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# Velars, Uvulars, and the North Dravidian Hypothesis

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The mere existence of Brahui, located on the eastern edge of the Iranian plateau, has always presented a challenge to comparative linguistics. Since an adequate description of the language became available in the second half of the nineteenth century, no serious scholar has denied that a valid genetic connection exists between Brahui and the Dravidian languages of South Asia; the problem is in the details. This paper will examine the major hypothesis about the nature of this connection, explore the phonology which connects Brahui with Kurux and Malto, reexamine the primary data, and propose a new solution.

## I. BACKGROUND

1.1 Brahui is spoken by around two million people in Baluchistan province of Pakistan, adjacent areas of Afghanistan, eastern Iran, and Turkmenistan.<sup>1</sup> It remained unrecorded until the nineteenth century and still is not commonly written. The standard reference is an excellent grammar by Bray (1909) which focuses on the usage of the former Khanate of Kalat, in which Brahui was a traditional house language of the Khan.<sup>2</sup> Three major dialects are described, urban (i.e., Kalat), Jhalawan, and Sarawan, with occasional references to other “wild” dialects. Brahui in Iran and Turkmenistan has only recently had any description; it varies on details primarily in the third-person pronouns.<sup>3</sup> Brahui is surrounded by Baluchi, and virtually all males are bilingual. Brahui vocabulary has been swamped by Persian, Baluchi, and Indo-Aryan loans, and the surface phonology is virtually identical with that of Baluchi. However, the core morphology is largely intact. Brahuists are well aware of where usage differs and look with scorn on poor usage as *surut* ‘broken, corrupt’.

1.2 Robert Caldwell (1875 [1913: 39–40, 633–35]), working in a larger and less formal frame, held Brahui not to be Dravidian, but closely related. The *Linguistic Survey of India, vol. 4* (Grierson and Konow 1906: 285) held Brahui to be Dravidian, branching off directly from Proto-Dravidian. This was the most common position for many years. Early work on Brahui has an excellent summary by Emeneau (1980: 315–19). Other scholars looked for connections outside Dravidian. However, all of these and other following hypotheses could only make a basic assertion of cognation, and many details refused to fall into place. There were too many reasonable, but contradictory, approaches; and none of them gave a completely satisfactory solution.

## II. THE NORTH DRAVIDIAN HYPOTHESIS

2.1 In 1934, after many years’ delay, Bray published the second volume (Parts 2 and 3) of *The Brahui Language*, which is primarily an etymological vocabulary. This lexicon

1. The 1991 South Asian estimate of 1.9 million (Breton 1997) does not include numbers from Afghanistan or Iran. Accurate counts of Brahui speakers has been a long-standing problem since not all members of the Brahui tribe speak Brahui. Estimates range from one half to two million.

2. Elfenbein (1998) has a grammatical summary with updates on dialects and pronunciation.

3. The major published source on Iranian Brahui is Panikkar (1993). This work uses only the information in Bray or direct additions to it.

superseded (and included) everything which had preceded it and still remains the primary source for Brahui. However, the work also contained a section on “The Brahui Problem” in which Bray discussed the genetic and areal influences on Brahui. Here for the first time Bray (1934: 17–20) explicitly laid out a special relationship of Brahui with Kurux and Malto. His discussion was primarily phonological, addressing the double shifts of  $v > b$  and  $k > x$  found in these languages. He pointed out a handful of words common to the three languages.

2.2 Independently and at the same time, L. V. Ramaswami Aiyar [LVRA] was also working on Brahui. LVRA was a self-taught and very prolific comparativist, not unduly concerned with the finer points of neogrammarian consistency. He was, however, extremely astute on relationships between languages, and remains a continuing source of insight. He published two articles on the Brahui verb (1928, 1929a) which laid out the morphological parallels with Dravidian. That same year LVRA (1929b) gave a lengthy list of Brahui and Dravidian cognates. While they are not expressly stated, the list implicitly reveals his phonological concepts. For cognates with Dravidian initial \*k-, he freely intermixes Brahui attestations with initial x- and with initial k-. I believe that this is expressly stated in his article on initial velars (LVRA 1931), but I do not have access to the article.<sup>4</sup>

2.3 The definitive article was written by Thomas Burrow (1943) as part of a major series on Dravidian. Wartime conditions in Britain led to an extreme paper shortage which continued for a period after World War II. Editors enforced terseness. As a result, the article immediately proceeds to the sets of data without any attempt at providing a context. What few comments Burrow could include are in the footnotes.

For the first time, the position of Brahui was addressed in a systematic manner. Burrow handled the dual velars in Brahui, Kurux, and Malto, i.e., PDr. \*k- showing reflexes with both x- and k-, by first ascertaining that only k- was attested before  $i/\bar{i}$  in all three, which certainly looks like a shared reflex. He then analyzed all the remaining forms with k- as borrowings from Indo-Aryan, possibly of ultimate Dravidian origin. The remaining forms with x- were then explained as the result of a single phonological change. “In these languages initial k- is preserved before  $i, \bar{i}$ ; before all other vowels it is changed to a guttural spirant usually represented in Brah. and Kur. by  $kh$ , in Malto by  $q$ ” (Burrow 1943 [1968: 52]). He then gave over thirty sets of words demonstrating these changes. With this solution he removed all of the counterexamples and provided a shared innovation, which would be a firm foundation for a genetic grouping. However, he wisely avoided any discussion of the phonology involved.

2.4 In the early 1960s, Emeneau (1961) expanded the discussion in an article on the North Dravidian velar stops, unfortunately published in a Tamil festschrift.<sup>5</sup> Emeneau discussed eight sets of words that show the regular reflexes of PDr. \*c- in South and Central Dravidian, but have velars (k-, x-, kh-) in Kurux, Malto, and Brahui. This set of etyma produced a conundrum for Emeneau. If no phonological grounds for this change could be found, strict comparative methodology would posit a third phoneme, a conclusion that he

4. LVRA, who taught English at Maharaja College in Cochin, published in many obscure journals. One of his favorites was the *Educational Review [Madras]*. Original copies are very rare and extremely fragile. Much of his work survives only because colleagues carefully preserved and copied them. Some of this has been reprinted in various places (some with copyright problems) or has been abstracted; see *International Journal of Dravidian Linguistics* 7.1 (Jan. 1978) for discussion.

Fortunately, LVRA cites himself constantly and often published almost identical articles in two journals. It is usually possible to reconstruct his argumentation for any missing work.

5. The original is almost unobtainable. Fortunately, it has been republished in a recent collection (Emeneau 1994: 1–15).

was loath to make for so few data. No conditioning factor could be found by assuming the proto-phoneme \*k-, which was the approach that Burrow had tried, so Emeneau approached it from PDr. \*c-. All of the eight could be reconciled to PDr. \*c- environments before u/ū and e/ē. Thus, he hypothesized a North Dravidian shift of \*c- to k- in these environments. While there were counterexamples from North Dravidian, none seemed insurmountable, and he concluded with this hypothesis. See §5.2 for an updated version of the list.

Emeneau was also getting uncomfortable with the “guttural fricatives.” In a long footnote he discusses the ambiguities in the descriptions—particularly the *q* of Malto—and states the need for new fieldwork to establish the true pronunciations.

2.5 Emeneau’s (1962) work, *Brahui and Dravidian Comparative Grammar*, provided the first exhaustive statement of the North Dravidian hypothesis.<sup>6</sup> In chapter five, “The Position of Brahui in the Dravidian Family,” he laid out the complete set of arguments. The primary ones are phonological: (1) “PDr. \*k- is preserved as a stop before \*i, \*ī; before the other vowels its reflex is the Kurux and Brahui voiceless velar spirant [x], which is spelled in the published sources as *kh*, and Malto *q*, the phonetic value of which is still uncertain” (Emeneau 1962: 62 [1980: 320]). (2) PDr. \*v- is represented in all three languages by b-. However, since the same change occurred independently in Kannada, Kodagu, and Tulu, this was considered only as secondary evidence for subgrouping. If the change could occur independently twice, it could occur independently three times. (3) PDr. \*c- becomes NDr. k- in the environment before u/ū and e/ē as described in the preceding section. On the basis of these three shared changes, Emeneau felt secure in setting up the North Dravidian subfamily, which was generally accepted.

He went on to add supporting, but not primary, evidence including shared retentions. From morphology: (1) Past forms in -k-, which had been mentioned by Bray (1934: 20). (2) A future/subjunctive in -ō-, which had been discussed by LVRA (1929: 117). (3) Past forms in -c(c)-, which are also found in Telugu and its relatives. In vocabulary, the three languages show a few uniquely shared features: (1) The PDr. word for ‘who’, \*yā/e [DEDR 5151], has forms with an initial n-, i.e., \*ne, in addition to the expected reflexes. (2) The verb \*man- ‘to remain, endure, exist’ [DEDR 4778] has added the meaning ‘to become, be so-and-so’. (3) Similarly, the root \*tung- ‘to sleep’ [DEDR 3376a] has added the meaning ‘to dream’. (4) Three words show unique morphological derivations. The root mar- ‘horn, branch’ [DEDR 4720] has a -k- suffix in these three languages, as opposed to a -pp- suffix in the rest of Dravidian. The root for ‘red’ \*kem/v [DEDR 1931] has the form \*kes- in the word for ‘red’. The word for ‘name’ [DEDR 4410] has \*pin-, as opposed to \*peyar-, found in the rest of Dravidian.

In general for morphology, Emeneau makes it clear that the proposed connection is not a strong one. “Brahui morphology is divergent from that of Kurux-Malto in numerous particulars, so divergent in fact that their subfamily relationship cannot be demonstrated extensively from this sort of material” (Emeneau 1980: 325). Emeneau could find only seven etyma out of over 4,500 in the DED (Burrow and Emeneau 1961) that were uniquely shared by Brahui and Kurux-Malto; these will be updated and discussed in §3.5 below.

2.6 Emeneau republished his article (1980: 320–28) with a few revisions and updates. The major changes were the confirmation that Malto *q* is a true uvular voiceless stop (Das 1973: 14) and that Kurux-Malto has PDr. \*k as k before u/ū as well as i/ī (Pfeiffer 1972: 149–50). These, however, considerably altered the phonology involved. Emeneau backpedaled

6. Chapters 2 and 3 are reprinted in Emeneau (1994); chapters 4 and 5 are reprinted with minor updates in Emeneau (1980) as chapters 13 and 15.

considerably on the sweep of his phonological statement. “The divergent developments of \*k- in the three NDr. languages makes [sic] this a less cogent argument for NDr. as a subgroup; yet the partial agreement of Brahui and Kuṛux probably still counts for something” (1980: 327). Subsequently, in a major article on PDr. \*c, Emeneau (1988: 255–56) withdrew the systematic \*c- to \*k- shift before u/ū and e/ē since there are valid counterexamples in Kurux-Malto. Thus, the fundamentals of the North Dravidian hypothesis have been reduced to the k > x shift, which has also been called into doubt. It is now time to reexamine this phonology in detail.

### III. PHONOLOGICAL BASIS OF THE NORTH DRAVIDIAN HYPOTHESIS

3.1 Brahui velars consist of k, g, x (*kh*), and γ (*gh*), which are in contrast. In particular, the velar voiceless stop k contrasts with the velar fricative x. The voicing contrasts are less secure and show some alteration. In reflexes of PDr. \*k-, Brahui consistently shows k- before i/ī, and x- before all other vowels if we assume the forms with k- are borrowings, or a mixture of x- and k- if we do not. Brahui h has complex manifestations as h, glottal stop, and nothing, depending on the formality and style: h is most formal, and elision is most casual. The name of the language has stylistic variants of brāhūi, brāʔūi, and brāōē. This work uses Ł instead of *lh* for the strident voiceless retroflex lateral, x for *kh*, and γ for *gh*.

3.2 Kurux has a complex phonology in which all dialects do not necessarily agree on all details. According to the most detailed and reliable source (Gordon 1976), velar stops consist of k, k<sup>h</sup>, g, g<sup>h</sup>, where k is a voiceless dorso-velar stop, k<sup>h</sup> is an aspirated dorso-velar stop, g is a voiced dorso-velar stop, and g<sup>h</sup> is a murmured dorso-velar stop which clearly has been introduced from loanwords. The velar fricative x is a dorso-uvular trill (sometimes weakening to a fricative). The stop k and the fricative x are in full contrast, although both have sporadic variants with k<sup>h</sup>. PDr. \*k- has regular reflexes of k- before high vowels (i/ī and u/ū) and of x- before all other vowels (Pfeiffer 1972: 149–50); forms with k- are also found. The glottal stop has a complex existence in Kurux, which will be discussed below in §4.2.2.

3.3 Malto has at least three major dialects called (by Mahapatra 1979: 202) Sawriya, Malpaharia, and Kumarbhag. A fourth division of tribe, which he calls Marpaharia (also called Malpaharia by others), speaks an Indo-Aryan dialect. Kumarbhag is the most divergent, while Sawriya is the least influenced by Indo-Aryan languages. Mahapatra worked primarily on Malpaharia, but did extensive cross-dialect comparisons. Steever (1998: 359–87) has an excellent summary of Malto grammar based primarily on Mahapatra. Das (1973) worked on a variant of Sawriya with a note on Kumarbhag. Both works agree that Sawriya and Malpaharia have a full velar-uvular contrast with a voiceless velar stop /k/ contrasting in all positions with a voiceless uvular stop /q/. The voiced velar stop /g/ contrasts with the voiced uvular /G/, which Das (1973: 14) reports as a stop [G] and which Mahapatra (1979: 28) reports as a uvular fricative [ɣ]. Droese (1884), while weak on phonological detail, seems to support the fricative.<sup>7</sup> Kumarbhag has changed \*q to /ʔ/ and \*G to /h/.

The vowels consist of the normal five-vowel Dravidian pattern (i, e, a, o, u) with long and short phonemes (Mahapatra 1979: 20–23). Long and short vowels contrast only in the first syllable of a polysyllabic morpheme. Vowels are half-long finally and following an initial syllable. Elsewhere they are short.

7. Das and Mahapatra report differently on several phonetic details. This is sometimes due to differing dialects, but may also reflect style and speed. Das seems to present slow careful elicited pronunciation while Mahapatra represents pronunciation in more normal discourse. This work mostly follows Das on symbols, G vs. g, ŋ (cf. Das ŋ) vs. ɳ, θ vs. ð, because they are typographically clearer, not that they are necessarily more accurate.

3.4 It is patently obvious that Kurux and Malto are closely related since they share substantial portions of their morphology as well as numerous etyma. A change from a uvular stop to a uvular fricative is not exceptional, and devoicing a uvular fricative is even less so. While not impossible, a general shift from a fricative to a stop would definitely be flowing uphill. Kurux normally has a uvular trill rather than a fricative as fundamental pronunciation (Gordon 1976: 46). These considerations, combined with PDr \*k- occurring as k- before all high vowels (i/ī/u/ū) in Kurux and Malto while only before i/ī in Brahui, argue strongly that the \*k > x shifts in Brahui and Kurux are independent.

Kurux and Malto must have separated in the historical period while connections to Brahui are millennia old. For the k > x shift in Brahui and Kurux to be a shared innovation, Malto would have to have shared it. At a relatively recent date Malto would have had to shift the fricative to a stop without any external motivating influence. Given that Brahui and Kurux do not even share the same environment for this change, the shared shift of \*k > x must be rejected in favor of the much simpler explanation of two independent developments. Thus, no single shared innovation remains in the proposed North Dravidian subgroup.

3.5 This is consistent with the rest of the evidence for the subgroup. The etyma uniquely shared by Brahui (Br.), Kurux (Kx.) and/or Malto (Mt.) in the DEDR (Burrow and Emeneau 1984) are as follows:

- 3.5.1 Br. hūri 'unbaked clay jar for storing fodder, etc.' Kx. ūri 'sheaf'. [DEDR 753]
- 3.5.2 Br. kā- (*pres. base* of hining) 'to go, depart, pass beyond'. Kx. kāla (kāna; keras) 'to go, lead to, go on; be able to'. Mt. kāle 'to go, come to'. [DEDR 1419]
- 3.5.3 Br. xumb 'an embrace, two arms full'. Kx. ximb-, k<sup>h</sup>imc- 'to embrace', xeōc- 'to clasp in the arms, embrace, place under arm, adopt'. Mt. qemḍe 'to carry on the side, support with the arm'. [DEDR 1558]
- 3.5.4 Br. xōšking, xōšing 'to rub', tene xōšking 'to consort with, interfere with'. Kx. xōs- 'to pulverize by pounding'. Mt. qōse 'to pound, smash'. [DEDR 2189]
- 3.5.5 Br. xōl 'womb, offspring, entrails; woof, weft'. Kx. kūl 'belly, stomach, womb', kūlas 'offspring, descendants'. Mt. kōli 'abdomen'. [DEDR 2244]
- 3.5.6 Br. jaxxing 'to run into, pierce'. Kx. cakk<sup>h</sup>- 'to pierce with a prick, prick, penetrate into, puncture, cause a prickly sensation'. Mt. caqe 'to sting, pierce, stab, sow with planting stick'. [DEDR 2278]
- 3.5.7 Br. tahō 'wind'. Kx. tāka 'air, wind, breeze'. Mt. tāke 'wind, air'. [DEDR 3149]
- 3.5.8 Br. trukking 'to pluck off, pluck, strip'. Kx. tur<sup>h</sup>x- 'to take the skin off, shell, strip'. [DEDR 3358]
- 3.5.9 Br. parēfing 'to instigate, provoke'. Mt. paṛge 'to stir up, incite'. [DEDR 3861]
- 3.5.10 Br. bē 'salt, flavor, spirit'. Kx. bēk 'salt'. Mt. bēku 'salt'. [DEDR 4428]
- 3.5.11 Br. mōḷ 'smoke'. Kx. mōjxa 'smoke', mōj<sup>h</sup>x- 'to create smoke, fumigate'. Mt. moje 'to smoke', mojje 'to fumigate'. [DEDR 5131]

3.6 Two points need to be made from this list. First, the pattern of etyma shared with Brahui is not significantly stronger with Kurux or Malto than with any other single language. Looking just at matches of Brahui with a single other language: Tamil has four [DEDR 500, 919, 3373, 3833], Kurux, two [DEDR 753, 3358], Kui, two [DEDR 923, 3560], and Parji, two [DEDR 1289, 4634]; looking at matches with some closely related pairs of languages: Tamil-Malayalam has nine [DEDR 872, 3029, 3338, 4618, 5384, and the above Tamil entries] and Kurux-Malto, eleven. Brahui etyma with Dravidian languages are randomly scattered across all subgroups with a frequency reflecting primarily the size of the lexicon and its resistance to change, as well as the thoroughness of the lexicography. There is only a very slight increase in the frequency with Kurux and Malto, which is probably not significant. Out of 5,500 Dravidian etyma in the DEDR, all of these examples represent a fraction of one percent.

3.7 The second point is that of the four etyma with initial velars (#2–5), only one (#4) directly attests the proposed innovation. One other (#3) supports it but with surface shifts (the underlying postvelar vowel is \*e), and two (#2 and 5) directly refute it. Only half of the relevant shared etyma support the supposed innovation. An assumed truism of the comparative method is that if a phonological innovation is shared by two languages, there are a reasonable number of shared etyma that attest the innovation. That is not the case here.

Lexicostatistical data support this observation. According to Gardner (1980), Brahui shows no pairing with any other specific Dravidian group. This article also indicates that Kurux and Malto separated 1,500 years ago.

3.8 As mentioned above, other lexical innovations are not above chance levels, and as Emeneau himself makes clear, morphological similarities simply will not carry the case. Hence, with the proposed core innovation shown not to be shared, there is no other evidence strong enough to make the case for the subgroup. It is not so much a matter of disproving the hypothesis as of showing that with additional information the North Dravidian hypothesis is simply untenable. It is a reasonable and rational hypothesis that simply does not stand the test of further evidence. We must look elsewhere for the connection. However, there are similarities in the patterns of the velars (and uvulars) in Kurux and Malto on one hand and in Brahui on the other. It is the goal of this paper to reexamine all of the evidence and explain the similarities. If not North Dravidian, then what? Working from the securely known to the unknown, Kurux and Malto are the starting point.

#### IV. KURUX-MALTO VELARS AND RELATED PHONOLOGY

4.1 The importance of the phonology of Malto to this study cannot be overemphasized. That this small group (1991 est. 150,000 [Breton 1997]) of Dravidian speakers is found in the Rajmahal hills on the edge of Bengal, just to the southwest of the point where the Ganges makes its turn to the south, is surprising in itself. Then to have a phonology that seems to ignore most South Asian and Dravidian norms makes it astonishing.<sup>8</sup> Malto has a six-position system of contrastive stops. However, instead of the usual Dravidian six-stop system—labial, dental, alveolar, retroflex, palatal, and velar—it has labial, dental, retroflex, palatal, velar, and uvular. While there are alveolars, they are not contrastive. The unique phonemes include an (inter)dental fricative, /θ/ (Das [θ], Mahapatra [ð]), which contrasts with dental /t/ and /s/. However, it is the uvular series that is absolutely unexpected. Malto has a complete set of uvulars, voiceless /q/ and voiced /g/, which are fully contrastive in all positions. A special phonotactic exception applies to velar/uvular and dental/retroflex contrasts. Stops adjacent to one vowel, whether in the same syllable or not, cannot mix velars and uvulars (or separately dentals and retroflexes) unless a morpheme boundary intervenes. Specifically, one syllable cannot contain both a velar and a uvular, but may contain two of either (Mahapatra 1979: 38–39). One back nasal phoneme /ŋ/ (Das 1973 writes /ñ/, Droese 1884 has n) has velar and uvular variants; Das and Droese include a third palatal allophone for this back nasal while Mahapatra (1979: 27) reports a few contrasts for a separate /ñ/. This back nasal /ŋ/ is in full contrast with labial /m/ and dental /n/, which has a retroflex variant before retroflex stops. Next to a uvular, the phoneme /r/, which is normally an alveolar trill [r], has a voiced uvular trill variant [R]. Except as noted, all phonemes have only one allophone (Das 1973: 13). Malto's uvulars must be taken as primary evidence and reconstructed to Proto-Kurux-Malto unless a conditioning factor can be found.

8. It is possible to overstate the uniqueness of Malto. While the phonology is divergent from known sources, Malto has a number of distinctly eastern South Asia areal patterns such as numeral classifiers and counting by scores. Malto is surrounded by Santali, a Munda language.

4.2 Kurux (also Kurux, Kurukh, and Oraon) is a major language with over two million speakers spread over three nations and five states of India. The core area is the Ranchi plateau in the Chota Nagpur region centered on the adjacent districts of Ranchi (Bihar), Raigarh (Madhya Pradesh), and Sundergarh (Orissa). While all dialects share a common morphology, there are significant dialectal differences in the phonology. Many features are bundled together, with dialects differing as to which are phonemic and which allophonic. There is no one phonemic analysis which is completely satisfactory for all of Kurux. Published sources can give the impression of considerable differences. This study follows Gordon (1976), since his work is multidialectal, he actually speaks Kurux, he directly addresses the ambiguities involved, and his is the most usable for diachronic reconstructions.

The first major breakout is into two separate phonological systems: the native one and the superimposed one, which handles the complexities which Indo-Aryan loans have introduced. The native system has five vowels plus the relic vowel. The superimposed system has six vowels plus the relic vowel. Murmured (voiced aspirate) liquids occur only in educated speech. The added vowel is /ə/ which exists only in the first syllable, while the relic vowel, which has an allophone [ə], does not exist in the first syllable. Kurux has been deeply influenced by Mundari, a Munda language which surrounds it in Chota Nagpur.

4.2.1 Kurux has a system of umlaut in the first syllable where mid and low vowels are raised if an *i* or *u* follows (or followed) in the next syllable. This is universal for the mid-vowels, *e/ē* and *o/ō*, which are raised to *i/ī* and *u/ū* respectively. This is important in verb morphology where not only do a number of forms show regular, surface alternation, but a large group of verbs umlaut the past stem where the original \**i* has been lost. Some dialects, including the standard Ranchi ones, also umlaut the low vowel *a/ā* giving *ə/ē*, which joins with Hindi loans to create the added vowel.

4.2.2 Kurux has a functioning glottal stop [ʔ] which presents major problems of analysis. All vowel-initial words begin with a glottal stop which is not phonemic and not written in roman transcriptions. Kurux written in Devanagari script uses the initial vowel signs to write the glottal stop, both initially and internally. However, if a glottal stop (usually written ʔ) follows the initial vowel, the initial glottal stop dissimilates to an [h], which is phonemic in other environments (Pfeiffer 1972: 162). This gives rise in the verbs to such sets as *ho'ona* [hoʔona] 'to take', past *occas* [ʔoččas] [DEDR 984]. Even more complicated is the occurrence of the glottal stop in the middle of words. Most studies have considered it to be phonemic (Pfeiffer 1972: 8, 100–101). For most synchronic single-dialect analyses, this is probably the case. However, Gordon (1976), based in a more archaic dialect and having spent much longer with the language, devised a more sophisticated analysis, the "relic" vowel. The basic distinction is between open and close transition between consonants, where close transition is a normal consonant cluster. The open transition has a complex manifestation which includes a voiced weakly/non-syllabic transitional vocoid (Gordon 1976: 64). This is the relic vowel. Normally the relic vowel echoes the preceding vowel, but before /h/ or an immediately following vowel it mimics the following one. More importantly, if it is systematically introduced, a consistent environment for the glottal stop is introduced, namely between vowels in vowel clusters. This also regularizes the phonological shape of the morpheme.<sup>9</sup> While too complex to discuss here, it provides an excellent

9. Gordon (1976) makes a strong point that his data independently support Pfeiffer (1972), and where they differ it is due to dialect differences. The major exceptions are Pfeiffer's handling of the glottal stop as a consonant phoneme and his using double vowels for length. Based primarily on the complications that they introduce into syllabic patterning, Gordon rejects them for the "relic" vowel solution. While an excellent synchronic solution, the relic vowel does not handle all the diachronic complexities. Cognates in Malto and loans from Mundari show that at least sometimes the glottal stop has a consonantal origin. Significantly, the Sawriya dialect of Malto has no glottal stops at all.

solution to much of the surface variation in Kurux and definitely provides a much firmer basis for reconstruction. However, some glottal stops have been introduced from Mundari  $c^?$ , and the regular correspondence in Malto is  $y$ .

In this work a superscript  $\text{ə}$  will be used to indicate the relic vowel, and both this vowel and the glottal stop will be written, for compatibility with the varied sources. In a few common nouns, Gordon (1976: 65–67) reports that the relic vowel becomes an echo vowel with the quality of a full vowel much like what is reported to be regular in other dialects. In these cases a superscript vowel other than  $\text{ə}$  will be used.

4.2.3 Kurux has very strong patterning in tense/lax articulations. Initial syllables have short vowels if closed and long vowels if open. Vowel length does not contrast in most other syllables. Similarly in the first syllable, geminate consonants are preceded by short vowels, single consonants by long ones. This raises real issues of what is conditioning what. The best interpretation (Gordon 1976: 125–31) is that today in Kurux, consonant length conditions vowel length. Using comparative data from Malto, it is clear that historically vowel length conditioned consonant length. In short, from a comparative point of view Kurux has little to say on the length of any unit.

The limited use of contrastive vowel length presents major choices in how to write vowels, i.e., which phonemes do the noncontrastive variants belong to. The standard source (Grignard), following vowel quality and Devanagari script, uses long vowels. Most modern studies (Pfeiffer, Gordon) use short ones. Grignard uses the verbal noun in  $-na$  (he writes  $-nā$ ) as the citation form, Gordon uses the infinitive ( $\approx$ imperative), and Pfeiffer uses the verb base. Except for a few irregular verbs, one form is readily transformable to the other. This work will follow Gordon where known and use Pfeiffer's notation elsewhere. The DEDR normally follows Grignard, but also uses other citations identifying the source.

4.2.4 Aspiration commonly appears in Kurux in loans from Mundari or Indo-Aryan; see §5.5.2. However, the aspirated velar  $k^h$  appears systematically in PDr. reflexes. This matter will be examined in detail in sections 5.4.9 and 5.4.12 below.

### 4.3 Proto-Kurux-Malto Phonology

4.3.1 While closely related, Kurux and Malto have major systematic differences in their phonologies. The major variance revolves around the second vowel in the reconstruction. In general, if Proto-Kurux-Malto (PKxMt) has a pattern  $C_1V_1C_2V_2C_3V_3$ , Kurux will have  $C_1V_1C_2^V_1C_3$  where the second vowel echoes the first and Malto will have  $C_1V_1C_2C_3V_3$  where  $C_2C_3$  may metathesize to  $C_3C_2$ . As a result, Kurux and Malto rarely attest a definite value for  $*V_2$  in three-syllable words. Following Pfeiffer (1972), all vowels by rule are written as a superscript.

4.3.2 The major phonological shift in Proto-Kurux-Malto (PKxMt) from Proto-Dravidian is the lowering of high vowels ( $i, \bar{i}, u, \bar{u}$ ) to their corresponding mid vowels ( $e, \bar{e}, o, \bar{o}$ ) in the first syllable after an initial uvular in PKxMt. Restated, PKxMt  $*q-$  is followed only by long and short  $e, o,$  and  $a$ . This has traditionally been described as PDr  $*k > q$  before  $e, o, a$ , but this assumes *a priori* a single velar phoneme in PDr. Both the distribution of  $*k$  before all vowels and the fact that  $*q$  has cognates with high vowels elsewhere in Dravidian argue that the correct formulation is that all high vowels were lowered to mid vowels after initial uvulars. The only exception to this in native vocabulary is the result of Kurux's umlauting rule, which raises  $*qe$  to  $xi$  and  $*qo$  to  $xu$  if a high vowel follows (or followed).<sup>10</sup>

10. This, of course, is the origin of the observation that Brahui and Kurux-Malto attest only  $k-$  before  $i/\bar{i}$ . This observation, while undeniably true, results because all cases of PKxMt  $*qi$  became  $qe$ . The Brahui attestation of initial  $k$  before  $i/\bar{i}$  is independent. Pre-Brahui may have had only  $k-$  before  $i/\bar{i}$ .

## V. PROTO-KURUX-MALTO CORRESPONDENCES

5.1 Proto-Kurux-Malto (PKxMt), like Proto-Dravidian, had a strong and very restricted pattern of consonantal distribution, with single obstruents occurring initially and both single/lax and geminate/tense obstruents occurring intervocalically. Following normal Dravidian practice, the common clusters of homorganic nasal plus both lax and tense stops are handled explicitly. Other clusters are rare and always intervocalic. As in Proto-Dravidian, there are no final obstruents. However, because of the common loss of final vowels, Kurux has them.

The following correspondences of the form PKxMt \*P > Kx. X | Mt. Y / \_Z are to be read PKxMt. \*P has reflexes of Kurux X and Malto Y in the protolanguage environment Z. Brahui citations are included where they exist, but they are not handled in the rules. Kurux past forms are added in parentheses wherever known (masculine in -as, nonmasculine in -a). Any irregular forms are also noted. The entries are extensive and intended to be illustrative of all known factors. However, this list is not exhaustive, and most forms with multiple velars or uvulars are cited only once. Entries are grouped by their Proto-Dravidian etyma—this anticipates some of the argumentation—and are in order of their DEDR number within groups. Citations are from Burrow and Emeneau (1984) [DEDR] and Pfeiffer (1972) [EKHP]. Glosses are primarily from the DEDR, but they have been updated when they are obscure. Unpublished fieldwork by Kent H. Gordon has been included; additional meanings and borrowings have been placed in square brackets or the entire entry has been marked as [KHG].<sup>11</sup>

## 5.2 Velars with Special Correspondences in Other Dravidian Languages

The following items are the problem sets discussed in Emeneau (1988, 1961), in which Kurux, Malto, or Brahui have an initial k- where etyma in other Dravidian languages have c-, which may develop to Ø or t. Cross-references to similar cases are also given.

## 5.2.1 PKxMt. \*k- &gt; Kx. k- | Mt. k- / \_ {i,i} \*c- attested elsewhere

- .1 Kx. kitta 'to rot'. Mt. kite 'to rot'. Br. kiš 'pus, snot'. [DEDR 1606, EKHP 150] Cognates elsewhere in Dravidian indicate a possible double root in both k- and c-; see Burrow 1976: 41 and Emeneau 1988: 259. Cf. Ta. ci 'pus, matter'.
- .2 Kx. kīnda 'palm tree, date tree'. [DEDR 2617] Cf. Ta. īntu 'date-palm', Pa. cīnd 'date-palm'.

## 5.2.2 PKxMt. \*k- &gt; Kx. k- | Mt. k- / \_ {u,u} \*c- attested elsewhere

- .1 Kx. kuḍa (kuṭṭa) 'to [be hot], grow warm, become hot, be heated; cook on live embers, bake on an open fire'. Mt. kuṛe (kuṭ-) 'to burn, roast, sear'; kuṛnare 'to be hot or warm'; kuṛni 'warm, hot'. [DEDR 2654, EKHP 410] Cf. §5.3.2.4 and Ta. cuṭu 'to be hot, burn'.
- .2 Kx. kumṛa (kummṛa) 'to take and carry on head, make oneself responsible for, confess, be pregnant as result of a fault'. Mt. kume 'to take on one's head, accept terms, take charge of'. Br. kubēn 'heavy'. [DEDR 2677, EKHP 411] Cf. Ta. cuma 'to become heavy; bear'.
- .3 Kx. kūra 'to put on and tie a sari around one's waist'. Mt. kurge 'to roll up, wrap up'. Br. kūring 'to roll up (tr.), make a clean sweep of'. [DEDR 2684, EKHP 409] Cf. Ta. curi 'to be spiral, whirl round, curl'.

## 5.2.3 PKxMt. \*k- &gt; Kx. k- | Mt. k- / \_ {e,e} \*c- attested elsewhere

- .1 Kx. keba (keppa) 'to scold, lecture'. [DEDR 1955, EKHP 406] Cf. Ta. ceppu 'to say, speak, declare'.

11. Kent Gordon took a series of courses with me at the University of Pennsylvania immediately after an extensive period of fieldwork on Kurux. As part of some of the courses he wrote a weekly paper on his research, many of which were on the Kurux verb. This was before word processors, and by agreement he turned in a typed rough draft with handwritten corrections. The analysis was obviously good, although it took me another twenty years to catch up enough to realize how seminal it was. I kept copies of the papers and have included their content in this work, with attribution. However, I cannot be sure that I have always read the forms correctly, especially the pasts. Any errors are my own.

- .2 Kx. kēsa (kīsyas) ‘to winnow with up-and-down jerks of the shovel basket’; kēter ‘winnowing basket’. Mt. kēse ‘to sift’; kētnu ‘winnowing basket’. DEDR 2019, EKHP 407] Cf. Ma. ceruka ‘to winnow, fan’.
- .3 Kx. kecca ‘she died’. Mt. kecaθ ‘she died’. See DEDR 2426 and §5.3.3; cf. Ta. cettatu ‘it died’.
- .4 Kx. kera ‘she went’, *past of kala*. ?? Br. kēb ‘nearness, vicinity; near’. Cf. Ta. cēr ‘to join, attach, admix, etc.’ [DEDR 2814]
- 5.2.4 Examples of PKxMt \*q- attested as \*c- elsewhere
- .1 Kx. xerra (xirryas) ‘to introduce lengthwise by gradual pushing, insert, stick into or behind’. Mt. qere ‘to thrust in, tuck in’. [DEDR 2778] Generally elsewhere in Dravidian with c-, Ta. cer- ‘to insert’, etc.

### 5.3 Regular Velar Correspondences

The following sets have cognates elsewhere in Dravidian in k or have no such cognates at all.

PDr. \*k-

- 5.3.1 PKxMt. \*k- > Kx. k- | Mt. k- / \_{i,ī}
- .1 Kx. kissa ‘to dig out a thorn, goad’. Mt. kise ‘to dig out a thorn’. Br. kišking ‘pluck, break off’. [DEDR 1513, EKHP 388]
- .2 Kx. kiss<sup>o</sup> ‘pig’. Mt. kisu ‘pig’. [DEDR 1517]
- .3 Kx. kiya ‘small wooden box’. Mt. kiya ‘small wooden box’. [DEDR 1559]
- .4 Kx. kira (kiryas) ‘to come back, return’. Mt. kire ‘to return’. [DEDR 1566]
- .6 Kx. kiba ‘frost, ice’. Mt. kiwe ‘cold, cool’. [DEDR 1618, EKHP 727a]
- .7 Kx. kiyya ‘beneath, under’. Br. kī, ki-, kē- ‘below, down’; kēray ‘lower side’. [DEDR 1619, EKHP 149]
- .8 Kx. kiḍa ‘hunger, poverty, famine’. Mt. kiṛe ‘hunger, thirst’. [DEDR 1621]
- .9 Kx. kiḍ<sup>o</sup>a ‘to [put down to rest/sleep], lay down, put to bed; [put in grave]’. Mt. kiḍe ‘to lay down’. [DEDR 1990, EKHP 170]
- .10 Kx. kiro ‘marking-nut tree, *Semecarpus anacardium*’. Mt. kiro ‘the Malacca bean’. [DEDR 2005, EKHP 171]
- 5.3.2 PKxMt. \*k- > Kx. k- | Mt. k- / \_{u,ū}
- .1 Kx. kuji ‘shadow, phantom’. Mt. kuji ‘shadow’. [DEDR 1641]
- .2 Kx. kuṛya ‘small shed or outhouse’. Mt. kuṛya ‘hut in the fields’. Cf. Br. kuḍ(d)ī ‘hut, small house’. < IA < Dr. [DEDR 1655]
- .3 Mt. kutye ‘to nail, drive a peg’. Cf. Br. kutting ‘to pound’. < IA [DEDR 1671]
- .4 Kx. kuḍa (kuḍḍa) ‘to thread, string, fix on any pointed instrument, throw the wool thread in weaving’. Mt. kuḍe ‘to pierce (as with needle)’. [DEDR 1677, EKHP 397] Cf. kuḍa §5.3.2.10.
- .5 Kx. kuḍḍa ‘umbilical cord’. Mt. kuḍe ‘navel’. [DEDR 1678, EKHP 541a]
- .6 Kx. kundda (kundḍaya) ‘to germinate, bud, shoot out’; kundr- ‘to be born’. Mt. kunde ‘to be born, be created’. [DEDR 1729, EKHP 398]
- .7 Mt. kūrūr ‘call to dog’. ? Br. xurrukāv ‘a snore’. [DEDR 1796]
- .8 Kx. kūm ‘a large cylindrical basket in bamboo work for catching fish’. Mt. kūme ‘a fishing coop’. [DEDR 1896]
- .9 Kx. kuḍḍa ‘creeper’. [KHG] [add to DEDR 2050]
- 5.3.3 PKxMt. \*k- > Kx. k- | Mt. k- / \_{e,ē}
- See §5.2.3 for examples.
- 5.3.4 PKxMt. \*k- > Kx. k- | Mt. k- / \_{o,ō}
- .1 Kx. kōm arxa ‘a vegetable from the leaves of the ko’enar tree’. Mt. kōmo ‘a delicate vegetable obtained from kachnar leaves’. [DEDR 2221]
- .2 Kx. kor<sup>o</sup>a (kor<sup>o</sup>ca) ‘to enter, go in, (fever) seizes, be readmitted among’. Mt. kore ‘to enter, go in, enlist’. [DEDR 2236]
- .3 Kx. kūl ‘belly, stomach, womb’; kūlas ‘offspring, descendant’. Mt. kōli ‘abdomen’. Br. xōl ‘womb, offspring, entrails’. [DEDR 2244] Kurux umlauts due to following \*i. Note §3.5.5.
- 5.3.5 PKxMt. \*k- > Kx. k- | Mt. k- / \_{a,ā}
- .1 Kx. kassa ‘layer of dirt on the body’. Mt. kase ‘dirt on the body’. [DEDR 1088, EKHP 403]

- .2 Kx. kajja ‘to press down under a weight (so as to prevent escape, straighten, etc.), throw one’s weight upon, hammer’. Mt. kaje ‘to beat down (as earth), wash (as clothes), fall upon (as trap)’. [DEDR 1101]
- .3 Kx. kaṭṭa ‘to cross, pass over or above, overtake and go beyond, outdistance, surpass, go to excess’. Mt. kaṭe ‘to exceed, pass, cross’. Cf. Br. xarring ‘to proceed on foot, make one’s way’. [DEDR 1109, EKHP 1]
- .4 Kx. kaṛa ‘young male buffalo’, kaṛi ‘young female buffalo’, kaṛru, kaḍru ‘buffalo calf (male or female)’. Br. xaṛ ‘ram’, xaṛās ‘bull, bullock’. [DEDR 1123]
- .5 Kx. kaṭṭa ‘to cut with the teeth, gnaw holes’. Br. gaṭ ‘a bite’. Note Bal. gaṭṭ (No ILEB) [DEDR 1124]
- .6 Kx. kaṛma ‘waist’. Mt. kaṛme ‘waist’. [DEDR 1143]
- .7 Kx. kaṇḍo ‘a stool’. Mt. kaṇḍo ‘stool, seat’. [DEDR 1179]
- .8 Kx. kappā ‘to [frisk], cover or press gently with the hand, throw the hand or claws upon in order to catch; to feel, touch with hands’. Mt. kape ‘to touch, meddle’. [DEDR 1125] [Cf. Mundari k<sup>h</sup>appa ‘to catch with the hands adroitly’]
- .9 Kx. kauwar ‘tumult of angry voices, rowdy shoutings, uproar’. Mt. kawye ‘to use vile language’. [DEDR 1341] See §5.4.5.6.
- .10 Kx. kab<sup>h</sup>ākub<sup>h</sup>ur- ‘to take short steps forward in a leaning position’; kabkub<sup>h</sup>r- ‘to curve the body forward, be bent in two’. Mt. kawge ‘to curve, bend’; kawgre ‘to be bent, stoop’. [DEDR 1344]
- .11 Kx. kāla/ka<sup>?</sup>- (kera) ‘to go, lead to (as a road), progress favorably, go on, continue, perish, pass (of time), come to an end, (stomach) has diarrhoea, bring oneself to, be able to’. Mt. kāle (*no past tense*) ‘to go, come to’. Br. kā- *present stem* of hining ‘to go, depart, disappear, be past, pass beyond, be no longer fit for, flow, (stomach) has diarrhoea’. [DEDR 1419] Note §3.5.2.
- 5.3.6 PKxMt. \*g- > Kx. g- | Mt. g-
- .1 Kx. gaḍūr ‘a sort of black heron’. Mt. gaḍure ‘the adjutant bird, a crane’. [DEDR 1155] [Cf. Mundari gaduṛ ‘white heron’, also Nagpuri Hindi]
- .2 Kx. giṅj<sup>?</sup>a ‘to mix’. Mt. giṅjye ‘to mix’; giṅjGro ‘mixed (as food)’. [DEDR 1522]
- .3 Kx. guḍru, guṛru ‘dwarfish (of persons and animals only)’. Br. γuḍḍū, guḍḍū ‘small; urchin’. [DEDR 1670]
- .4 Kx. guṇḍa, guṇḍi ‘powder, flour, fragments’; guṇḍa ‘to reduce to powder’. Mt. guṇḍi ‘dust’; kuṇḍo ‘anything reduced to powder’. [DEDR 1692] [Note Mundari guṇḍa ‘powder, flour’]
- .5 Kx. guṛṭha, guṇṭha ‘pellet-bow’. Mt. guṇṛta ‘pellet-bow’. [DEDR 1727]
- .6 Kx. gurṛā<sup>?</sup>a ‘to roar (as a tiger), snarl or growl fiercely, utter angry words or shouts of anger’. Br. γurring ‘to growl’. Cf. Br. gūrring ‘to gurgle (of camels), groan loudly’. [DEDR 1852]
- .7 Kx. ged<sup>h</sup>la ‘(of fruits) overripe [and falling to pieces], having a soft and decaying appearance; (of over-cooked food) having lost all consistency’. Mt. gidi ‘pulp of fruit’. [DEDR 1952]
- .8 Kx. goṭa ‘any seed which forms inside a fruit or shell’. Mt. goṭa ‘a seed or berry’. [DEDR 2069]
- .9 Kx. gecc<sup>h</sup>a ‘distant, far off’. Mt. gece, geci ‘far’. [DEDR 2807]
- PDr. \*-k-
- 5.3.7 PKxMt. \*-g- > Kx. -(g)- | Mt. -g-
- .1 Kx. ij<sup>?</sup>ga (ij<sup>?</sup>g<sup>?</sup>ya), ij<sup>?</sup>g<sup>?</sup>a (ij<sup>?</sup>gāca) ‘to show the teeth’. Mt. igje ‘to grin, reproach’. [DEDR 418, EKHP 437]
- .2 Kx. ujgo ‘uprightness, moral rectitude; straight, upright, right, true’. Mt. ugjo ‘true, real; truth’. [DEDR 583A]
- .3 Kx. oḍ<sup>?</sup>ka, oḍ<sup>?</sup>ga (uḍ<sup>?</sup>k<sup>h</sup>ayas) ‘to crush out of shape, cause to wither, kill (plant)’. Mt. orge ‘to blunt’. [DEDR 954, EKHP 420] See also oḍ<sup>?</sup>ka §5.3.11.1 and oḍ<sup>?</sup>xa §5.4.8.16.
- .4 Kx. oḡa ‘to swim, float’. Mt. oḡe ‘to swim, float’. [DEDR 1031]
- .5 Kx. kūga ‘to [nod head in sleepiness], doze, slumber (out of time)’. Mt. kūge ‘to slumber’. [DEDR 1902, EKHP 434]
- .6 Kx. cigā, cigi ‘young plant just piercing the soil, young seedling’; cigyar- ‘to sprout, shoot, come out’. [DEDR 2489, EKHP 432]
- .7 Kx. cūga ‘to harrow’. Mt. cūge ‘to poke, stir’; cūgure ‘to poke, pick (as one’s teeth or ear)’. [DEDR 2719]
- .8 Kx. cegalo ‘bark of tree’. Mt. ceglo ‘shell of fruit’. [DEDR 2751]
- .9 Kx. tāgr- ‘to blow (of the wind)’. Mt. tāgare ‘to wave, undulate, fly with a waving motion’. [DEDR 3149] Note §5.3.10.11.
- .10 Kx. tīga (also tigga) ‘monkey’. Mt. tige ‘monkey’. [DEDR 3270]

- .11 Kx. bag<sup>ə</sup>da ‘shank of the leg’. Mt. bagde ‘shank of the leg’. [DEDR 3816]
- .12 Kx. bāga ‘to scrape, peel off the epidermis of certain edible bulbs or certain creeper-fruits; comb [DEDR 5357]’. Mt. bāge ‘to pare (as bamboo)’. [DEDR 5363, EKHP 433]
- 5.3.8 PKxMt. \*+<sup>ə</sup>ga# > Kx. +<sup>ə</sup>ga | Mt. +ge
- .1 Kx. as<sup>ə</sup>ga (as<sup>ə</sup>g<sup>ə</sup>ya) ‘to adhere, stick’. Mt. asge ‘to stick’. Note §5.5.4.2. [DEDR 43, EKHP 453]
- .2 Kx. ar<sup>ə</sup>ga (ar<sup>ə</sup>g<sup>ə</sup>ya) ‘to climb, mount an animal, rise (as sun, moon, stars), rise in pitch’; ar<sup>ə</sup>g<sup>ə</sup>ga (ar-gas) ‘to make climb, lift, haul up, [offer up]’. Note causativity shift with -<sup>ə</sup>; Mt. arge ‘to climb’. [DEDR 231]
- .3 Kx. is<sup>ə</sup>ga (is<sup>ə</sup>g<sup>ə</sup>ya) ‘to open in long slits, chap, crack’. Mt. isge ‘to be well parched (as grain), be cracked (as skin)’. [DEDR 423]
- .4 Kx. os<sup>ə</sup>ga ‘rat’. Mt. osge ‘mouse’. [DEDR 941]
- .5 Kx. kal<sup>ə</sup>ga (kal<sup>ə</sup>g<sup>ə</sup>ya, kalgas) ‘to bite so as to disable, open or unhusk with the teeth’. Mt. kalge ‘to break off a part with the teeth’. [DEDR 1315] See also kal<sup>ə</sup>ka §5.3.10.6.
- .6 Kx. kid<sup>ə</sup>ga (kid<sup>ə</sup>g<sup>ə</sup>ya) ‘to drizzle; rain, spray’. [DEDR 1546, EKHP 606]
- .7 Kx. ned<sup>ə</sup>ga ‘to fall off (of leaves and fruit), fall through rottenness’; nedg<sup>ə</sup>r- ‘to dry up, evaporate’. Mt. ne<sup>ə</sup>ge ‘to shake off (as fruit from a tree)’. [DEDR 2923, EKHP 610a]
- .8 Kx. tis<sup>ə</sup>ga (tisg<sup>ə</sup>as) ‘to open (door, shutter)’. Mt. tisge ‘to lift the latch’. [DEDR 3259, EKHP 458]
- .9 Kx. na<sup>ə</sup>ga ‘bedbug’. Mt. narge ‘bedbug’. [DEDR 3621A, EKHP 442]
- .10 Kx. nur<sup>ə</sup>ga ‘to shove in, insert, push back into the fire the unburnt ends of logs protruding’. Mt. nurge ‘to drag or draw (as a net)’; nurge ‘to move onward or slide’. [DEDR 3711]
- .11 Mt. pa<sup>ə</sup>ge ‘to stir up, incite’. Br. pa<sup>ə</sup>ref- ‘to instigate, provoke’. [DEDR 3861]
- .12 Kx. mus<sup>ə</sup>ga ‘to wrap up, envelop, pack in a bundle’. Mt. musge ‘to pack up, tie in a bundle’. [DEDR 4915, EKHP 176]
- .13 Kx. bas<sup>ə</sup>ga ‘to [pare], peel (by progressive cuts only)’. Mt. basge ‘to peel’. [DEDR 5340, EKHP 1058b]
- .14 Kx. bid<sup>ə</sup>g<sup>ə</sup>ga ‘to lay partly bare the contents by violent action upon the covering, tear open, make a rent, make burst or crack by weighing upon’. Mt. bi<sup>ə</sup>ge ‘to expand, open (as the lips or eyelids)’. [DEDR 5484, EKHP 461]
- 5.3.9 PKxMt. \*-g<sup>ə</sup># > Kx. -g | Mt. -gu
- .1 Kx. mar<sup>ə</sup>g ‘horn, antler’. Mt. margu ‘horns’. Br. mary ‘horn’. [DEDR 4720] See §2.5.
- PDr. \*-kk-
- 5.3.10 PKxMt. \*-k- > Kx. -k(k)- | Mt. -k- \*/ V\_V
- .1 Kx. a<sup>ə</sup>k<sup>ə</sup>ka (a<sup>ə</sup>k<sup>ə</sup>ya) ‘to knead, shampoo by squeezing from place to place’. Mt. a<sup>ə</sup>ke ‘to thrust or wedge in’. [DEDR 63, EKHP 4]
- .2 Kx. e<sup>ə</sup>ka ‘tortoise’. Mt. eke ‘a kind of small tortoise’. [DEDR 773]
- .3 Kx. e<sup>ə</sup>ka (i<sup>ə</sup>kyas) ‘to walk, direct or conduct affairs’. Mt. e<sup>ə</sup>ke ‘to go, move’. [DEDR 0871, EKHP 295]
- .4 Kx. ok<sup>ə</sup>ka (uk<sup>ə</sup>kyas) ‘to sit down, seat oneself, alight, perch, hold a session, come to a standstill, acquire steadiness, reside’. Mt. oke ‘to sit, be situated’ [DEDR 930]
- .5 Kx. o<sup>ə</sup>k<sup>ə</sup>ka (u<sup>ə</sup>k<sup>ə</sup>ya) ‘to strip a tree of its bark’. Mt. o<sup>ə</sup>rye ‘to peel, unveil, drive away (as clouds by wind)’. [DEDR 757a] See o<sup>ə</sup>k<sup>ə</sup> and o<sup>ə</sup>rku §5.3.11.1
- .6 Kx. kal<sup>ə</sup>ka (kalkyas) ‘to bite so as to disable, open or unhusk with the teeth’. Mt. kalke ‘to bite off’. [DEDR 1315] See also §5.3.8.5.
- .7 Kx. cak<sup>ə</sup>ga ‘to sharpen an edge instrument, whet’. Mt. cake ‘to sharpen, whet’. [DEDR 2277]
- .8 Kx. cal<sup>ə</sup>ki ‘a special kind of grass for making brooms; a broom’. Mt. celaki ‘a broom made of grass’. [DEDR 2375]
- .9 Kx. cak<sup>ə</sup>ta, cak<sup>ə</sup>ti ‘a slice’. Mt. caka ‘a slice’. [DEDR 2748]
- .10 Kx. tak<sup>ə</sup>ga ‘to [graze, knock slightly], rub or graze in passing’. Mt. take ‘to touch, hurt (as a sore)’. [DEDR 3004, EKHP 412]
- .11 Kx. tāka ‘air, wind, breeze’. Mt. tāke ‘wind, air’. Br. tahō ‘wind’. [DEDR 3149] Note §2.8.7.
- .12 Kx. tuk<sup>ə</sup>ka ‘to give a push to, shove’. Mt. tuke ‘to push, remove’. [DEDR 3286]
- .13 Kx. nuk<sup>ə</sup>ga (nuk<sup>ə</sup>ca) ‘to shake, [wave about], cause to oscillate, esp. up and down’. Mt. nuke ‘to shake’; nukre ‘to swing, rock, be shaken’. [DEDR 3696]
- .14 Kx. bak<sup>ə</sup>ka ‘claws of crab; forceps, shears’. Mt. bake ‘forceps’. [DEDR 3814]
- .15 Kx. bāka ‘to [gather up into something], throw in, put in a vessel (basket, sack) any dry goods (corn, money, etc.) with the hands’. Mt. bāke ‘to take up (as earth)’. [DEDR 4051]

- .16 Kx. pāka 'to take in one's arms, on one's lap; [tote child on hip]'. Mt. pāke 'to take in the lap'. [DEDR 4050]
- .17 Kx. pic<sup>o</sup>k<sup>o</sup>a 'to press and bruise, flatten by crushing'. [DEDR 4135, EKHP 417]
- .18 Kx. pok<sup>o</sup>l 'cocoon, silk'. Mt. poklu 'tassar silk'. [DEDR 4462]
- .19 Kx. makka 'the sal tree, *Shorea robusta*'. Mt. make 'the sal tree'. [DEDR 4621]
- .20 Kx. bīn<sup>o</sup>ko 'star'. Mt. bīṅḍke 'star'. [DEDR 4876, EKHP 421]
- .21 Kx. mur<sup>o</sup>ka 'palas tree, *Butea frondosa*'. Mt. murke, murko 'a kind of tree'. Possible Munda influence. [DEDR 4981, EKHP 423]
- .22 Kx. mur<sup>o</sup>ka 'to cut off, amputate, cut in twain by hacking, cut in small pieces, damage by cutting off a part, mangle, mutilate'. Mt. murke 'to cut into bits, cut across, cross (a river)'. [DEDR 4975, EKHP 224]
- .23 Kx. mūka 'knee, elbow'. Mt. mūke 'knee'; muki 'cubit'. [DEDR 4990]
- 5.3.11 PKxMt. \*-kk<sup>o</sup># > Kx. -kk<sup>o</sup>, -k | Mt. -ku
- .1 Kx. oḍ<sup>o</sup>k 'bark of tree'. Mt. oṛku 'bark, husk, peel, scale'. [DEDR 757a] See also oḍ<sup>o</sup>ka §5.3.7.3.
- .2 Kx. kukk<sup>o</sup> 'head, extremity; mother-tuber'. Mt. kuku 'head'. [DEDR 1630]
- .3 Kx. pīk 'excrements, earwax; [bile]'. Mt. piku 'excrements'. Br. pī 'excreta, esp. of human beings and birds'. [DEDR 4210, EKHP 426]
- .4 Kx. bēk 'salt'. Mt. bēku 'salt'. Br. bē 'salt, piquancy, spirit, flavor'. [DEDR 4428] Note §3.5.10.
- .5 Kx. pōk 'ant (not white ant)'. Mt. pōku 'ant'. [DEDR 4575]
- .6 Kx. māk 'antelope, red deer'. Mt. māku 'stag'. [DEDR 4780, EKHP 93]

## PDr. \*-nk-

- 5.3.12 PKxMt. \*-ŋg- > Kx. -ng- | Mt. -ŋg
- .1 Kx. eng<sup>o</sup>r<sup>o</sup>a (eng<sup>o</sup>ra) 'to remain over, be in excess, be passed over, escape'. Mt. enge, engre 'to remain over'. [DEDR 780, EKHP 466]
- .2 Kx. konk<sup>o</sup>ḍo 'shaped like a hook, curved, winding'. Mt. koṅgori 'concave'. [DEDR 2032]
- .3 Kx. cingga 'to pinch slightly between the finger ends, give a slight scratch (e.g., to see if a fruit is ripe)'. Mt. cinge 'to pinch'. [DEDR 2505]
- .4 Kx. nus<sup>o</sup>nga 'to [emit a] smell; [to sniff, smell]'. [DEDR 4886]
- 5.3.13 PKxMt. \*-N<sup>o</sup>g- > Kx. -ng- | Mt. -Ng- (N = any nasal)
- .1 Kx. tunggul 'a dream'. Mt. tumgle 'a dream'. Br. tuy 'sleep, dream'; tuyi 'sleepy'; tungān 'asleep, sound asleep'. [DEDR 3376a, EKHP 445]
- 5.3.14 PKxMt. \*-N<sup>o</sup>kk- > Kx. -nk(k)- | Mt. -Nk-, -k / \_C- (N = any nasal)
- .1 Kx. unkk<sup>o</sup> 'husk, chaff'. Mt. umku 'husk, chaff'. [DEDR 0637, EKHP 427]
- .2 Kx. kank<sup>o</sup>, kan<sup>o</sup>k<sup>o</sup> '[firewood], wood, fuel, timber'. Mt. kanku 'wood'. [DEDR 1165]
- .3 Kx. benkka 'to turn from a straight line, bend, curve'. [DEDR 5335]

## 5.4 Regular Uvulars

## PDr. \*q-

In the PDr. environment before a high vowel (see §4.4):

- 5.4.1 PKxMt. \*q- > Kx. x- | Mt. q- PDr. \*/#\_{i,i,u,ū}
- Remember that i > e and u > o after PKxMt \*q-.
- .1 Mt. qese 'to tease, disturb'. [DEDR 1518] Cf. Kuwi kijowi 'joke'.
- .2 Kx. xer<sup>o</sup>ca (xir<sup>o</sup>c<sup>o</sup>ya) 'to rub off, scour'. Mt. qerce 'to scrape'; qēre 'to shave'. Br. karying 'to shear, crop down, mow down'. [DEDR 1564] Cf. Pa. kir- 'to scratch'.
- .3 Mt. qodali 'a spade'. [DEDR 1722] Cf. Ta. kuntāli 'pickaxe'.
- .4 Kx. xopp- 'to form into a pile, heap up'. Mt. qope 'to heap, pile up'. [DEDR 1731a] Cf. Ta. kuppai 'heap, mound'.
- .5 Kx. xoppa 'shrub, bush'. [DEDR 1733] Cf. Pa. guppa 'scrub'.
- .6 Mt. qoṭri 'a blind person'; qoṭre 'to become blind'. [DEDR 1787] Cf. Ta. kurutu 'blindness'.
- .7 Kx. xossa (xussya) 'to become weak or soft, hence: decay, rot, molder away, be worm-eaten, be worn, be wasted'. [DEDR 1822] Cf. Go. kukkānā 'to go rotten, useless'.
- .8 Kx. xos<sup>o</sup>ga 'leg, thigh'. Mt. qosge 'thigh'. [DEDR 1840, EKHP 347] Cf. Ga. kuyug 'thigh'.
- .9 Kx. xōṅḍ- 'to bring together, collect into one place, gather, wrinkle (nose), multiply in imagination'. [DEDR 1882] Cf. Ta. kūtu 'to come together, join, meet'.

- .10 Kx. xōra (xūrya) ‘to thrive, be prosperous, increase in honor’. Mt. qōre ‘to be enough, be much, be in excess’. [DEDR 1899] Cf. Te. kūru ‘to be abundant, excessive’.

In the PDr. environment before a low or mid vowel:

5.4.2 PKxMt. \*q- > Kx. x- | Mt. q- \*/ #\_{a,ā}

- .1 Kx. xassa ‘to derange (stomach), act as purgative’. Mt. qaswe ‘to eat greedily, nip off with the teeth’. [DEDR 1097]
- .2 Kx. xařaxařařa ‘to rattle loosely together’. Mt. qařqaře ‘to murmur’. [DEDR 1110a]
- .3 Kx. xann ‘eye, eye of tuber’. Mt. qanu ‘eye’. Br. xan ‘eye, bud’. [DEDR 1159a]
- .4 Kx. xann ‘place on bamboo or cane where side shoot was cut away’. Br. xan ‘knot in wood’. [DEDR 1160]
- .5 Kx. xađ<sup>ə</sup>a (xađða) ‘to steal, win by address or gradual and imperceptible means’; xalb ‘theft’; xalbas ‘thief’. Mt. qale (qađ-) ‘to rob, steal’; qalwe ‘thief’; qalwi ‘theft’; qalwo ‘stealthily, secretly’. Br. xalling ‘to lift (cattle)’. [DEDR 1372] Kurux has back-formed the root from the past. Br. kalp ‘deceitful’ is a loan from Baluchi kəlp. Origin is open to question; see ILEB:E81.
- .6 Kx. xall<sup>ə</sup> ‘field, piece of land suitable for tillage’. Mt. qalu ‘field on the hills’. [DEDR 1376]
- .7 Kx. xand<sup>ə</sup>a ‘to sleep’. Mt. qandre ‘to sleep’; qanqe ‘sleep’. [DEDR 1407]
- .8 Kx. xadd<sup>ə</sup> ‘child, young animal or plant’; xaddas ‘son, boy’; xaddar ‘children’; xada ‘small child, young of animal, small’. Mt. qade ‘son’. Br. xan- ‘to give birth to’. [DEDR 1411]
- .9 Kx. xāp- ‘to protect, guard, tend, wait, wait for’. Mt. qāpe ‘to wait for, watch’. Br. xwāhing ‘to graze’; xwafing ‘to make/take to graze’. [DEDR 1416]
- .10 Kx. xana ‘to be pleasant to the eye, be of good effect, suit well’. Br. xān- ‘to see’. [DEDR 1443]
- .11 Kx. xāya (xayyas) ‘to lose moisture, dry up, evaporate; lose flesh, waste away’. Mt. qāye ‘to become dry, wither, become lean, fade’. Br. xāxar ‘fire, anger, jealousy’. [DEDR 1458]
- .12 Kx. xanj<sup>ə</sup>a (xanjja) ‘to bear fruit, be produced, come forth’; xanjka, xanjpa ‘fruit, effect, result’. Mt. qanje ‘to bear fruit’; qanjpe ‘fruit’. [DEDR 1459]
- .13 Kx. xēna ‘unripe, raw, half-cooked, unboiled (water), green, verdant, wet’. Mt. qēne ‘raw, green, unripe’. [DEDR 1459]
- .14 Kx. xār- ‘to gnaw or nibble at, eat’. Mt. qāre ‘to bite off’. [DEDR 1474]
- .15 Kx. xajj<sup>ə</sup> ‘earth, mold, clay, mud, corpse’. Mt. qaju ‘earth, mud’. [DEDR 1958]

5.4.3 PKxMt. \*q- > Kx. x- | Mt. q- \*/ #\_{e,ē}

- .1 Kx. xēso ‘red, blood’; xēs ‘blood, anger’. Mt. qēso ‘red’; qēsu ‘blood’. Br. xisun ‘red; gold’. [DEDR 1931] See §2.5.
- .2 Kx. xess<sup>ə</sup> ‘paddy (rice in husk or in the field)’. Mt. qesu ‘paddy’. [DEDR 1936]
- .3 Kx. xedd<sup>ə</sup> ‘foot, leg’. Mt. qeđu ‘the legs, the feet’. [DEDR 1943]
- .4 Kx. xetta (xittyas) ‘to shake off or out by imparting jerks, clean by shaking or beating’. Mt. qete ‘to dust, beat the jungles when hunting’. [DEDR 1954]
- .5 Kx. xeb<sup>ə</sup>da ‘ear’. Mt. qeβwu ‘ear’. Br. xaf ‘ear’. [DEDR 1977a] Note metathesis in Malto.
- .6 Kx. xēx<sup>ə</sup>l ‘ground, earth we tread on, soil, floor’. Mt. qēqlu ‘the earth, the world, land’. [DEDR 1993]
- .7 Kx. k<sup>h</sup>iri ‘tale, fable, legend, riddle’. Mt. qēri ‘tale’. [DEDR 2006] Kurux shows the shift of x to k<sup>h</sup> before i which is normal outside of verbs and regular umlaut.
- .8 Kx. xēr ‘fowl’. Mt. qēru ‘fowl’. [DEDR 2013]
- .9 Mt. qēge ‘to ask’. [DEDR 2017a]
- .10 Kx. xekk<sup>h</sup>a ‘hand, arm’. Mt. qeqe ‘hand’. [DEDR 2023]

5.4.4 PKxMt. \*q- > Kx. x- | Mt. q- \*/ #\_{o,ō}

- .1 Kx. xořta (xuttyas) ‘to break, smash, pierce, break open’. Mt. qoře ‘to break, knock, strike’. [DEDR 2063]
- .2 Kx. xota/xosa (xotta) ‘to cut by striking, slash, inflict a gash, wound by a blow from any heavy and sharp-edged instrument, decapitate’. [DEDR 2091]
- .3 Kx. xoyya (xossa) ‘to cut down grass and the like with a sickle; mow, reap’. Mt. qoye ‘to reap’. [DEDR 2119]
- .4 Kx. xor<sup>ə</sup>p ‘pus’; xor<sup>ə</sup>pa (xur<sup>ə</sup>p<sup>ə</sup>ya) ‘to ripen as a boil, suppurate’. Mt. qorpu ‘pus’. [DEDR 2130]
- .5 Kx. xōra (xūrya) ‘to shoot out new leaves’. Mt. qōroce ‘to sprout’. Br. xarring ‘to sprout’; xarrun ‘green, blue, black and blue; fruitful’; xarruni ‘greenness; wife’. [DEDR 2149]
- .6 Kx. xōr ‘leaf-bud, new leaves’. Mt. qōro ‘infant’. [DEDR 2149]
- .7 Kx. xōl ‘rice-sheaf’. [DEDR 2253]

No comparable PDr. environment

5.4.5 PKxMt. \*q- > Kx. x- | Mt. q-

- .1 Kx. xakk<sup>h</sup>a ‘to get, receive, acquire, come up with, catch in fault’. Mt. qaqe ‘to receive, get a chance’. [DEDR 1082]
- .2 Kx. xacca ‘to divide (soft material) by force, break by pulling, pull to pieces, break off, bite off’. Mt. qaçe ‘to break as a cord, cure an illness by exorcism, end, finish’. [DEDR 1100]
- .3 Kx. xami ‘spear grass (used for thatching houses, feeding cattle, etc.)’. Mt. qami ‘thatching straw’. [DEDR 1232]
- .4 Kx. xarb- ‘to give an extra pounding to rice, for cleaning it from grains unhusked or spoiled’. Mt. qarwe ‘to clean rice by pounding’. [DEDR 1295]
- .5 Kx. xalli ‘father’s younger brother’s wife’. Mt. qali ‘mother’s sister’. [DEDR 1318]
- .6 Mt. qāwe ‘to speak, whisper, or sound (as the leaves of a tree)’; qāwe-naqe ‘to converse’; qawse ‘to jingle, warble, sound (as rushing water)’. Remove from DEDR 1341. See §5.3.5.9.
- .7 Kx. ximb- ‘to embrace’; xeōc- ‘to clasp in the arms, embrace, place under the arm, adopt’. Mt. qemçe ‘to carry on the side, support with the arm’. Br. xumb ‘an embrace, as much as can be carried in one’s two arms’. [DEDR 1558] Note §3.5.3.
- .8 Kx. xeppas ‘a visitor or friend entertained in the house, guest; fellow-villager, neighbor’. Mt. qepo ‘inhabitant of village’; qepu ‘village’. [DEDR 1956]
- .9 Kx. xēs<sup>r</sup> ‘neck, shoulders’. Mt. qasru ‘neck’. [DEDR 1996]
- .10 Kx. xēnda (xind<sup>ɔ</sup>ya) ‘to buy, purchase’. Mt. qēnde ‘to take along with, have with, possess’. [DEDR 2001]
- .11 Kx. xēl ‘tomtom’. Mt. qēle ‘a small drum’; qēlwa ‘a drummer’. [DEDR 2014]
- .12 Kx. xossa (xussy) ‘to burn with flame, catch fire, (fire) catches’. Mt. qose ‘to be burnt, burn’. [DEDR 2042]
- .13 Kx. xoṭṭa ‘the bel fruit, *Aegle marmelos*’. Mt. qoṭe ‘the bel fruit’. [DEDR 2072]
- .14 Kx. xoṇḍ<sup>ɔ</sup>xa, xōṛ<sup>ɔ</sup>xa ‘deep; a pit, abyss’. Mt. qoṇḍe ‘deep, lowlands’. [DEDR 2082]
- .15 Kx. xotor ‘a kind of fish’. Mt. qotro ‘a kind of fish’. [DEDR 2095]
- .16 Kx. xola ‘tail’. Mt. qoli ‘tail’. [DEDR 2135]
- .17 Kx. xoll- ‘to serve out of a cooking vessel, ladle’. Mt. qole ‘to take up liquids (as with a spoon)’. [DEDR 2140]
- .18 Kx. xolla ‘razor’. Mt. qole ‘razor’. [DEDR 2141]
- .19 Kx. xōc<sup>ɔ</sup>l ‘bone’. Mt. qoclu ‘bone’. [DEDR 2188]
- .20 Kx. xōsa (xūsyas) ‘to pulverize by pounding with a heavy instrument which beats vertically, harass’. Mt. qōse ‘to pound, smash’. Br. xoś(k)ing ‘to rub, interfere with’. [DEDR 2189] Note §3.5.4.
- .21 Kx. xōy- (xojjas) ‘to measure, ascertain the extent, height, quantity, or capacity of’. Mt. qoye ‘to weigh, measure’. [DEDR 2227]

PDr. \*-q-

5.4.6 PKxMt. \*-G- > Kx. -x- | Mt. -G-

- .1 Kx. ar<sup>ɔ</sup>xa (ar<sup>ɔ</sup>x<sup>ɔ</sup>ya) ‘to dig’. Mt. arge ‘to dig’. [DEDR 11]
- .2 Kx. ax<sup>ɔ</sup>a (akk<sup>h</sup>a, ax<sup>ɔ</sup>ca) ‘to know, realize; experience, mistake for’. Mt. āge (aq-) ‘to know, understand’. [DEDR 17]
- .3 Kx. end<sup>ɔ</sup>xa (ind<sup>ɔ</sup>x<sup>ɔ</sup>ya) ‘to remove the outer envelope from a fruit, clean and trim vegetables’. Mt. eṅgde ‘to clear away weeds’. [DEDR 801]
- .4 Kx. er<sup>ɔ</sup>xa (ir<sup>ɔ</sup>x<sup>ɔ</sup>ya) ‘(small children, animals) to defecate, (adults) have diarrhea’. Mt. erge ‘to go to stool’. [DEDR 0813]
- .5 Kx. ēxa (īxyas) ‘to lose heat, cool down, lose the heat of excitement or passion’. Mt. ēge ‘to become cool, be healed’. [DEDR 0875]
- .6 Kx. ēxa ‘to be dissatisfied, want more’. Mt. ēge ‘to be dissatisfied’. [DEDR 0878]
- .7 Kx. ol<sup>ɔ</sup>xa (ulxyas) ‘to bewail, lament’. Mt. olge ‘to cry, weep’. Br. hoying ‘to weep’. [DEDR 0996]
- .8 Kx. xar<sup>ɔ</sup>xa ‘to ring, jingle, clink, give out a sound’. Mt. qargre ‘to cry out’. [DEDR 1291]
- .9 Kx. xal<sup>ɔ</sup>xa ‘to disturb, make muddy (as water)’. Mt. qalge ‘to disturb’ (as water). [DEDR 1303]
- .10 Kx. xod<sup>ɔ</sup>x<sup>ɔ</sup>a (xud<sup>ɔ</sup>x<sup>ɔ</sup>ya) ‘to be reduced to pulp by unskillful cooking; to get discouraged, despair’; xod<sup>ɔ</sup>x<sup>ɔ</sup>a (xodxas) ‘to reduce to a soft uniform mass, cook until they fall to pieces; to worry, deprive of self-confidence, dishearten; to burn by overheating’. Mt. xoθge ‘to excite, incline’. [DEDR 2084]
- .11 Kx. xol<sup>ɔ</sup>k<sup>h</sup>a, xol<sup>ɔ</sup>xa ‘to cause one to bend the head’. Mt. qolgru ‘below, beneath, underneath’. [DEDR 2136]

- .12 Kx. cal<sup>ə</sup>xa 'to open, uncover'. Mt. calge 'to split or break open'. Br. caling 'to become cracked, split'. [DEDR 2377]
- .13 Kx. can<sup>ə</sup>xa 'to turn stale (of cooked things, meat, or vegetable), turn moldy (of bread)'. Mt. cange 'to be or become rotten (of cooked food)'. [DEDR 2424]
- .14 Kx. cāṭ<sup>ə</sup>xa (cāṭxyas) 'to stride, stride across, jump over'. Mt. cāḡte 'to jump over'. [DEDR 2440]
- .15 Kx. cox<sup>ə</sup>?a (cokk<sup>h</sup>a) 'to pluck, [pull off (fruit)], cull (fruit, flowers, useful leaves)'; coxr<sup>ə</sup>?a 'to fall off (as fruits); be plucked'. Mt. coge (coq-) 'to pluck off, set free'; cogre 'to drop off, get free, be ransomed'. [DEDR 2644]
- .16 Kx. cēx<sup>e</sup>l '[edible] greens, plants (in general)'. Mt. ceglu '[twigs], small branches'. [DEDR 2789]
- .17 Kx. cur<sup>ə</sup>xa 'to pour, let fall in drops, let (water, grain) in or out through a hole or crevice, leak, ooze, fall in drops, trickle'. Mt. curge 'to ooze out, fall in drops'. Br. curring 'to flow, gush'. [DEDR 2883]
- .18 Kx. tuḡ<sup>ə</sup>xa 'to take skin off, shell, strip'. Br. trukking 'to pluck off, pluck, strip'. [DEDR 3358]
- .19 Kx. nūx<sup>ə</sup>?a 'to hide oneself, be kept secret'. Mt. nuḡgre 'to hide (*intr.*), disappear'; luḡgre 'to hide oneself'. [DEDR 3714] PKxMt. \*nulgr- with various assimilations and simplifications. Mt. n>l / \_Vl is common; see §5.5.4.5.
- .20 Kx. nūx<sup>ə</sup>?a 'to bow (the head), keep down (the eyes)'. Mt. nūge 'to droop, walk or behave without energy'. [DEDR 3723]
- .21 Kx. nāx<sup>ə</sup>?a 'to breathe, rest, recover oneself'. Mt. nēge 'breath'. [DEDR 3765]
- .22 Kx. nix<sup>ə</sup>cār<sup>ə</sup>?a 'to experience a convulsive and somewhat prolonged heaving of the breast, sigh, sob'. Cf. Mt. nēgye 'to breathe'. [DEDR 3765]
- .23 Kx. nun<sup>ə</sup>xa 'to swallow without chewing, gulp hastily, devour'. Mt. nunge 'to swallow'. Br. nuṡyūšing 'to swallow, devour, gulp down'. [DEDR 3697] Cf. Kx. nul<sup>ə</sup>xa 'to swallow without chewing, gulp hastily, devour'. [DEDR 3791]
- .24 Kx. pad<sup>ə</sup>xa 'to thicken, acquire half consistency (as glue, paste), become soft, half-melt, render half fluid'. Mt. paḡge 'to be congealed'. [DEDR 3827]
- .25 Kx. par<sup>ə</sup>x<sup>ə</sup>?a 'to separate or force asunder the two parts of some object previously split, two limbs, etc.'. Mt. parge 'to split, cleave, rend'. [DEDR 3962a]
- .26 Kx. ped<sup>ə</sup>xa (pid<sup>ə</sup>x<sup>ə</sup>yas) 'to pinch, squeeze, strangle'. Mt. peḡge 'to break open (as a large fruit)'. [DEDR 4165]
- .27 Kx. pūxa 'to boil'. Mt. pūge 'to boil'. Br. paḡling 'to be boiling, on the boil, stewed, boil with rage'. [DEDR 4315] See also §5.4.6.30.
- .28 Kx. poxa 'green pigeon, *Carpophaga sylvatica*'. Mt. poḡe 'green pigeon'. [DEDR 4454]
- .29 Kx. pox<sup>ə</sup>ta 'froth, foam'. Mt. potḡe, potḡo 'froth, foam'. [DEDR 4463]
- .30 Kx. pūxa 'to swell (as rice in cold water, as the result of a fall, of an illness)'. Mt. pūge 'to swell'. [DEDR 4469] See also §5.4.6.27.
- .31 Kx. por<sup>ə</sup>xa (purxyas) 'to swell as the result of imbibed water'. Mt. porḡe 'to be soaked'. ? Br. puḡēn 'cold, chilly, cool, not inflamed, stale (of bread)'; puḡi 'coldness, cold, frost'. [DEDR 4505]
- .32 Kx. maḡ<sup>ə</sup>xa 'to get dirty, soiled, lose brightness or freshness, be ashamed, grow exhausted, be spent'. Mt. maḡgre 'to become black'; maḡro 'black'. [DEDR 4750]
- .33 Kx. mul<sup>ə</sup>xa 'to sink, walk or fall into, be submerged, founder, go to the bottom, (sun or moon) sets, get hopelessly lost'; mun<sup>ə</sup>xa 'id.'. Mt. mulḡe 'to dip in, draw water'; mulgre 'to dive, be dipped in'. [DEDR 4993]
- .34 Kx. mer<sup>ə</sup>xa 'sky, heaven'. Mt. merḡu, merḡe 'sky, heaven'. [DEDR 5074]
- .35 Kx. moj<sup>ə</sup>xa 'to create smoke, smoke anything, fumigate'; mos<sup>ə</sup>ga 'id.'. Mt. moḡe 'to smoke, emit smoke'; moḡje 'to fumigate'. Br. moḡ 'smoke'. [DEDR 5131]
- .36 Kx. bir<sup>ə</sup>x<sup>ə</sup>?a 'to help to some more at meals, cook some accessory ingredient along with the main article of food, mix several kinds of seeds (esp. for sowing)'. Mt. birḡe 'to mix, add, join'. [DEDR 5407]
- 5.4.7 PKxMt. \*-q<sup>ə</sup># > Kx. -x | Mt. -gu
- .1 Kx. or<sup>ə</sup>x '(finger)nail'. Mt. orḡu '(finger)nail'. Br. hōr 'finger'. [DEDR 561]
- .2 Kx. kūḡ<sup>u</sup>x, kuḡ<sup>u</sup>x 'Kurux, Oraon'. [DEDR 1649, EKHP 400]
- .3 Kx. merxa 'sky, heaven'. Mt. merḡu, merḡe 'sky, heaven'. [DEDR 5074] Kx. merxa corresponds directly with Mt. merḡe.

PDr. \*-qq-

5.4.8 PKxMt. \*-q- > Kx. -x- | Mt. -q-

- .1 Kx. ūxa (ūx<sup>ə</sup>ya) ‘to grow dark, be overtaken by night; darkness, dark, the rainy season’. Mt. ūqe ‘to be or become dark; dark, darkness’. [DEDR 730]
- .2 Kx. ēx-era ‘to give complacent looks at one’s own dress’. Mt. ēqto ‘fop, coxcomb’. [DEDR 873]
- .3 Kx. ēxa-gali ‘rainy season’. ēqe ‘rainy season’. [DEDR 876]
- .4 Kx. ēxa ‘gadfly, horsefly’; tīni ‘fly’. Br. hiĻ ‘fly’. Cf. Mt. tēni ‘bee’. [DEDR 0533]
- .5 Kx. xaṛxa ‘bitter, pungent, highly salted, harsh’; xaḍ<sup>ə</sup>xa ‘to taste unpleasant, be uttered harshly’. Mt. qaṛqe ‘bitter’; qaṛare ‘to throb with pain’. Br. xaṛēn ‘bitter’. [DEDR 1135]
- .6 Kx. xāxa ‘crow’. Mt. qāqe ‘crow’. Br. xāxo ‘crow’. [DEDR 1425]
- .7 Kx. xēx<sup>e</sup>l ‘ground, earth we tread on, soil, floor’. Mt. qēqlu ‘the earth, the world, land’. [DEDR 1993]
- .8 Kx. xōxa ‘behind (of time or space), afterwards’; xōx- ‘to throw behind one’s back, cast aside, turn one’s back upon, arrive before another’. Mt. qōq ‘behind, at the back’; qōqe ‘the back’; qōqeye ‘to turn one’s back’. [DEDR 2182] Also §5.4.10.3.
- .9 Kx. tixil ‘husked paddy, rice’; tiqlu, tiqalu ‘rice [millet]’. [DEDR 3271]
- .10 Kx. pāx<sup>ə</sup>a ‘to expand by main strength, force open’. Cf. Mt. pakme ‘division of house’. [DEDR 3808] Malto form goes with DEDR entry. Kurux seems unrelated.
- .11 Kx. pi<sup>x</sup>a ‘to press out (oil), squeeze, harass’. Mt. piqe ‘to wring or squeeze out, milk’; pilqe ‘to squeeze’. Br. piĻing, princing ‘to squeeze, squeeze out, massage, press hard’. [DEDR 4183]
- .12 Kx. māxa ‘night’. Mt. māqu ‘night’. Br. maun ‘black, dark (of night)’. [DEDR 4781]
- .13 Kx. mūxa ‘frog’. Mt. mūqe ‘frog’. [DEDR 5023]
- .14 Kx. mēxa (mixyas) ‘to call, call after loudly, hail’. Mt. mēqe ‘to bleat’. Cf. Br. mēĻ ‘sheep, she-goat’. [DEDR 5087]
- .15 Kx. mōxa (mok<sup>h</sup>a) ‘to eat (anything except cooked rice)’. Mt. mōqe (moq-) ‘to eat (as meat or fruit)’. [DEDR 5127]
- .16 Kx. od<sup>ə</sup>xa (ud<sup>ə</sup>x<sup>ə</sup>ya), od<sup>ə</sup>x<sup>ə</sup>a (odxas) ‘to render less tight, detach, get rid of’. [DEDR 5243]
- 5.4.9 PKxMt. \*-q- > Kx. -(k)k<sup>h</sup>- | Mt. -q-
- .1 Kx. al<sup>ə</sup>k<sup>h</sup>a (al<sup>ə</sup>k<sup>h</sup>a<sup>y</sup>a) ‘to laugh, laugh at, mock, seduce’. Mt. alqe ‘to laugh’. [DEDR 254]
- .2 Kx. ur<sup>ə</sup>k<sup>h</sup>a (ur<sup>ə</sup>kk<sup>h</sup>y<sup>y</sup>a) ‘to come or go out, set out on a journey, germinate, break out (eruption), evolve’. Mt. urqe ‘to come out, come forth’. [DEDR 668]
- .3 Kx. el<sup>ə</sup>k<sup>h</sup>a (il<sup>ə</sup>k<sup>h</sup>a<sup>y</sup>a) ‘to pour liquid out (by tilting a vessel standing on the ground)’. Mt. eqe ‘to pour out from a vessel’. [DEDR 0840]
- .4 Kx. xakk<sup>h</sup>a ‘to get, receive, [overtake], acquire, come up with, catch in fault’. Mt. qaqe ‘to receive, get a chance’. [DEDR 1082]
- .5 Kx. xekk<sup>h</sup>a ‘hand, arm’. Mt. qeqe ‘hand’. [DEDR 2023]
- .6 Kx. cakk<sup>h</sup>a (cakkhyas/cakkos) ‘to pierce, prick, [shoot arrow], penetrate into, puncture; cause/experience a prickly sensation’. Mt. caqe ‘to sting, pierce, stab; sow with a planting-stick’. Br. jaxxing ‘to run into, pierce’. [DEDR 2278]
- .7 Kx. tin<sup>ə</sup>k<sup>h</sup>a ‘to strain, as at stool’; tiūkh- ‘to groan, moan under a violent effort’. Mt. tinqe ‘to strain (as at stool)’. [DEDR 3222]
- .8 Kx. nak<sup>h</sup>a<sup>y</sup>a (nak<sup>h</sup>ras) ‘reciprocal auxiliary’. Mt. -naqe ‘to act to one another’. [DEDR 3571]
- .9 Kx. mekk<sup>h</sup>a (mikk<sup>h</sup>yas), mēkh- (mikkhan) ‘to bake (bread, vegetables, fruit, fish) in a leaf wrapper’. Mt. meqe ‘to toast bread or eggs’. [DEDR 5053]
- .10 Kx. bekk<sup>h</sup>a (bikk<sup>h</sup>yas) ‘to have the windpipe stopped, be choked, (animals) to cough’. Mt. beqe ‘to be choked’. [DEDR 5383]
- 5.4.10 PKxMt. \*(q)q<sup>#</sup> > Kx. -x, -k<sup>h</sup> | Mt. -q
- .1 Kx. nāx ‘four things’. [DEDR 3655]
- .2 Kx. nal<sup>ə</sup>k<sup>h</sup> ‘work, action, labor, carrying out, use, efficiency’. [DEDR 3589]
- .3 Kx. xōxa ‘behind (of time or space), afterwards’. Mt. qōq ‘behind, at the back’; qōqe ‘the back’. [DEDR 2182] Also §5.4.8.8.
- PDr. \*-Nq-
- 5.4.11 PKxMt. \*-Nq- > Kx. -ng/ŋ- | Mt. -ŋG-
- .1 Kx. ang<sup>ə</sup>a (ang<sup>ə</sup>lāca) ‘to gape, open the mouth wide, be open’. Mt. aŋgle ‘to gape’. [DEDR 0034, EKHP 444]
- .2 Kx. anga ‘to feel pain in the soles of the feet from walking on a rough road’. [DEDR 0276, EKHP 446]

- .3 Kx. *cang<sup>ə</sup>r<sup>ə</sup>a* ‘to itch, be the seat of a titillation’. Note Mt. *cēqlkūṅḍe* ‘to tickle’. [DEDR 2274, EKHP 465]
- .4 Kx. *tengga* (*tinggyas*) ‘to tell, narrate, explain’. Mt. *teṅge* ‘to tell, point out, relate’. [DEDR 3409]
- .5 Kx. *bongga* ‘to run, run away, leave a place for good, keep clear of’. Mt. *boṅge* ‘to run, flee’. [DEDR 4473]
- 5.4.12 PKxMt. \*-N<sup>ə</sup>qq- > Kx. -n(k)k<sup>h</sup>- | Mt. -Nq- (N = any nasal)
- .1 Kx. *onk<sup>h</sup>a*, *unk<sup>h</sup>a* (*unkk<sup>hə</sup>ya*) ‘to get drunk, be intoxicated’. Mt. *onqe* ‘to be intoxicated, be under the effect of drink or poison’. [DEDR 0936]
- .2 Kx. *xōṅhr<sup>ə</sup>a* ‘to bend’; *xōṅh<sup>h</sup>-* ‘to bend, curve, deflect, force down someone’s head or back’. Mt. *qoṅqe* ‘to indent, notch, bend the knees slightly in dancing, form the ridge of a thatched roof’. [DEDR 2032]
- .3 Kx. *tin<sup>ə</sup>k<sup>h</sup>a* ‘to strain, as at stool’; *tūṅkh-* ‘to groan, moan under a violent effort’. Mt. *tinqe* ‘to strain (as at stool)’. [DEDR 3222]
- .4 Mt. *tonqe* ‘to bend, bend knees slightly while dancing’. Cf. Kx. *ṅaṅga* ‘to suspend, hang’. [DEDR 3478]
- .5 Kx. *toṅk<sup>h</sup>a* ‘to break any part of a plant with the fingers, cull or pluck a leaf or flower, prune a tree’. Mt. *toqe* ‘to nip off (as herbs), cut off (as bamboos); end, finish (as a narrative)’; *toqre* ‘to be at an end, be finished, be cut off, die’. [DEDR 3479] Nasal in Kurux seems anomalous.
- .6 Kx. *miṅk<sup>h</sup>a*, *miṅxa* ‘to close the eyes, wink; (eyes) to be closed, weigh down the eyelids’. Mt. *minqe* ‘to close or shut the eyes’. [DEDR 4877]

## 5.5 Irregular correspondences

- 5.5.1 PKxMt. \*k- > Kx. g- | Mt. k- Reduplications
- .1 Kx. *gun<sup>ə</sup>a* ‘to fret’. Mt. *kunkunare* ‘to murmur’. [DEDR 1685]
- 5.5.2 PKxMt. \*k- > Kx. k<sup>h</sup>- | Mt. (k-) Loans in k<sup>h</sup>
- A number of words in k<sup>h</sup>- have been identified by Kent Gordon as being Mundari or Hindi loans.
- .1 Kx. *k<sup>h</sup>as<sup>ə</sup>ra* ‘the itch’. [DEDR 1104] < Hindi *khasrā* ‘id.’ < Dr.?
- .2 Kx. *k<sup>h</sup>ac<sup>ə</sup>a* (*k<sup>h</sup>acca*) ‘to [pack down in sack], squeeze soft matter into a compact mass by pressing, trampling upon, working inside with a stick’. [DEDR 1087] [Cf. Mundari *k<sup>h</sup>acao* ‘to pack down’]
- .3 Kx. *k<sup>h</sup>al<sup>ə</sup>a* ‘to dilute, mix with water or other liquid’. [DEDR 1299] Looks like a reborrowing of a Dravidian term [DEDR] through Mundari, but no citations.
- .4 Kx. *k<sup>h</sup>ap<sup>ə</sup>a* ‘to cover exactly, fit upon hermetically, stick fast to or together’. [DEDR 1221] [Cf. Mundari *k<sup>h</sup>apao* ‘to cover exactly, hermetically seal’] < Dr.?
- .5 Kx. *k<sup>h</sup>oḍra* ‘hollow (of a tree trunk), full of holes; cavity inside a tree, hole’. < Hindi *khōḍar* [DEDR 1660]
- .6 Kx. *k<sup>h</sup>ar<sup>ə</sup>k<sup>h</sup>ar<sup>ə</sup>a* ‘to speak in sharp grating tone’. [DEDR 1386] [Cf. Mundari *k<sup>h</sup>ark<sup>h</sup>arao* ‘to make repeated crisp sounds when being cut or sliced’]
- .7 Kx. *k<sup>h</sup>aṭi* ‘bedstead, cot’. Mt. *kaṭe* ‘bedstead, cot’. < IA [DEDR 1145]
- .8 Kx. *k<sup>h</sup>opa*, *xoppa* ‘young people’s back hair when raised and folded up, chignon’. [DEDR 2110] [Cf. Hindi *khopā* (CDIAL: 3939)]
- .9 Kx. *k<sup>h</sup>app<sup>ə</sup>a*, *k<sup>h</sup>app<sup>ə</sup>le* ‘[suddenly], at one stroke, abruptly, unawares’. [DEDR 1320] [Cf. Mundari *k<sup>h</sup>appaken* ‘suddenly, at one stroke’]
- 5.5.3 PKxMt. \*key- ‘to die’
- .1 Kx. *k<sup>h</sup>e<sup>ə</sup>a* (*keccas*) ‘to die, fall out of use’; *k<sup>h</sup>i<sup>ə</sup>ū* ‘mortal’. Mt. *keye* (*kec-*) ‘to die’; *keyu* ‘mortal’. Br. *kahing* (*kask*) ‘to die, die down (of fire)’; *kasfing*, *kasifing* ‘to kill’. [DEDR 2426] This verb is irregular throughout Dravidian. The aspiration of the initial k- shows the same pattern of dissimilating to h before a following glottal stop as an initial glottal stop. With a unique example, it is impossible to determine if this is a shared pattern or chance. Note §5.2.3.3.
- 5.5.4 PKxMt. \*-k- > Kx. -g- | Mt. -g-
- .1 Kx. *isung* ‘oil’. Mt. *isgnu* ‘oil’. [DEDR 422]
- .2 Kx. *as<sup>ə</sup>ga* ‘to adhere, stick, hold to or together, attach oneself to, fit’. Mt. *asge* ‘to stick’; *asgre* ‘to adhere’; *asge* ‘to paste on, make of two things one’. [DEDR 0043, EKHP 453] Note §5.3.8.1.
- .3 Kx. *xos<sup>ə</sup>ga* ‘leg, thigh’. Mt. *qosge* ‘thigh’. [DEDR 1840, EKHP 347]

- .4 Kx. nis<sup>o</sup>ga ‘to besmear with any adhesive substance, overlay with a coating of earth carefully smoothed down, stop a hole with earth’. Mt. nisse ‘to smooth’; nisye ‘to shampoo’.
- .5 Kx. nul<sup>o</sup>g<sup>o</sup>r<sup>o</sup>a ‘to insert a thing into another by a sliding push; thrust or slip into or under lengthwise’. Mt. lulgre ‘to hide oneself’; lulqe ‘to thrust in’. [DEDR 3714, EKHP 242] See also §5.4.6.19.
- .6 Kx. mes<sup>o</sup>ga ‘roof, esp. thatched roof’. Mt. mesge ‘thatched roof’. Cf. Br. bēnifing ‘to thatch’. [DEDR 5532, EKHP 308]
- 5.5.5 PKxMt. \*+<sup>o</sup>ka# > Kx. -<sup>o</sup>ga | Mt. -ke
- .1 Kx. ut<sup>o</sup>ga (ut<sup>o</sup>g<sup>o</sup>ya) ‘to sting, (water) be piercingly cold, rouse against a third person’. Mt. u<sup>o</sup>ke ‘to bore a hole’. [DEDR 742]
- .2 Kx. kot<sup>o</sup>ga ‘to peck at’; kotga ‘a hunting bludgeon’. Mt. ko<sup>o</sup>ke ‘to peck or strike with the beak, sear with a hot iron’. [DEDR 2091, EKHP 408]
- .3 Kx. cot<sup>o</sup>xa (cutxyas) ‘to melt, pass from a solid to a liquid or flowing state’. Mt. co<sup>o</sup>ke ‘to be melted; co<sup>o</sup>kre ‘to melt (*tr.*)’. [DEDR 2842]
- 5.5.6 Problem sets
- .1 Kx. xajj<sup>o</sup>a ‘to cleanse the head of, with the soapy clay called xajma xajj<sup>o</sup>’. Mt. kaje ‘to wash clothes’. [DEDR 1369] See §5.4.3.5 Kx. xajj<sup>o</sup> ‘earth’. Malto keeps the original form with velar. Kurux form influenced by xajj<sup>o</sup>.
- .2 Kx. cāx<sup>o</sup>a ‘to sow, scatter seed’. Mt. cāge ‘to divide, scatter, sow’. [DEDR 2431] No explanation.
- .3 Kx. poc<sup>o</sup>go ‘worm, maggot, grub’. Mt. posgo ‘weevil’; pocru ‘worm, caterpillar’. Br. pū, pul- ‘worm, maggot, caterpillar’. [DEDR 4312, EKHP 344] In spite of similarities, lead Kurux and Malto forms are not directly cognate. Uvular in posgo is probably derivative.
- .4 Kx. pokk<sup>h</sup>a (pukk<sup>h</sup>ya) ‘to get blistered, swell’. Mt. poka ‘blister, blain’; poglo in mug-poglo ‘wart’. No explanation for Mt. poka with velar; forms with uvulars still not directly cognate. [DEDR 4455]
- .5 Kx. bix<sup>o</sup>r<sup>o</sup>a ‘to take one’s aim for, etc.’ Mt. be<sup>o</sup>gre ‘to lift the arm preparatory to a blow’. [DEDR 5450] It is not certain that the uvulars are, in fact, directly cognate. In Malto, -gr regularly forms the intransitive.

5.6 Lexical stems in Dravidian languages have a very restricted phonological shape. A small number are monosyllabic with a general form of (C)V(C(C)). Most are disyllabic with a general form of (C)VCV(C(C)). The core root commonly is monosyllabic, but may be extended with a second vowel. Thus, it has the general form of (C)V(C(V)) to which a derivative morpheme of the general form -V(C(C)) is commonly added to produce the stem. Stems may be further derived by adding more morphemes of the shape -V(C(C)). Stems are weakly stressed, usually on the first syllable, but sometimes on the second. The net impact of this patterning is that the root-initial consonant occurs in a very limited environment. It must be single; no initial consonant clusters are allowed. It is followed by a single vowel (long or short) normally stressed. The vowel is commonly (always if the vowel is short) followed by a single consonant or restricted consonant cluster.

The complete list of possible environments for a root-initial \*q consists of its preceding the five Dravidian vowels (a, i, u, e, o), which in turn are optionally followed by a consonant that is commonly single. The lists in §§5.2–5.3 explicitly address all the vowel environments in both PDr and PKxMt and give all the known following consonants. The vowels have significant impact, while the influence of the following consonant seems limited to uvular/velar patterning. Remember that Malto does not allow velars and uvulars to cooccur in the same syllable without a morpheme boundary. There are no other possible conditions. The list is long because it is functionally complete.

The data make it obvious that Proto-Kurux-Malto reconstructs a full uvular series which contrasts with a velar series in all positions and in all environments, with some exceptions due to consonant harmony and the shift in PKxMt of high vowels to mid vowels after an initial uvular. More significantly, there is a full contrast of velars and uvulars in all Proto-Dravidian environments. This observation has a very significant impact on our understanding of Proto-Dravidian phonology and indeed of Proto-Dravidian itself.

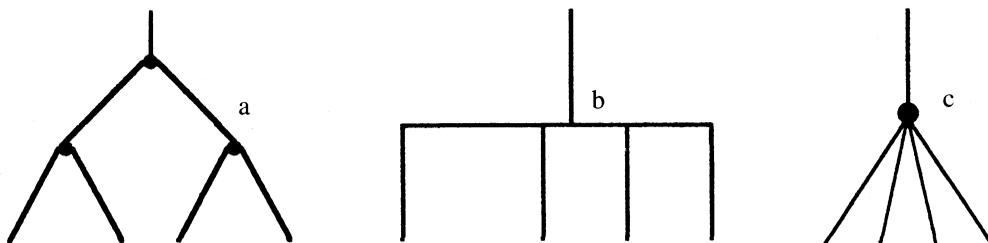


FIG. 1. (a) "Tree," (b) "Comb," (c) "Brush."

## VI. THE COMPARATIVE METHOD AND COMPARATIVE DRAVIDIAN

6.1 The original concept behind the Comparative Method was that languages are related in a tree-like structure (*viz.*, Stammbaum). The idea is immediately appealing and is entrenched in such essential notions as shared innovation (languages which share an immediate node containing the innovation) and shared retentions (languages which share some higher node). However, there is a subtle break in the logic between this concept and the formal methodology of the Comparative Method.

6.2 As a methodology, the Comparative Method examines only a few factors at a time, reconstructing all daughter languages to a single flat level; see Antilla (1972: 302). Rather than a bifurcating structure with nodes, a "tree" (fig. 1a), it depicts a "comb" with a handle (fig. 1b) or a "brush" (fig. 1c); these last two are formally equivalent. Another way of thinking about this is that the Comparative Method draws a line around a group of elements which share the reconstruction, *i.e.*, the cognates are elements within a Venn Diagram. However, it does not indicate the time depth or ordering of the defining condition or how this condition (set) relates to any other. When the defining condition is an innovation, it becomes possible to take the output from one comparison as the input to another and hence place the first before the second. Repeated application of this can layer the results into a set of tiers. However, the Comparative Method does not identify innovations as such. Their identification is external to the method and depends on a model of the changes which, in turn, depends on reconstructions. This rapidly leads to circular reasoning. The solution that explains the most reconstructions with the simplest set of changes is normally considered to be correct.

This time-tested comparative technique gives excellent results to questions of inclusion or exclusion (which languages are Indo-European?). However, unless the various factors so selected concur in their results, the technique tends to generate multiple reasonable, but inconsistent, sets of results. The Comparative Method readily groups languages into families and equally readily indicates which subfamilies can be grouped into such superfamilies as Indo-European. However, it is less good at giving clean answers as to how groups within a family are related (what is the exact relationship between the subfamilies of Indo-European?). The art of comparative linguistics is in building a tree structure with a technique that does not produce trees. The disconnect between the model and the method also results in a split in presentation, *i.e.*, whether to emphasize the technique (producing "combs") or the more abstract model (producing "trees").

6.3 P. S. Subrahmanyam took Emeneau's work on North Dravidian (1962), his own work on Central Dravidian (1969), and both his (1968) and Emeneau's work (1967) on South Dravidian to create an explicit statement of Proto-Dravidian subgrouping, delineating the changes step by step (1971: 505–31). In doing this, he produced an initial "comb"

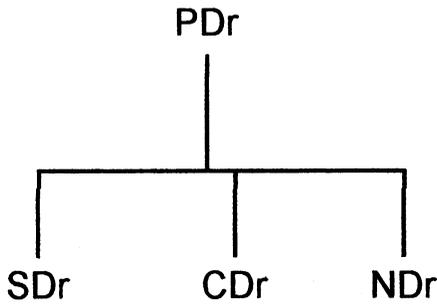
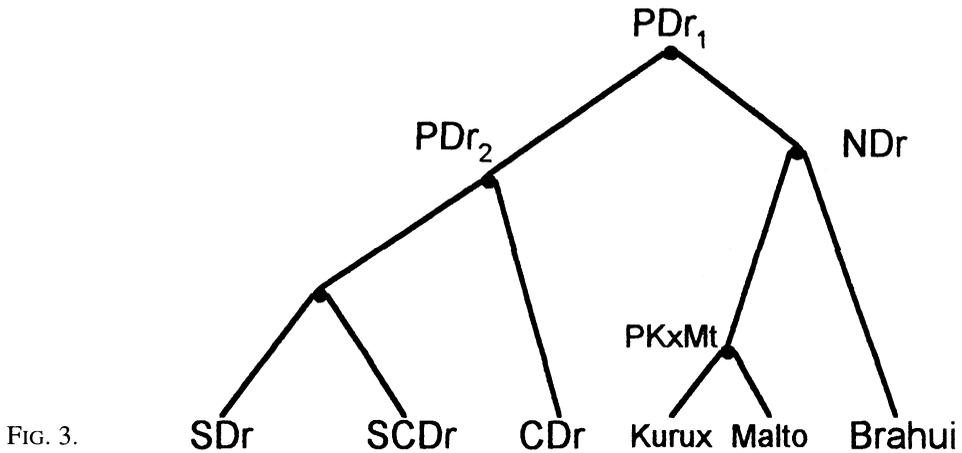


FIG. 2.

consisting of three coequal daughters for PDr; see fig. 2. Krishnamurti (1969) also described a tripartite basic division of PDr, although he used a bifurcating structure elsewhere. Today most Dravidianists would consider Subrahmanyam’s Central Dravidian to consist of two groups that share no particular genetic relationship. However, his main point of coequal branches is methodologically correct for the Comparative Method *per se*.

Nevertheless, such coequal branches have come to be considered an artifact of the methodology, and it is believed that “trees,” bifurcating nodes with explicitly labeled innovations and implicit retentions, are a better description of how languages change. This is a return to the original comparative concept, but with greater formality. Concurrently, other fields which use tree structures, such as phylogeny and decision science, have formalized the rules and methods into the field of cladistics. From this field, the basic structures of rule-based nodes with binary branching have been absorbed into diachronic linguistics. While the requirement for binary branching at first seems arbitrary for linguistics, it has a firm foundation. There are real cases of a concurrent split into more than two groups as the underlying cause for language change, such as when a central dialect is removed, leaving isolated groups at the fringe. However, diachronic linguistics comes into play only as each fringe group innovates compared to the previously shared set of attributes. The branching is always binary because each group innovates compared to its own previous status. The result for comparative Dravidian is a shift to the tree structure given in Krishnamurti (1978: 2) and repeated in Steever (1993: 6); see fig. 3. This is close to a current consensus among Dravidianists.

6.4 Due to the shift in modeling techniques, the single PDr node in the earlier approach (fig. 2), now becomes two nodes, here labeled PDr<sub>2</sub> and PDr<sub>1</sub>. Since in the comb model an attribute shared by any two daughter languages could properly be reconstructed to the mother language, the more numerous and better described South and Central groups tended to predominate. Hence, PDr<sub>2</sub> labels the node where the term “Proto-Dravidian” is most commonly applied. Under it are the major, historical Dravidian languages—Tamil, Kannada, Telugu, and Malayalam. However, the immediate subgrouping becomes somewhat more divergent. Using Steever’s (1993: 4) names, three distinct and coherent groups are universally recognized: 1) South: Tamil, Malayalam, Irula, Kodagu, Toda, Kota, Kannada, and Tulu; 2) South-Central: Telugu, Gondi, Konda, Kui, Kuvi, Pengo, and Manda; 3) Central: Kolami, Naiki, Parji, Ollari, and Gadaba. There is a remaining isolate, Koraga. Disagreements exist in how the three groups are related to each other (Subrahmanyam’s Central Dravidian consists of groups 2 and 3).<sup>12</sup> Fortunately for this paper, all interpretations of these three branches come together in PDr<sub>2</sub> and any variations in its substructure have no relevance to the arguments here. Only Koraga remains ambiguous vis à vis PDr<sub>2</sub>, while Kurux, Malto, and Brahui are external to it.



6.5 For  $PDr_2$ , a detailed, rather idiosyncratic, phonological structure can clearly be reconstructed, with six contrasting obstruent positions (velar, alveopalatal, retroflex, alveolar, dental, and labial). There is no sibilant, no contrastive voicing or initial consonant clusters, and there are five vowels (a, i, e, u, o), long and short. This is the phonology described as Proto-Dravidian in the DEDR. It is essentially identical to Old (and Literary) Tamil and corroborated in many details by Konda, which is not closely related to Tamil. All other languages under the node can readily be reconciled to this phonological pattern, as can Koraga.

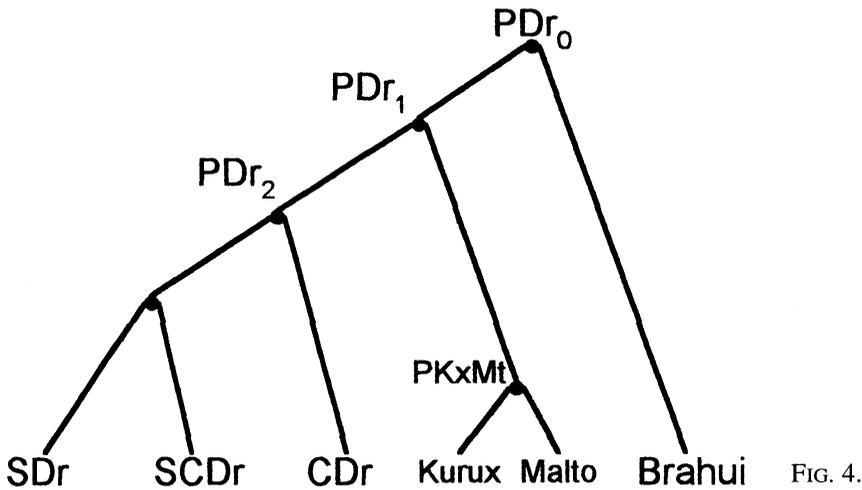
6.6 As a result of this analysis, a few morphological details can firmly be placed in one  $PDr$  group or the other. Among the forms for the past tense, the languages under  $PDr_2$  commonly attest a dental t while the languages above it (including Koraga in this case) do not attest the dental, but, rather, attest a velar k, which is absent in the  $PDr_2$  languages.  $PDr_1$  clearly has the specific detailed structure of the personal pronouns, which is shared by  $PDr_2$  and Kurux-Malto. Brahui has a different, but partially related, structure.

6.7 Steever (1993: 6) casually presents another option, given in fig. 4. Here, Brahui is separated from Kurux-Malto and is presented as first branch off of yet another node, here labeled  $PDr_0$ . Thus he returns Brahui to the position originally presented in the *Linguistic Survey of India*. The twin goals of this paper are to demonstrate that fig. 4 is the correct configuration as opposed to fig. 3 and to address the nature of the phonological structure of  $PDr_1$  as opposed to  $PDr_2$ .

## VII. CONCLUSION

7.1 In section three, it was shown that the North Dravidian Hypothesis, that Kurux-Malto and Brahui share an immediate node, is not tenable. Everyone agrees that Brahui is genetically related to Dravidian and that it has no special relationship with any other group of Dravidian languages; see §§3.6–3.7. Hence, it must be the first branch off, as Steever suggests. Proto-Kurux-Malto directly joins the  $PDr_1$  node, and a new node  $PDr_0$  (whose de-

12. My current research on verb morphology suggests that groups 1 and 3 are closely related. The grouping at this level depends on what is considered inherited and what is considered an innovation. Determinations as to what is genetic and what is areal also complicate the issue.



tails are beyond the scope of this paper) is generated to capture the relationship between Brahui and the rest of Dravidian.

7.2 The Phonology of PDr<sub>1</sub>

7.2.1 The PDr<sub>1</sub> node branches into two nodes, PDr<sub>2</sub> and PKxMt, both of which have well defined, but differing, phonologies. In the obstruents, PDr<sub>2</sub> has six contrasting stop positions: velar, (alveo)palatal, retroflex, alveolar, dental, and labial. Retroflexes and alveolars pattern similarly and neither occurs initially. There are no final obstruents. There are five vowels, long and short, and no diphthongs.

Proto-Kurux-Malto also has six obstruent positions, but these are uvular, velar, (alveo)palatal, retroflex, dental, and labial. Alveolars exist as allophones of retroflexes. Other details are essentially the same although length contrast in vowels is restricted. The crux of the problem is: where did PKxMt get the contrastive uvulars?

7.2.2 When the data for initial back obstruents in §5 are summarized, three distinct patterns emerge; these occur in all environments. A fourth pattern for PDr<sub>1</sub> \*c has been added for contrast with Pattern 3.

Pattern	PDr <sub>2</sub>	PKxMt	PDr <sub>1</sub>	
1)	*k	*q	*q	§§5.2.4, 5.4
2)	*k	*k	*k	§5.3
3)	*c	*k	*ĕ	§§5.2.1–3
4)	*c	*c	*c	

The alveopalatal \*c [tɕ] (Pattern 4) clearly reconstructs for all and is not an issue, as does the velar \*k (Pattern 2). However, the uvular \*q (Pattern 1) represents a major shift in our understanding of Proto-Dravidian. The North Dravidian Hypothesis tried to explain PKxMt \*q as a shift from PDr \*k under certain conditions. The extensive data in §5 demonstrate that these conditions do not hold and offers numerous valid counterexamples. When no conditioning factor can be found, the Comparative Method requires that the attribute must be reconstructed to the mother language. This would indicate that PDr<sub>1</sub> had contrastive uvulars, with the immediate corollary that PDr<sub>2</sub> lost the contrast between uvulars and velars, both appearing as velars. The palatal \*ĕ (Pattern 3) handles the situation discussed in §2.4 and §5.2 where PDr<sub>2</sub> has \*c, but PKxMt has \*k. A handful of cases exists today, but

since the identification depends solely on the phoneme's survival in Kurux or Malto, the original number may have been larger.

7.3 Uvulars can be reconstructed to PDr<sub>1</sub> solely on the evidence of PKxMt. After this point has been made, the phonology of Brahui becomes relevant. Brahui has regular correspondences with PDr<sub>1</sub> uvulars and velars. PDr<sub>1</sub> \*q corresponds to Brahui x except before i/ī where k is found, and PDr<sub>1</sub> \*k corresponds with Brahui k. Brahui and PKxMt do not share any innovations. However, each of them has its own regular set of correspondences for uvulars to PDr<sub>1</sub>. Brahui's separate pattern of correspondences with PDr<sub>1</sub> uvulars strongly and independently corroborates the conclusion that PDr<sub>1</sub> had contrasting uvulars and velars and that PDr<sub>1</sub> is distinct from PDr<sub>2</sub>.

7.4 It now becomes clear that most of the points made by Emeneau in §2.5 are not shared innovations establishing a North Dravidian node, but rather the retentions shared by Brahui and Proto-Kurux-Malto after the changes between PDr<sub>1</sub> and PDr<sub>2</sub> took place. The random, slightly out-of-focus nature of the evidence is consistent with shared retentions, but not of shared innovations.

7.5 It is worthwhile reviewing one by one the points made by Emeneau (1962); see §2.5. The three primary arguments are phonological, which are secondarily supported by three morphological arguments. Major changes in three lexical items are additional evidence and phonological changes in three additional items are mentioned.

7.5.1 The primary arguments are phonological, consisting of three distinct changes: 1) Initial PDr \*k > \*x except before i/ī, 2) Initial PDr \*v > \*b, and 3) Initial PDr \*c > \*k before u/ū and e/ē.

7.5.1.1 The data which Emeneau tried to explain by a PDr \*k > x shift are the result of PDr<sub>1</sub> \*q falling together with PDr<sub>1</sub> \*k appearing as PDr<sub>2</sub> \*k. PKxMt retains the q : k contrast from PDr<sub>1</sub>, while Brahui has a regular set of correspondences as described above (§7.3). These are handled by Patterns 1 and 2 above. Brahui and Kurux-Malto independently attest contrastive uvulars in PDr<sub>1</sub>.

7.5.1.2 The change of initial \*v- to b- represents, as Emeneau surmised, two independent shifts. PDr<sub>1</sub> had \*v- (or \*w-) and PDr<sub>2</sub> had \*v-. PKxMt reconstructs \*w. Kannada later made the same shift for the third time.

7.5.1.3 The set of data (see §2.4) that Emeneau tried to handle as a PDr \*c > k shift is accounted for by Pattern 3 above. PDr<sub>1</sub> had \*k̄, which was probably [kʷ]. This simplified to \*k in PKxMt and to \*c in PDr<sub>2</sub>. In addition to the sets in §2.4, the addition of this phoneme to PDr<sub>1</sub> allows some obvious pairs to be combined; PDr<sub>2</sub> \*cāku 'to go, proceed, happen' [DEDR 2430] can now join \*kā- 'to go, pass' [DEDR 1419] as PDr<sub>1</sub> \*k̄ā. It appears in Brahui as kā-, the irregular Present Base of hining 'to go, depart'.

7.5.2 With regard to morphology, Emeneau made three points, though he considered them to be secondary evidence for North Dravidian:

7.5.2.1 (Pasts in -k-) PKxMt and Brahui agree in having a past tense morpheme in -k-. This is the norm for Kurux and Malto and also occurs in a small set of irregular verbs in Brahui. Both lack any past tense marker in a dental with the exception of the Kumarbhadg dialect of Malto, which has replaced all past velars with dentals. It is clear that PDr<sub>1</sub> had velar pasts and that PDr<sub>2</sub> innovated a dental past, or at least expanded the usage of a dental morpheme for the past tense.

The Dravidian isolate Koraga has PDr<sub>2</sub>-based phonology, but has only the past in -k-. A two-step innovation may be involved. This would have PDr<sub>2</sub> losing its uvulars (including Koraga) followed by a second step (excluding Koraga) which innovated dental pasts. Alternatively, a more complex development may have taken place. At present, the data remain too scanty to provide a clear solution. Koraga remains an enigma; note that it is omitted from most of the family tree diagrams.

7.5.2.2 (Future/subjunctive in -ō-) PKxMt and Brahui share a future/subjunctive marker in -ō- that has no direct cognate in other Dravidian languages although it may be related to the nonpast form in \*-um. It almost certainly needs to be reconstructed to PDr<sub>1</sub>.

7.5.2.3 (Pasts in -c(c)-) Both Kurux-Malto and Brahui have a past tense morpheme in -c- as does the

South-Central group of languages (Telugu-Kui). It can clearly be reconstructed for PDr<sub>1</sub>, but it is not an innovation.

7.5.3 Three words show significant shifts in form or meaning while three others have minor shifts in form. Numbers this small are insignificant, indicating essentially random events.

7.5.3.1 (\*yā/e ‘who’ [DEDR 5151]). The existence of variants with an initial n- in Brahui and Kurux-Malto are probably independent developments. The form in Brahui is dē since \*n- becomes d- in this environment. The forms in Kurux and Malto may be due to Munda influence.

7.5.3.2 (\*man- ‘to be’ [DEDR 4778]). The PDr<sub>1</sub> meaning is ‘to be, become’ which is retained in Kurux-Malto and is attested in Brahui. PDr<sub>2</sub> shifts the meaning slightly becoming ‘to be, exist, endure’.

7.5.3.3 \*tung- ‘to hang, swing; sleep’ [DEDR 3376a] has the additional meaning of ‘to dream’ in PDr<sub>1</sub>. Brahui has ‘sleep, dream’ while Kurux-Malto has only ‘dream’. This is probably a chance preservation of specific meanings in a term that originally had a broader range of meanings.

7.5.3.4 The three words that had morphological developments, i.e., changes in their derivative augment, are all innovations in PDr<sub>2</sub> while PDr<sub>1</sub> Brahui, and Kurux-Malto retain the original form. The changes are purely random and the numbers insignificant.

7.6 The data on which the North Dravidian Hypothesis rests are real enough, but do not provide evidence for a shared innovation. Rather, they offer evidence for the changes between PDr<sub>1</sub> and PDr<sub>2</sub>. These only look like shared innovations when viewed from the perspective of PDr<sub>2</sub>. These data and the details of Proto-Kurux-Malto phonology make it clear that PDr<sub>1</sub> had contrastive uvulars and velars, while PDr<sub>2</sub> had only velars. In diachronic linguistics, such shared forms are comparatively easy to come by. The problem is to determine whether they are the results of innovations or are retentions. The critical information from Malto was missing when the hypothesis was proposed. Without it, the North Dravidian Hypothesis was plausible; with the additional data, it becomes impossible.

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