pol-* id., might also belong to this group.

3 Discussion

3.1 Origin of the Suffixes -*c* and -*j*

3.1.1 -*c* by a Progressive Palatalisation of *tt?

Subrahmanyam (1964, 49) observed that palatalisation of *t or *tt after *i, *e or *y, is found in the Tamil-Koḍagu subgroup of South Dravidian, pre-Parji of Central Dravidian, and Proto-South-Central Dravidian. Subrahmanyam (1971, 204) and Krishnamurti (2003, 193) suspect that a similar palatalisation occurred in Kuṛux-Malto as well. They explain Kṛx. *nuñjʔ-* 'to pain' and Mlt. *nuñj-* id. from *nōy-nt-, where the suffix *-nt is palatalised by the root-final *y. If Kuṛux-Malto had the development *tt, *nt > *c*, *ñj* /{i, y, (e)} – as in the Tamil-Koḍagu subgroup – the -*c* in some Kuṛux-Malto past stems are explainable by positing *-tt, a past tense suffix widely attested in other Dravidian languages, which is palatalised by the base-final front vocoid, e.g. (43) Kṛx. *ciʔ-*/ *cicc-* 'to give', Mlt. *ciy-*/ *cic-*, (47) Kṛx. *hoʔ-*/ (*h*)*occ-*, Mlt. *oy-*/ *oc-* 'to take', (48) Kṛx. *biʔ-*/ *bicc-* 'to be cooked', cf. Koḍagu *bey-*/ *becc-* 'to cook (rice)'.

A problem with this explanation is that Kuṛux and Malto do not have any other forms which independently support reconstruction of the suffix *-tt for Proto-Kuṛux-Malto. In order for this hypothesis to work, we need to suppose that Proto-Dravidian *tt was first palatalised to *cc in contexts after *i or *y (which is possible given *-yt- > *-c- as in (5) Kṛx. *xoy-*/ *xoss-* 'to mow'), and then *cc was generalised at the expense of *tt in Proto-Kuṛux-Malto. Furthermore, palatalisation of *tt to *cc* is an internal development of the South Dravidian and South-Central Dravidian subgroups according to Krishnamurti (1961, 164), and if it was operative in Proto-Kuṛux-Malto, it must be an independent innovation unless Kuṛux-Malto belongs to either of them. Positing *tt is an attractive hypothesis, but from a viewpoint of economy it does not provide a simpler explanation than positing *-cc for Proto-Kuṛux-Malto.

3.1.2 *c* or *j* in Non-Palatalising Contexts

The final *c(c)* in the past stems of a few verb bases that originally ended in *i or *y might be explained as palatalised *-tt. Some verb bases which end in *ʔ* in Kuṛux and *y* in Malto are considered to have had *i as a suffix, e.g. Kṛx. *emʔ-* vs Mlt. *amy-* 'to take bath' < PKM *am-i-, from *am 'water' and the derivative suffix *-i which fronted *a to *e* in the Kuṛux form (Gordon 1976, 69). If the past suffix *-tt was attached to these verb bases, the base-final *i would have palatalised the suffix *-tt to *c*. However, the past suffix *c* or *j* is also found after verb bases reconstructed without final *i or *y, e.g. (64) Kṛx. *man-/ mañj-* 'to become', Mlt. *men-/ meñj-*.

To explain the origin of final *-cu* found in many Telugu verb bases, Krishnamurti (1961, 163 f.) considered that *c* was incorporated into the verb base from the original 'past participial morpheme' (henceforth 'converb suffix'), *-ci/*-cci, by metanalysis of *c/*cc as a part of the verb base. The converb suffix *-ci/*-cci has its reflexes in some South-Central Dravidian and Central Dravidian languages (Krishnamurti 2003, 331 f.). It is further analysed into the past suffix *-cc (Krishnamurti 2003, 298 f.) and another past suffix *-i. Krishnamurti (2003, 299) explained Kuṛux-Malto *-c* from *-cc.

In Pengo of South-Central Dravidian, the converb suffix *-ji* is attached to some verb bases ending in *n*, while *-si, -ci* or *-hi* is attached to the others (Burrow, Bhattacharya 1970, 91). So the converbs of Pengo *man* 'to be' and *ven* 'to hear' are *manji* and *venji*, while the past stems, *mac* and *vec*, are made from the *n*-less allomorphs of the verb bases (Burrow, Bhattacharya 1970, 66). Gondi, another South-Central Dravidian language, has the converb suffix *-ji* attached to the verb bases ending in *n*, as in *man-ji* 'having stayed' from *man* 'to be, to stay', while *-i, -si* or *-ci* is attached to the other verb bases. In Central Dravidian, Gadaba also forms converbs with *-ji* after verb bases ending in *n*, e.g. *venji* 'having heard' from *ven* 'to hear' (Bhaskararao 1980, 49), while the suffix *-i* is attached to the other verb bases.

Of the three Kuṛux-Malto verb bases which end in *n* and take the past suffix *-j*, Pengo has two cognates with *j* in their converbs, and Gadaba has one, as mentioned above. This coincidence suggests that the Kuṛux-Malto past stems in *-j*, i.e. Kṛx. *mañj-, meñj-* and *pañj-*, have common origins as the South-Central and Central Dravidian converbs in *-cci (> -ci) and *-ci (> -ji, -si). If the converb suffixes *-ci and *-cci developed from combination of *-c/*-cc and *-i as Krishnamurti considered, and if converbs were formed independently from the past stems as in Pengo and Gondi at some point between Proto-Dravidian and Proto-South-Central Dravidian, we can explain that the Kuṛux-Malto past stems in *ñj* and *c* such as Kṛx. (64) *mañj-*, (47) (*h*)*occ-* and (59) *barc-* developed from the original converbs, and not from the past stems such as Tamil *vantu* from *varu* 'to come', Pengo *mac* from *man* 'to be',

or Gadaba *veṭ-* from *ven-* 'to hear'. Kobayashi (2022, 20) argued that Proto-Kuṛux-Malto had a converb formed from the past stem and *-i, retained in Malto as in *laḍ-i* 'having danced' from (12) *lal-* 'to dance' and *oc-i* 'having taken' from (47) *oy-* 'to take'. Kuṛux-Malto does not seem to share the innovation of the new converb suffix *-ci and *-cci with South-Central Dravidian, but at least it has parallel reflexes of *-c-i and *-cc-i in the Malto third-person non-masculine short converbs such as *oc-i*. In Proto-Kuṛux-Malto, *-c/*-cc and *-i were not combined into a single morpheme as in South-Central Dravidian, but functioned separately as the past suffix and the converb suffix, respectively. Figure 1 represents the process of the branching of Proto-Dravidian into subgroups, based on the converb formation. Kuṛux-Malto and South-Central Dravidian also share the predicative adjective suffix *-kk as mentioned above. *-c[4] occurred after verb bases ending in *n*, and *-cc after those ending in a vowel, which would give rise to Kuṛux *ʔ* base-final. If we posit Proto-Kuṛux-Malto past suffixes *-cc and *-c, it is not necessary to posit *y-tt as the origin of the Kuṛux-Malto suffix *-c*, even though the possibility of *y-tt > *-c* is not ruled out.

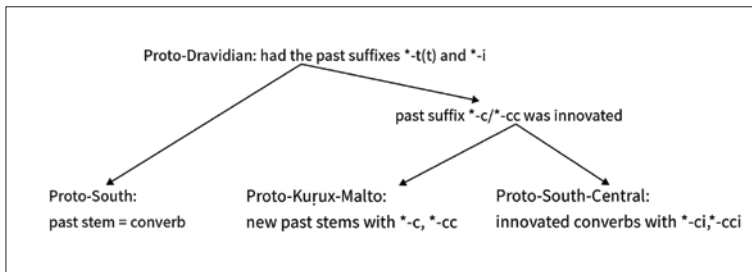**Figure 1** Possible scenario on the innovation of *-c/*-cc

Positing *-c also helps to solve the irregular *jj* in (69) *xoy-/ xojj-* 'to measure'. Judging from (87) Kṛx. *ujj-* and (88) Kṛx. *ejʔ-* cited below, the past stem *xojj-* is traced back to *qoy-c-, while (4) Kṛx. *xoy-/ xoss-* 'to mow' developed from *qoy-t- as a result of a regular sound change as is found in (10) Kṛx. *põy-/ poss-* 'to rain'.

(87) Kṛx. *ujj-/ ujjy-* 'to live', Mlt. *uj-/ ujy-* id., *DEDR* 645, Tamil *uy/ uynt-* 'to live'. The past stem is from PKM *uy-c- (Pfeiffer 2018, 59 "**uyV-cV-").

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4 Krishnamurti (2003, 104) explains Kannaḍa *pesaru* 'name' from *pin-cc-, where *n is lost before *cc by the rule NTT > TT. If *pin-cc- would develop to Kuṛux *piñj-* 'to name', it would also be possible to posit *-n-cc instead of *-n-c. Even in that case, it is still necessary to reconstruct the suffix *-c along with *-cc to account for (68) Kṛx. *xoy/ xojj-*, Mlt. *qoy/ qoj-* 'to measure'.

(88) Kṟx. *ejʔ-/ ejj-* 'to awaken', *DEDR* 851, Tamil *eẓu/ eẓunt-* 'to rise'. The past stem is from PKM *ey-c- < PDr. *eẓ-c- (Pfeiffer 2018, 72 "**eẓV-cV-").

(67) Mlt. *ĩh-/ iñj-* 'to pelt' is a difficult word. This verb probably belongs to *DEDR* 805, Tamil *ey-/ eyt-* 'to discharge arrows' rather than *DEDR* 859, Tamil *eṟi-/ eṟint-* 'to throw, discharge', etc., for *iñj-* is hard to explain by the latter. As Subrahmanyam (1964, 50) discussed, the past stem of this verb is explainable from *ey-nt-, just as *ñj* in the following words can be explained from the derivative suffix *-nt palatalised by the root-final *y.

(89) Kṟx. *xañjʔ-* 'to bear fruit', *DEDR* 1459, Tamil *kāy/ -tt-* 'to bear fruit', Telugu *kāyu* 'to bear fruit', etc.

(90) Mlt. *nuñj-/ nuñjc-* 'to pain', *DEDR* 3793, Tamil *nōy/ -nt-* 'to be ill', Parji *noy/ noñ* 'to be painful', etc. Subrahmanyam (2013, 402) suggests that Mlt. *nuñj-* is a verb base remodelled from a past stem formed with *-nt.

(91) Kṟx. *muñj-/ muñjy-* 'to finish', *DEDR* 4891, Tamil *mūy/ -nt-* 'to end', Telugu *mugiyu* 'to be finished', etc.

The past stem *-nt is attested only in South Dravidian, and also in Central Dravidian according to Subrahmanyam (2013, 401). If the Malto past stem *iñj-* is formed with *-nt, it is the only Kuṟux-Malto example of the past suffix *-nt. However, *iy-nt- may not be the only way to explain *iñj-*. In (49) Mlt. *beh-* and *bey-* 'to be', there is fluctuation between *y* and *h* (Kobayashi 2012, 44). If *ĩh-* is also a variant of unattested *ĩy-, it belongs to the same etymon as Tamil *ey-* mentioned above. *ĩy-c- would develop to *iñj-*, as we explained Mlt. *qoj-* in (68) from *qoy-c- (cf. Pfeiffer 2018, 70 *-nc-). There is only faint evidence to reconstruct the past suffix *-nt for Proto-Kuṟux-Malto.

3.2   Origins of the Zero Past and the Geminated Past Stems

In the Kuṟux-Malto zero past stems, there is no visible suffix, and the verb bases are followed directly by the pronominal suffixes beginning with *a* in the third-person, such as Kṟx. and Mlt. plural *-ar*. Since these pronominal suffixes with *a* occur only in the past forms, they can be viewed as signalling the past tense.

Outside Kuṟux-Malto, Brahui has the past suffix *-ā/-ē*, and Parji-Ollari-Gadaba has *-e/-o* in the past forms. They are reminiscent of the *a* in the Kuṟux-Malto third-person pronominal suffixes of the past. However, there is no shared feature in the distribution of the nonhigh vowel past among these languages and Kuṟux-Malto, and we cannot reconstruct a past suffix like *-a for Proto-Dravidian. In-

stead, *-at(V) can be reconstructed as the third-person non-masculine pronominal suffix of the past, because the past third-person singular neuter/non-masculine suffixes of many languages begin with *a*, as in Tamil *-atu*, Koṇḍa *-ad*, Pengo *-at*, and Parji *-a* (Subrahmanyam 2010, 55 f.; Kobayashi 2022, 20).

Two verb bases ending in a single consonant form their past stems by geminating the final consonant: (86) Kṟx. *mōx-/ mokkh-*, Mlt. *mōq-/ moq-* 'to eat',[5] and (85) Kṟx. *keb-/ kepp-* 'to scold'. (72) Kṟx. *poll-/ poll-*, Mlt. *pol-/ pol-* 'to be unable' might also be a geminating past if the gemination in the Kuṟux verb base *poll-* is secondary (Gordon 1976, 120 f.). (22) Kṟx. *xāy-/ xayy-* 'to become dry' might belong to the *-y* past, but since most verb bases forming the *-y* past end in an obstruent, it might better be grouped under the geminating past. *-t past stems such as (6) Kṟx. *xot-/ xott-* 'to cut by striking' can also be regarded as geminating past stems.

Caldwell (1913, 496 f.) noticed the geminated past stems of a few monosyllabic Tamil verb bases ending in a single consonant *ṭ*, *k*, or *ṟ*, and proposed a morphological process which he coined 'Dravidian reduplication'. South-Dravidian languages except Tuḷu have past stems of this type (Subrahmanyam 1971, 191-4). While *ṭṭ* and *ṟṟ* can be explained by suffixation of *-t with progressive assimilation, *kk* as in the Tamil verbs, *DEDR* 562 *uku-/ ukk-* 'to be shed as feathers or hair', 3005 *taku/ takk-* 'to fit', 3476 *toku/ tokk-* 'to assemble, collect', 3569 *naku/ nakk-* 'to laugh', 3733 *neku/ nekk-* 'to suffer', 3808 *paku/ pakk-* 'to be split', 4238 *puku/ pukk-* 'to reach' (Kannada *hogu-/ hokk-*), and 4848 *miku/ mikk-* 'to exceed', are difficult to account for by suffixation of *-t and assimilation of *-k-t to *-k-k.[6] In a few disyllabic Telugu verbs such as *ceḍu* 'to perish', *iḍu* 'to put, give' and *tagu* 'to fit', the regular past relative participle is *ceḍ-in-a* 'spoiled', and *iḍ-in-a* 'placed', and *tag-in-a* 'fit', respectively, but there are also alternative forms with gemination, *ceḍḍ-a*, *iḍḍ-a*, and *tagg-a* (Krishnamurti 1961, 211; 2003, 334; Subrahmanyam 1971, 142; 2013, 429).

The fact that South, South-Central and Kuṟux-Malto have the geminating past suggests the possibility that the gemination of *k dates back to Proto-Dravidian. However, none of the known examples of the geminated past stems of Tamil and Telugu has cognates in Kuṟux or Malto, and past stems with geminated *p* or *y* are not found outside Kuṟux-Malto, so it is difficult to trace Kṟx. *mokkh-* or Kṟx. *kepp-* back to Proto-Dravidian. Even though it is not totally convincing, it is possible that gemination spread from past stems with *t ~ tt* such

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[5] The final consonant is not geminated in Mlt. *moq-*, but vowel shortening as in (86) *mōq-/ moq-* indicates that Proto-Kuṟux-Malto had a geminate consonant, before which a long vowel is shortened according to the rule of Zvelebil (1967, 90).

[6] Ramaswamy Aiyar 1938, 750; Andronov 2003, 206.

as (6) *xot-*/ *xott-*, which show gemination because of the suffix *-t, by analogical extension.

Gemination of the last obstruent became productive, and spread to bases ending in -Cʔ in Kuṛux, such as (77) *esʔ-*/ *ess-* 'to break', which is analogical because the *-t past form *eṭ-t- would become ˣ*ett-* by the regular sound change. The base obstruent is geminated as long as the past stem fits in the -VXC rhyme, so for example, *d* in Kṛx. *idʔ-*/ *idd-* 'to plant' is geminated, whereas *d* in Kṛx. *ildʔ-*/ *ild-* 'to erect, set up' with a -VCCʔ rhyme remains a singleton.

The bases with identical past stems, such as *urkh-* and *boŋg-*, can also be explained as geminated past stems. These verb bases have the rhymes -VCC, and gemination is invisible or unrealised because the rhymes are already heavy.

3.3 Prosodic Condition

The choice of the past suffix is partly decided by the prosodic structure of the verb base, as is summarised in **table 1**.

Proto-Dravidian verbs of the shape *(C)V̄* become (C)Vʔ in Kuṛux, and (C)Vy in Malto. These verbs form the past stems -V*cc* or -VV*c*, e.g. Kṛx. *ciʔ-*/ *cicc-* 'to give', Kṛx. *coʔ-*/ *cōc-* 'to rise'.

Some (C)VC verb bases have past stems with the Proto-Dravidian suffix *-t, as in (4) Mlt. *qal-*/ *qaḍ-* 'to steal', while the others take the suffix *-c, as in (64) Kṛx. *man-*/ *mañj-* 'to become'.

(C)VCV verb bases become (C)VCʔ in Kuṛux, and (C)VCy or (C)VC in Malto.[7] They form the past stems with -*c*, as in (57) Kṛx. *paṭʔ-*/ *paṭc-* 'to be filled in'.

Verb bases of the shape (C)VXC either form the past stems with -*y* as in (33) Kṛx. *pāṛ-*/ *pāṛy-* 'to sing', or with zero as in (74) Kṛx. *boŋg-*/ *boŋg-* 'to run'.

(C)VXCV verbs becomes (C)VXCʔ in Kuṛux and (C)VXC or (C)VXCy in Malto. They form the past stems with zero as in (78) Kṛx. *kīdʔ-*/ *kīd-* 'to lay down', but also with -*c* as in (57) Mlt. *nēɢy-*/ *nēɢc-* 'to breathe'.

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7 Some of the final *ʔ* of the Kuṛux verb bases (C)VCʔ and (C)VXCʔ might be secondary and might not reflect an original vowel, given the Malto reflexes (C)VC and (C)VXC without final *y*.

Table 1   Proto-Kuṛux-Malto verb base types and the past stems

Verb base > Kṛx.		Past stem	Kuṛux	Malto	Class
-VV >Vʔ	⟶	*-V̆cc	cicc-, cōc-	cic-, cōc-	*-cc
-Vn	⟶	*-Vnc	mañj-, meñj-	meñj-, meñj-	*-c
-VC	⟶	*-VCt	oṇḍ-	oṇḍ-	*-t
	⟶	*-VCc	xojj-	qoj-, ij-, iñj-	*-c
-VVC	⟶	*-VCC	mokkh-	moq-	0
	⟶	*-VCCi	pakky-, piñjy-	eky-, piñjy-	*-i
-VCC	⟶	*-VXC	urkh-, kīd-	urq-, kĭd-	0
-VCV > -VC?	⟶	*-VCcc	patc-	barc-	*-cc
-VXCV>-VXC?	⟶	*-VXCcc	nāxc-	nēɢc-	*-cc

4   Conclusion

The formation patterns of the Kuṛux-Malto past stems are by no means fixed or uniform. Kuṛux and Malto often differ in the past stems, e.g. (30) Kṛx. *nañj-* vs Mlt. *nany-*, or the verb bases, e.g. (4) Kṛx. *xaṛʔ-* vs Mlt. *qal-*, and a single language sometimes has multiple past stems, e.g. (79) Kṛx. *tind-* and *tindc-*. Outside Kuṛux-Malto, there is even less agreement in the past stem formations among the subgroups. The past stem system of the Tamil-Koḍagu subgroup has the richest variation in the past suffixes, but even that system must have undergone innovations from Proto-Dravidian. Since our knowledge of the Proto-Dravidian verb morphology is still limited, a realistic strategy is to first identify those past suffixes of Kuṛux-Malto that can be reconstructed for Proto-Kuṛux-Malto, and to compare them with the past suffixes of the other subgroups.

Kobayashi (2011, 41) identified seven types of the past stems: *-t, *-c, *-cc, *-nc, *-y = *-i, gemination, and zero suffixation. In this paper, we discussed the origins of these types in more detail, and drew the following conclusions:

- the past suffixes *-t and *-i are firmly reconstructed for Proto-Kuṛux-Malto (§§ 2.1-2.2). These suffixes are attested in other subgroups except Brahui, and are considered to originate from Proto-Dravidian, whatever their original functions may have been. The distribution of Proto-Kuṛux-Malto *-i shows significant similarity with that of *-i(ṉ) in the Tamil-Koḍagu subgroup of South Dravidian.
- Of the past suffixes reconstructed for Proto-Dravidian, there are no solid reflexes of *-tt and *-nt in Kuṛux-Malto, even though there is no evidence against positing them for Proto-Kuṛux-Malto (§ 3.1).

- Instead of *-tt and *-nt, we can reconstruct *-cc and *-c for Proto-Kuṛux-Malto. Coincidences such as the Kuṛux past stems *mañj, meñj* and the Pengo converbs *manji, venji* suggest the possibility that Kuṛux-Malto and South-Central Dravidian have a shared innovation regarding the suffix *-c. *-cc might also be a shared innovation of Kuṛux-Malto and South-Central Dravidian (§ 3.1).
- Proto-Kuṛux-Malto had a few geminating past stems, but none is cognate with those in South or South-Central Dravidian, and have to be considered independent innovations. The past stems with zero developed by analogical extension of the geminating past to the verb bases with the heavy rhyme *-VXC, where gemination is obliterated (§ 3.2).
- Unlike South-Dravidian past suffixes *-nt vs *-ntt (§ 1), Kuṛux-Malto *-j* (< *-c) and *-c* (< *-cc) do not seem to contrast in transitivity (§§ 2.3-2.4).

Abbreviations

CDIAL	Turner 1962-66
DEDR	Burrow, Emeneau 1984
Kṛx.	Kuṛux
Mlt.	Malto
PDr.	Proto-Dravidian
PKM	Proto-Kuṛux-Malto
C	Consonant
V	Vowel
X	V or C
ˣ	Unattested

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