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On the origins of the three-way phonological distinction in Dravidian coronal consonants

The article discusses the possible ways in which Proto-Dravidian might have gained its unusual three-way phonological distinction in the coronal series of consonants (dental vs. alveolar vs. retroflex stops and resonants). It is suggested that the development may have been triggered through contact with a «Para-Australian» substrate in South Asia, but the exact reasons should be sought through the external genetic connections of Dravidian with other Nostratic languages. It is then shown that such an opposition in the resonants subsystem is best explained as reflecting peculiarities of Proto-Nostratic phonology (and should, therefore, be considered archaic), whereas in the stop series it is probably secondary, having developed from various situations of positional conditioning of reflexes.

General remarks

The Proto-Dravidian system of coronal consonants[1] is generally reconstructed in the following way (see, e. g., [Krishnamurti 2003: 91]):

	Dental	*Alveolar*	*Retroflex*
Stops	t	t̲	ṭ
Nasals	n		ṇ
Laterals		l	ḷ
Flap/Approximant		r	ṛ

[1] For the sake of convenience, I do not include palatal affricates and sibilants under the heading of 'coronal', even though from a purely phonetic point of view they certainly belong under it. The term will be used here to denote exclusively the non-affricate series in Dravidian languages.

The following distributional limitations apply:

a) in the initial position, only *t-*, *n-*, *l-*, and *r-* are permitted;

b) in the intervocalic position, most of the consonants can occur as either simple (*-*t-*, *-*ṯ-*, etc.) or geminated (*-*tt-*, *-*ṯṯ-*, etc.) variants, the distinction being of a phonological nature. The only exception is the flap subsystem, in which consonants can never be doubled (so the sequences *-*rr-* and *-*ẓẓ-* are prohibited).

In some of my previous works on the subject [Starostin 1997; Starostin 1998; Starostin 2000] I have argued for a somewhat different system for Proto-Dravidian, one that would formally account for a larger proportion of etymological material as presented in [DEDR]. The principal changes were as follows:

a) in the initial position, a voiced vs. voiceless opposition has to be recognized for Proto-Dravidian stops, meaning that an initial **d-* is added to the inventory of coronals[2];

b) in the intervocalic position, the 'simple vs. geminated' opposition can be reinterpreted as a 'voiced vs. voiceless' opposition (the way it functions in Kannada, Telugu, and, in fact, the majority of Dravidian languages); geminated articulation can be suggested for 'voiceless' consonants as merely a secondary (allophonic) feature after short vowels;

[2] Despite the ongoing «ban» on initial voiced stops in Proto-Dravidian, originally imposed by T. Burrow and since then upheld by the majority of Dravidologists, the problem still remains actual even for those who uphold the traditional model, e. g., Bh. Krishnamurti, who, in his recent volume on Dravidian linguistics, has deemed it necessary to offer a «quantitative study» on the issue, the final outcome of which, in his own words, «clearly proves that Proto-Dravidian had primarily only voiceless stops» [Krishnamurti 2003: 132–136].

In reality, though, this application of statistics only helps to formalize one's description of an already well-known fact — namely, that the ratio of initial voiced to voiceless stops in Dravidian languages is extremely low. But historical reconstruction and probabilistic evaluation are two different things; there is really not much more ground to deny the existence of initial voiced stops on the Proto-Dravidian level than there is to deny phonemic status to initial voiced stops in any of the living Dravidian languages, simply because they are so scarce in comparison to initial voiceless ones.

c) a careful analysis of the reflexes of Proto-Dravidian *$\underline{t}$ in Central Dravidian languages shows that there is sufficient evidence for reconstructing not one, but two separate phonemes in its place — a stop (*$\underline{t}$) and a resonant (*$\underline{r}$). This means that Proto-Dravidian had not two, but three contrasting flap/approximants in the word-medial position: dental *-*r*-, alveolar *-$\underline{r}$-, and retroflex *-$\underline{z}$-;

d) there is some very oblique evidence that the remaining gaps in the system (alveolar nasal *-$\underline{n}$- and alveolar lateral *-$\underline{l}$-) may also be filled by interpreting certain correspondence series as representing these particular consonants. Unlike the evidence for a separate *-$\underline{r}$-, however, this kind of evidence is very scant and inconclusive.

The modified and reinterpreted scheme, therefore, looks as follows:

	Dental		*Alveolar*	*Retroflex*
	Initial	*Medial*	*Medial*	*Medial*
Stops	d- t-	-d- -t-	-$\underline{d}$- -$\underline{t}$-	-$\underline{d}$- -$\underline{t}$-
Nasals	n-	-n-	-$\underline{n}$- (?)	-$\underline{n}$-
Laterals		-l-	-$\underline{l}$- (?)	-$\underline{l}$-
Flap/Approximant		-r-	-$\underline{r}$-	-$\underline{z}$-

We should also remark that, regardless of whether the intervocalic opposition is to be interpreted as «voiced vs. voiceless» or «simple vs. geminated», there are reasons to suspect that at the early stage of Proto-Dravidian it did not have a phonological nature. Primary evidence for that comes from the behavior of Dravidian verbal stems, where even in modern languages these variants frequently remain in complementary distribution, namely:

a) before the stem-forming vowels of the second syllable we always have the voiced (simple) variant, e. g. Tamil *iṭai* ‘to make room’ — Telugu *eḍayu* ‘to be separated’ [DEDR 446]; Tamil *mata* ‘to be furious’ — Tulu *mada-kuni* ‘to move swiftly’ [DEDR 4687];

b) in monosyllabic stems, joined directly with the grammatical suffixes or, if the latter are lacking, with an epenthetic vowel, we always have the voiceless (geminated) variant, e. g. Malayalam *katt-uka* ‘to kindle, burn’ — Kannada *katt-u* ‘to begin to burn’ [DEDR 1207].

This almost completely regular phenomenon, sometimes referred to as «Emeneau’s rule» (see [Emeneau 1963: 65–66]), is closely tied to an-

other important morphophonemic alternation in Dravidian verbal stems, namely, shortening of original long vowels in bisyllabic formations, which is correspondingly known as «Krishnamurti's rule» [Krishnamurti 1955].

Given these very peculiar features of bisyllabic verbal stems, the most plausible explanation (originally offered in [Starostin 2000]) would be to tentatively trace the origins of both these rules to prosodic factors, e. g. the presence in Proto-Dravidian (or «Pre-Proto-Dravidian») of a strong dynamic accent on the second syllable of such stems. This would explain, at the same time, both the shortening of the long vowel (length reduction due to lack of stress) and the voicening of the former voiceless consonant (a phonetic process akin to the one described by Werner's law in Germanic).

This, however, implies that the introduction of a new, prosodic factor (phonological prosody is not normally reconstructed for Proto-Dravidian) may account for other cases of voiced / voiceless opposition in the ancestor language, not necessarily limited to verbal stems. For instance, the difference between Tamil *paṭai*, Kannada *paḍe* 'multitude; army' and Tamil *paṭṭai*, Kannada *paṭṭe* 'bark of tree' may be described as one between Early PD **paṭái* > Late PD **paḍai*, on one hand, and Early PD **páṭai* > Late PD **paṭai* (phonetically perhaps /*paṭṭai*/), on the other.

While there may be additional issues here that require more detailed explanations (such as the opposition of voiced and voiceless consonants after long vowels, or their behaviour inside nasal clusters), the main point is that there are no significant reasons to think that these oppositions may in some way correlate to oppositions in the three-way system of stops originally proposed for Nostratic by V. M. Illich-Svitych (and, in fact, in his original comparisons Illich-Svitych himself did not try to establish any such correlations, see [Illich-Svitych 1971: 147])[3].

[3] The only instance in which Dravidian medial voiced consonants *may* have something to do with old distinctions in Nostratic is that of the so-called «voiced geminates», occasionally found in such examples as Telugu *eḍḍaya* 'ignorant man, fool', Kannada *eḍḍu* 'stupidity' [DEDR 792]; Kannada, Koḍagu, Tulu *udda* 'height, length' [DEDR 621] and others. Some of these cases are secondary, having arisen from contraction of clusters, but for others, including the two listed above, it is impossible to demonstrate such a contraction. Statistically the frequency of these «voiced geminates» correlates rather well with the frequency of initial voiced con-

A much more serious problem for Dravidian as a branch of Nostratic is the three-way opposition in coronal stops and resonants, reconstructed for Proto-Dravidian in both the traditional model and my revised one. Not a single other subgroup of Nostratic really knows anything like it, and yet, at the same time, it does not seem possible to explain it away on inner Dravidian grounds. It may be speculated that the contrast arose in Early Proto-Dravidian secondarily through the influence of an unknown substratum[4]; yet items containing coronal consonants from all three of the series are frequently found to have Nostratic parallels, meaning that even if this typological feature as such had been introduced into Dravidian «from the outside», we still have the responsibility of finding out the general phonetic rules of its being introduced into the native lexicon of Dravidian-speaking people.

Notes on distribution

Before trying to clarify the origins of the «coronal split» in Dravidian based on correspondences in other Nostratic languages, a few remarks on the distribution of coronal consonants within Dravidian itself are in order. Such remarks, although they cannot serve as substantial arguments on their own, may at least suggest where we should first look for correspondences outside Dravidian.

Limiting ourselves to the word-medial position (since only dentals are permitted in the syllable-initial one), it is immediately clear that resonants and stops have somewhat different distribution properties.

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sonants, which is also an argument in favor of their representing the «true and original» voiced consonants of Proto-Dravidian.

[4] It is interesting to note that typologically, the Dravidian system of coronal consonants finds its closest parallels in Australian languages [Dixon 2002: 63–64]. While any direct contact between speakers of Proto-Dravidian and the ancestors of modern Australian languages is, of course, out of the question, it is nevertheless a possibility that the former may have, at some time, penetrated territories originally populated by speakers of languages belonging to the same stock as Australian. For a list of possible «Australian» or «Para-Australian» elements in Dravidian, cf. [Blažek 2006].

Here is the relative frequency of each phoneme in the etymological database of Proto-Dravidian compiled by me on the basis of [DEDR] and so far containing 2246 etyma that can be with relative degrees of certainty reconstructed for Proto-Dravidian or at intermediate levels of Proto-Dravidian[5]:

Dental	Freq.	Retroflex	Freq.	Alveolar	Freq.
-t- / -d-	128	-ṭ- / -ḍ-	284	-t̲- / -d̲-	123 ~ 86[6]
-l(l)-	256	-ḷ(ḷ)-	169		
-r-	322	-ẓ-	121	-r̲-	103 ~ 140
-n(n)-	83	-ṇ(ṇ)-	79		

It can be clearly observed that the most frequent, and thus, least marked, of all coronal series of stops is the retroflex series — in very sharp contrast to, for instance, the distribution in the neighbouring Indo-Aryan, where retroflex stops had been introduced only relatively recently and are nowhere near as prominent as simple dental ones.

On the other hand, when it comes to resonants, the distributional properties are reversed: nasal resonants occur with comparatively equal frequencies, whereas in the case of flaps/approximants and laterals the balance is clearly tilted in favor of the dental articulation.

One thing that such a distribution would immediately suggest is that the genesis of the three-way (or, in the case of most resonants, two-way) opposition within the subsystem of stops must have been due to factors at least partially different from those governing the genesis of the same opposition within the subsystem of resonants.

For stops, it is reasonable to expect that the «default» correlation to PD initial dentals in the medial position would be the retroflex articulation.

[5] Clusters with nasal consonants (such as *-*nt*-, *-*nd*-, *-*ṇṭ*-, etc.) are left out of the picture, since they form an additional subsystem within Dravidian; the distributional properties of coronal consonants within such clusters seem, however, not that much different from the ones listed in the table.

[6] The variation is due to the fact that in many cases we lack diagnostic forms from Central Dravidian languages that would help to reconstruct either *-*d̲*- or *-*r̲*-.

As for medial dentals, their emergence (or, rather, preservation, since there is little reason to suspect that Proto-Nostratic contrasted dental articulation with retroflex) must have been governed by certain peculiarities of context that are, for the most part, undeterminable without bringing in elements of external comparison.

In the case of resonants, on the other hand, it is the retroflex varieties that we would expect to develop from something more highly marked in the ancestral language — such as relatively rare phonemes or phonetic variants in specified vocalic and/or consonantal contexts.

It is only the alveolar phonemes that seem to display comparatively the same distributional properties regardless of whether they fall into the stop or the resonant classes; in both cases they are the least frequently represented variety, and their emergence as separate phonemes, therefore, should be attributed to specific reflexation in particularly selective contexts in Proto-Nostratic.

Previous treatments

The problem of Dravidian coronal consonants and their genesis has not escaped the attention of the principal authors and followers of the Nostratic theory. Yet the solutions offered so far have either been incomplete, inconclusive, or not confirmed by substantial amounts of evidence.

In his original list of correspondences between Nostratic languages [Illich-Svitych 1967: 322–323] V. M. Illich-Svitych made no attempts at establishing any distribution between Dravidian coronal consonants, either stops or resonants. However, already in the more expanded and detailed table of correspondences later published in the first volume of Illich-Svitych's Nostratic dictionary [Illich-Svitych 1971: 147–150] some attempts at explaining the origins of Dravidian diversity are made, most notably in the subsystem of resonants:

PD *-*l*- < PN *-*l*- (= Altaic *-*l*-, Uralic *-*l*-);
PD *-*r*-, *-*ṛ*- < PN *-*r*- (= Altaic *-*r*-, Uralic *-*r*-);
PD *-*n*- < PN *-*n*- (= Altaic *-*n*-, Uralic *-*n*-);

but:

PD *-ḷ- < PN *-ɬ- (= Altaic *-l-, Uralic *-ɬ-) or < PN *-Ĺ- (= Altaic *-Ĺ-, Uralic *-Ĺ-);

PD *-ẓ- < PN *-ŕ- (= Altaic *-ŕ-, Uralic *-r-);

PD *-ṇ- < PN *-ń- (= Altaic *-n-, Uralic *-ṇ-).

The same table, as well as a more detailed description in V. A. Dybo's introduction to the dictionary [Dybo 1971: iii–iv], sets up the following distribution between PD *-r- and *-r̲-[7]: PN *-r- > PD *-r̲- before front vowels (e. g. PD *ēr̲- 'male' = Altaic *ērä* id., etc.), but > PD *-r- before mid and back vowels (e. g. PD **kar(a)* 'thorn, spike' = Uralic *kara* id., etc.).

At the same time, no distribution whatsoever is offered for the bifurcation of PN dental stops: in every version of V. M. Illich-Svitych's phonetic tables their intervocal reflexes are always listed as PD *-t(t)-/*-ṭ(ṭ)-. Only once, in [Illich-Svitych 1968: 355], does the author briefly speculate on the possibility that «it is possible that the appearance of the independent retroflex phoneme -ṭ(ṭ)- was conditioned by certain vowels in the second syllable that became lost afterwards» [*translation from Russian is mine* — G. S.]. This hypothesis, however, unlike the one described above, is not backed up by any examples.

A very similar model of development, also trying to explain Dravidian resonant bifurcation as reflecting elements of the original Nostratic phonology, yet leaving the stop bifurcation without any explanation, is espoused by A. Dolgopolsky, e. g. in the tables of correspondences in [Dolgopolsky 1998: 102–105], as well as in his so far unpublished major etymological dictionary of Nostratic.

In his «competing» version of Proto-Nostratic phonology, A. Bomhard accepts the idea that Dravidian retroflex resonants are generally to be correlated with palatal resonants in Uralic and Altaic, although he does not explicitly agree with Illich-Svitych & Dybo's explanation for the splitting of PN *-r- into PD *-r- and *-r̲- [Bomhard 2003: 207]. On the other hand, he does attempt to go one step further in the treatment of Dravidian retroflex

[7] It should be kept in mind that none of the authors make any kind of distinction between the PD alveolar resonant *r̲ and alveolar stop *d̲, treating all the occurrences of PD alveolars according to the rules they set up for Nostratic resonants and their reflexation in daughter languages.

vs. dental stops: in his latest system of correspondences, PD intervocal *-*ṯ(ṭ)*- is assumed to reflect PN voiced *-*d*-, whereas PD *-*(t)t*- is indicated as a reflex of either PN voiceless *-*t(h)*- or glottalized *-*t`*-[8].

As I shall attempt to show below, some of these ideas can be corroborated by solid evidence, while others do not look defendable. The main shortcomings are, however, common for both approaches:

(a) while the idea that retroflex articulation in stops should be explained on a different basis from retroflex articulation in resonants is quite sound, it is not based directly on observing inner-Dravidian distribution peculiarities, leading to some contradictions;

(b) no distinction is made between alveolar stops and resonants, which is understandable given that the idea is essentially marginal, yet, as a result, some potentially important implications are missed;

(c) external comparison of Dravidian material is impeded by an unsatisfactory choice of cognates — in Illich-Svitych's case, simply because significant progress in Altaic and Uralic reconstruction has been achieved since the publication of his works; in Bomhard's case, due to his unnecessary «reshuffling» of Nostratic correspondences, based on theoretical assumptions rather than actual data.

Below I shall try to remedy at least some of these problems by proposing a scenario that would agree with both the internal facts of Dravidian and the state-of-the-art reconstructions for other branches of Nostratic, most importantly, Proto-Altaic.

Word-medial stops (*-t- / *-ṭ- / *-t̲-)

A. Word-medial retroflex (*-*ṭ*-).

It has already been observed above that out of three types of medial coronal stops in Dravidian, it is the retroflex ones that are the most frequent. Obviously, this does not tie in well with Bomhard's idea that they are descended exclusively from PN *-*d*-, while the much less frequent

[8] Bomhard's reconstruction of PN stops, influenced by his reliance on the so-called «glottalic theory» of the origins of Indo-European consonantal system, is seriously different from Illich-Svitych/Dolgopolsky's models; for details, see [Bomhard 2007: 18–20, 222–223].

dental stops reflect *both* PN *-*t(h)*- and PN *-*t`*- (in Bomhard's reconstruction of Nostratic). In addition, the phonetic mechanism behind such a change remains unclear. Finally, such a decision would weed out several solid and important Nostratic etymologies (such as **ṗatʌ* 'foot' > PIE **ped-*, PD **paḍ-* 'instep' [Illich-Svitych 1967: 368]; in Bomhard's interpretation would be **pat`V*) without sufficient cause.

We will, therefore, assume that, parallel to the situation with other classes of stops, PD word-medial retroflex consonants can reflect any of the three types of PN dentals — voiced, voiceless, and glottalized; this should be considered the «default» reflexation of these consonants in Dravidian.

Dental and alveolar stops, on the other hand, deserve a special explanation. It can be noticed, in fact, that Illich-Svitych's original list of more than 600 Nostratic roots [Illich-Svitych 1967] contains less than a dozen examples on the original PD word-medial *-*t(t)-*, and even out of these, most cannot pretend to constitute «core» etymologies. This is most probably due to the fact that, in most situations where medial dental stops are encountered in PD, they do not go back to simple dentals in PN, but rather to something «less trivial».

Careful analysis of available data leads me to suggest the following hypothesis: PD word-medial dentals reflect contractions of original Nostratic *clusters* with dental consonants as the second element, most notably of the *-*RT*- type, but possibly also *-*LT*-. Evidence for that comes primarily from Indo-European, but also, occasionally, from Uralic and Altaic (which do not preserve these clusters nearly as well as Indo-European does). Cf.:

PD **pīt-* 'to fart' > Tel. *pittu*, Gon. *pitt-*, *pīt-*, Kon., Pen., Man. *pīt-*, Kui *pīt-a*, Kur. *pīt-nā*, Mlt. *pīt-e* (DEDR 4167); cf. PIE **perd-* id. > OI *pard-ate*, Gr. πέρδω, Slav. **pъrdětī*, etc. (WP II 49) < PN **pirt-*;

PD **kat-* 'to cut, cut down' > Kol. *katk-*, Pa. *katt-*, Kon. *kat-*, Kui *kata*, etc. (DEDR 1208), also PD **kat-i* 'knife' > Tam., Mal., Kan., Kod. *katti*, etc. (DEDR 1204); cf. PIE **kert-* 'to cut' > Hitt. *kartai-*, OI *kárt-ati*, *kr̥̄-n-t-áti*, Lith. *kiř-sti*, also Tokh. B *kertte* 'sword', Av. *karəti* 'knife', etc. (WP II 573);

PD **kud-* 'to jump, leap, move about, agitate' > Tam. *kuti*, Kan. *gudi*, Tel. *kudupu*, Kur. *kudd-nā* (DEDR 1705); cf. PIE **(s)kred-* ~ **(s)kerd-* 'to jump, dance' > OI *kūrd-ati*, Greek κόρδαξ 'a k. of dance', etc. (WP II 566);

PSD **mad-* 'marriage, wedding' > Kota *madv* 'Badaga wedding ceremony', Kan. *mada*, Tulu *madụmè* (DEDR 4694; here also Tam. *vatuvai* 'bride, wedding', with the *v-* due to contamination with OI *vadhū́-* 'bride'); cf. PIE **mart-i-* 'bride' > Lith. *martì*, Crimean Gothic *marzus* 'nuptiae' (in WP II 281 treated as a derivative from **mərī* 'young woman', which is not excluded, but cannot be proven either);

PD **et-* 'to lift up; to carry (child) on waist' > Kan., Tel. *ettu*, Kota *et-*, Kol., Kon., Pen., Man. *et-*, etc. (DEDR 796); cf. PA **ērt`a* > PT *\*ā̆rt-* 'to load, carry on back', PM *\*ačï-* id. (EDAL 519) < PN *\*ert`a*.

PD **od- (*ud-)* 'to help, aid, assist' > Tam. *utavu*, Kota *od-g-*, Toda *wɨðx-*, Kan. *odagu*, Tulu *odaguni*, Tel. *odavu* (DEDR 609); cf. PU **jɜrtɜ* 'friend, comrade' > Udmurt *jurt-* 'to help', Zyrian *jort* 'comrade', etc. (Rédei 108) < PN **(j)ortV*.

In all of these cases it is very hard to make any definite conclusions about whether the clusters in question are strictly part of the root or if they are located on the morphemic border, i. e. the resonant is part of the root and the dental stop represents an old derivative suffix. Internal analysis of the evidence, particularly in the Indo-European case, would rather suggest the latter (e. g. a root like PIE **(s)kred- ~ *(s)kerd-* would be traditionally judged as a "*d*-Erweiterung" from the basic root **(s)ker-*, etc.).

If so, this would both explain the relative paucity of good etymologies and suggest further ways of digging for evidence. The assumption that PD roots with the structure **CVT-* can be traced back to derived stems with the structure **CVr-T-* (and possibly also **CVl-T-)* can be verified on additional material from within Dravidian itself, since the proto-language could have well preserved some contrasting pairs like **CVr- (*CVl-)* / **CVt-* with similar meanings. In fact, some such evidence really exists; cf., for instance, the following pairs:

PD **mel-* 'soft, tender' (DEDR 5078) vs. PD **met-*/**med-* id. (DEDR 5070) (the former root finds a perfect parallel in PIE **mel(ə)-* 'soft, weak, tender', whereas for the latter it is interesting to compare IE forms like OI *mr̥dú-* 'soft' < **mel-d-*; WP II 284);

PD **mud- ~ *mūt-* 'old, ancient' (DEDR 4954) vs. PD **mur-* 'mature, old, ancient' (DEDR 4969) (for the former cf., e. g., PA **mi̯àrà* 'male; mature', EDAL 923);

PD **kut-* 'throat, neck' (DEDR 1718) vs. SDR **kUr-al-* 'throat, neck, voice, sound' (DEDR 1774); if the underlying root for both forms is **kur-*, it is natural to compare it with PIE **g^{w}eru̯-* 'throat, neck' (WP I 682) and Uralic **kurk(k)V* 'throat' (Rédei 676);

PD **vit-* 'to sow' (DEDR 5401) vs. Tam. *virai* 'to sow', Mal. *vira* 'seed of herbs' (DEDR 5418) (cf., with slightly different semantics, PIE **u̯erdh-* 'to grow' (WP I 289); the simple root may be seen in PA **ŭro* 'to grow' (EDAL 1504);

PD **ūd-* 'to blow' (DEDR 741) vs. PD **ūr-* id. (DEDR 751).

Let us now analyze the contradicting evidence, i. e. cases where Dravidian word-medial dental stops seem to correspond to simple dental stops in other Nostratic languages with no signs of simplified consonant clusters whatsoever. Cf. the following cases:

PD **vadaṟ-* 'to chat, prattle' > Tam. *vataṟu*, Kan. *odaṟu*, Tel. *vadaru* (DEDR 5244); cf. PIE **(a)u̯ed-* 'to speak' (WP I 251) [Illich-Svitych 1967: 336];

PD **ped(y)ar* 'name' > Tam. *peyar, piyar*, Kan. *pesar*, Kod. *peda*, Tel. *pēru*, Par., Gad. *pidir*, etc. (DEDR 4410); cf. PA **pʿét[e]* id. (EDAL 1140).

All of these etymologies share one thing in common: the Dravidian stems involved all have the shape of **CVTVR*. Once we analyze this data together with the remaining stems of the same shape (including even those that do not have any external etymologies), it becomes evident that in such stems we almost never encounter any coronal consonants except for dental ones, e. g. in Tamil we have *vataṟ(u)*, *kutir*, *catur*, *kataẓ*, etc., but not **vaṭaṟ(u)*, **kuṭir*, **caṟur*, **kaṟaẓ*. In fact, alveolar consonants are strictly prohibited in this position, and retroflex ones are met very sporadically and can probably be explained away as secondary formations.

This important element of distribution demands a correction to the rule formulated above: Nostratic word-medial dental stops are reflected as PD retroflex stops except in triconsonantal stems with the third resonant, in which case they are preserved as dentals.

It can thus be seen that in all cases, dental articulation of medial coronals in PD is caused by neighbouring resonants. The interesting thing about this phenomenon is that it cannot be qualified as assimilation: den-

tal articulation is «triggered» by both dental resonants (*-l-, -r-)* as well as retroflex ones (*-ẓ-)*. The rule should, overall, be perceived as a ban on the co-existence of a retroflex stop and a non-nasal resonant within one root.

A notable exception from the rule is one of the common kinship terms in Dravidian languages: Tam. *attaṉ* 'father', *attai* 'father's sister', Kan. *atte, atti* 'mother-in-law', Tulu *attè* 'aunt, mother-in-law', Kui *ata* 'grandmother', Kuwi *atta* 'aunt', etc. (DEDR 142). This root should certainly be compared with PIE **at(t)a* 'father' (WP I 44) and PA **ĕt́è* 'elder relative' (EDAL 523) and, as such, we should probably expect PD **aṭ(ṭ)-* rather than **at(t)-*. But since the root is expressive, irregular preservation of a word-medial dental can be postulated as a valid hypothesis. It is also not excluded that most or all of the Dravidian forms have been influenced by, or even directly reborrowed from, Indo-Aryan.

From an Indo-Europeanist's point of view, the suggested hypothesis may look somewhat incredible. Indeed, if we take Indo-Aryan as a point of reference, it is a well-established fact that in that family it is exactly the retroflex series of consonants that has arisen from contractions of dentals with the resonant *-r-* or from the latter's neighbouring influence on the former, e. g. *kaṭa-* 'straw mat' < IE **kort-*, etc. Other languages are also known where the appearance of retroflex consonants is linked to clusters with *-r-*, e. g. Middle Chinese [Baxter 1992: 178].

All such cases, however, are already evidently different from the Dravidian situation, in that retroflex consonants in all these languages are «marginal» and fairly rare compared to their unmarked dental correlates; trying to apply the same principle to Dravidian would imminently result in an «oversaturation» of Pre-Proto-Dravidian with unwarranted clusters, not to mention that such a scenario would not at all agree with external evidence. But even relatively recent phonetic developments in individual Dravidian subgroups or languages show that simple dental *-r-*, unlike its retroflex counterpart *-ẓ-*, can occasionally help neighbouring dental stops preserve their dental articulation rather than lose it: where Proto-Dravidian sequences such as **-rVT-* happen to contract, they regularly become standard or geminated dentals, e. g.:

PDR **erud-* 'bullock' > Tamil *erutu*, but Kannada *ettu*, *eddu*, Telugu *eddu* (although Kannada also has *eẓtu*; DEDR 815);

PDR **marud-* 'the sāj tree' > Tamil *marutu*, but Kannada *matti*, *maddi*, *maẓti*, Telugu *maddi*; DEDR 4718).

B. Word-medial alveolar (*-*t̲*-).

It has already been mentioned above that a special phoneme *-*t̲*-, phonologically distinct from *-*r̲*-, is not traditionally reconstructed for Proto-Dravidian, and, likewise, in the original Nostratic reconstruction of Illich-Svitych all instances of *-*t̲*- and *-*r̲*- were treated in the same way — according to Illich-Svitych, all of them reflected Proto-Nostratic *-*r*- in the position before front vowels. Since the revised reconstruction differentiates between PD *-*t̲*- and PD *-*r̲*-, it is only natural that they should have different prototypes in Nostratic, with the former reflecting an original stop and the latter going back to an original resonant.

Regarding PD *-*t̲*-, at the present time the most realistic hypothesis seems to be Illich-Svitych's old suggestion that traced Dravidian word-medial alveolars to Nostratic resonants before front vowels; only in this case, *-*t̲*- (as well as its more frequent voiced counterpart *-*d̲*-) should be traced back to Nostratic *dental stops* before front vowels. Cf. the following potentially corroborative evidence (only the best examples are given):

PD **yēd̲*- 'water' (DEDR 5159; medial *-*d̲*- is based on Parji *per-ed* 'river', Pengo *ēz* 'water', etc.) vs. Uralic **wete* id. The root also has well-known parallels in Indo-European and possible cognates in other branches, but it is the Uralic form that is always unequivocally reconstructed with a front vowel in the second syllable and therefore diagnostic. On the correspondence «PD **y*- : Nostratic **w*-» see [Starostin 2000a].

PD **id̲V*- ~ **ed̲V*- 'meat; to eat meat' (DEDR 529; medial *-*d̲*- is based on Pengo *žey* < **ed̲-ai* 'flesh') vs. Altaic **ite* or **eti* (EDAL 594) 'to eat'. Also, most probably, the same root as PIE **ed*- 'to eat'.

PD **ed̲ai* ~ **er̲ai* 'lord, ruler, husband' (DEDR 527; diagnostic data for the medial consonant are missing, but it was an alveolar consonant in any case) vs. Altaic **edV* 'host, husband' (EDAL 493); the final vowel is not specified in EDAL, but it must have by all means been a front one, cf. the intermediate reconstructions: Turkic **Edi*, Mongolian **ežen*, Tungus-Manchu **edī*-.

Word-medial resonants (*-r- / *-ẓ- / *-r̲-; *-l- / *-l̤-)

A. Medial retroflex resonants (*-*ẓ*-, *-*l̤*-).

Here, I believe, it is reasonable to resuscitate the old idea that Dravidian retroflex resonants can be correlated with the «palatal» **r*₁ and **l*₁ of

Proto-Altaic. The following comparisons, quite strong from both the phonetic and the semantic side, show that such a correlation is promising:

PD **koẓ(u)v-* 'fat (n.)' (DEDR 2146) vs. Altaic **kˁi̯ə̆ŕme* 'fat (n.)' (EDAL 800); **-ŕ-* in Altaic is reconstructed because of Turkic **Kiaŕɨ* 'inner fat'. The match is particularly impressive because of a labial consonant following the medial resonant in both proto-languages (in Altaic cf. Mongolic **karbin* 'inner fat, placenta').

PD **īẓ(i)-* 'to drag' (DEDR 504) vs. Altaic **ī́ŕu* 'trace, furrow' (EDAL 592); Altaic *-ŕ-* reconstructed based on Turkic **īŕ* / **ɨ̄ŕ* id.

PD **pōẓ-* 'to cleave, split' (DEDR 4599) vs. Altaic **pˁŭŕi* 'to crush' (EDAL 1189) > Turkic **üŕ-* 'break, tear', etc.

PD **ēḷ-* 'wisdom' (DEDR 912; a Kui-Brahui isogloss, but its presence in Brahui makes the PD status of the root quite probable) vs. Altaic **ăĺi* 'knowledge, fame' (EDAL 293; Altaic *-ĺ-* is based on Turkic **ẹĺit-* 'to hear'; for semantics cf. Tungus-Manchu **ala-* 'to teach, explain', Korean **ār-* 'to know').

PD **kuḷ-* 'cool' (DEDR 1834; reconstructed with absolute certainty on the South Dravidian level) vs. Altaic **koĺi* 'to freeze' (EDAL 716; Altaic *-ĺ-* based on Turkic **Köĺ-* id.

PD **poḷ-* 'hole; to bore, perforate' (DEDR 4560) vs. Altaic **pˁŭ̆ĺi* (EDAL 1184) > Turkic **ül-* 'to perforate, drill', Tungus-Manchu **pule* 'to open up'.

On the other hand, the best Nostratic etymologies involving Altaic items with simple **-l-* and **-r-* also seem to involve simple Dravidian **-l-* and **-r-*, respectively, e. g.:

PD **mara(n)-* 'tree' (DEDR 4711) vs. Altaic **mŭ́ro* id. (EDAL 956);

PD **mūr-* 'mature' (DEDR 4969) vs. Altaic **mi̯àrà* id. (EDAL 923);

PD **per-* 'a kind of bee' (DEDR 4412; sometimes contaminated with PD **per-* 'big', but there is sufficient evidence to distinguish between the two roots on the PD level) vs. Altaic **pˁĕ́ra* id. (EDAL 1135);

PD **pal* 'tooth' (DEDR 3986) vs. Altaic **pala* id. (EDAL 1075), etc.

B. Medial alveolar resonants (**-r̲-*).

It would seem reasonable that, if the distinction between dental and alveolar stops in PD were dependent on an old following vowel, the same dependence could be responsible for the splitting of original **-r-* into den-

tal *-*r*- and alveolar *-*ṛ*-. And indeed, some of the best examples involving PD *-*ṛ*- show Altaic parallels with front vocalism in the second syllable, cf.:

PD *g*o*ṛ*- 'deer' (DEDR 2165) vs. Altaic **gúri* or **gúre* 'game, deer' (EDAL 574);

PD **gīṛ*- 'line, to draw lines' (DEDR 1623) vs. Altaic **gə̏rè(bV)* 'word, name, witness' (EDAL 541; for semantics, cf. also IE **gerbh*- 'to scratch, to make notches');

PD **do*ṛ*-* 'to come near; to resemble' (DEDR 3535) vs. Altaic **dōre* 'to go, walk, approach' (EDAL 482);

PD **pi*ṛ*-* 'to tremble, be cowardly' (DEDR 4200) vs. Altaic **pʻŭ́ri* 'to shake' (EDAL 1188).

On the other hand, there seem to be exceptions to this rule, with simple Altaic **-r*- before front vowels corresponding to Dravidian **-r*-, e. g. PD **verVg*- 'wild cat' (DEDR 5490) vs. Altaic **bĭ́re* 'predator (wolf, bear, tiger)' (EDAL 343); PD **pōr*- 'to cover, wrap' (DEDR 4590) vs. Altaic **bù̀ri* 'to cover, shade' (EDAL 385), etc. There is not enough of them to completely abandon the hypothesis, yet it is not clear how these exceptions are to be treated — should they be rejected as look-alikes rather than reliable etymologies, or perhaps the «front vowel rule» itself should be modified and restricted to only *some* front vowels, with the Altaic reconstructions to be double-checked and revised (final-syllable vocalism reconstruction in Altaic is still a serious problem in many cases).

Conclusion

All of the above considerations have to be treated as guidelines rather than conclusive evidence. In order to present them as such, a much larger corpus of etymologies is necessary, with particular attention paid to peculiarities of Altaic and Uralic reconstructions, which seem to be particularly diagnostic here.

One thing, nevertheless, is certain: no subsequent work on Nostratic that incorporates Dravidian evidence can any longer ignore, or downplay the issue of «trifurcation» of the original dental consonants in this family. Not only does this downplaying affect the reliability of the supposedly

regular correspondences between subgroups of Nostratic in a negative way, but failure to resolve this problem properly deprives researchers of a valuable chance to show how research on the Nostratic macro-scale can shed valuable light on internal problems of Dravidian and other Nostratic subbranches, hitherto unresolvable by the methods of internal-only reconstruction. I believe that the presented paper, through a combination of previous research by Nostraticists and some of my own suggestions, establishes a reasonable path towards such a resolution, to be further confirmed with new evidence or, perhaps, rejected if evidence in favour of a better solution comes along.

References

Baxter 1992 — W. Baxter. *A Handbook of Old Chinese Phonology*. Mouton de Gruyter.

Blažek 2006 — V. Blažek. Was there an Australian substratum in Dravidian? // *Mother Tongue*, vol. 11, pp. 275–294.

Bomhard 2003 — A. Bomhard. *Reconstructing Proto-Nostratic — Comparative Phonology, Morphology, and Vocabulary*. Signum Desktop Publishing, Charleston.

Bomhard 2007 — A. Bomhard. The Glottalic Theory of Proto-Indo-European Consonantism and its Implications for Nostratic Sound Correspondences // *Mother Tongue*, vol. 12, pp. 1–63.

DEDR — T. Burrow, M. B. Emeneau. *A Dravidian etymological dictionary* (2nd edition). Oxford, 1984.

Dixon 2002 — R. M. W. Dixon. *Australian Languages, their Nature and Development*. Cambridge University Press.

Dolgopolsky 1998 — A. Dolgopolsky. *The Nostratic Macrofamily and Linguistic Paleontology*. Cambridge: McDonald Institute for Archaeological Research.

Dybo 1971 — V. A. Dybo. От редактора. // *Illich-Svitych 1971*, стр. I–XXXVI.

EDAL — S. A. Starostin, A. V. Dybo, O. A. Mudrak. *Etymological Dictionary of the Altaic Languages*. Brill, 2003.

Emeneau 1963 — M. B. Emeneau. *Sketch of Dravidian comparative phonology*. Berkeley.

Illich-Svitych 1967 — В. М. Иллич-Свитыч. Материалы к сравнительному словарю ностратических языков. // *Этимология 1965*. М., изд. "Наука", стр. 321–374.

Illich-Svitych 1968 — В. М. Иллич-Свитыч. Соответствия смычных в ностратических языках. // *Этимология 1966*. М., изд. "Наука", стр. 304–355.

Illich-Svitych 1971 — В. М. Иллич-Свитыч. *Опыт сравнения ностратических языков (семито-хамитский, картвельский, индоевропейский, уральский, дравидийский, алтайский). Сравнительный словарь*. Т. 1. М., изд. "Наука", 1971.

Krishnamurti 1955 — Bh. Krishnamurti. The history of vowel-length in Telugu verbal bases. // *Journal of the American Oriental Society*, 75, pp. 237–52.

Krishnamurti 2003 — Bh. Krishnamurti. *The Dravidian Languages*. Cambridge University Press.

Rédei — K. Rédei. *Uralisches etymologisches Worterbuch.* Wiesbaden, Harrassowitz, 1986.

Starostin 1997 — G. Starostin. On the reconstruction of velar phonemes in Proto-Dravidian. // *Studia linguarum*, 1. М., изд. РГГУ, стр. 190–212.

Starostin 1998 — G. Starostin. Alveolar Consonants in Proto-Dravidian: One or More? // *Proceedings of the International Conference on South Asian Languages* (July 1 — 4, 1997). Moscow, pp. 183–194.

Starostin 2000 — Г. С. Старостин. *Реконструкция фонологической системы прадравидийского языка.* Дисс. на соискание уч. степени канд. филол. наук. Рукопись.

Starostin 2000a — G. S. Starostin. Dravidian roots with initial **j-* and possible Indo-European cognates. // *Проблемы изучения дальнего родства языков на рубеже третьего тысячелетия. Доклады и тезисы международной конференции*. М., изд. РГГУ, стр. 219–221.

WP — A. Walde. *Vergleichendes Wörterbuch der indogermanischen Sprachen*, herausgegeben und bearbeitet von J. Pokorny, 1–3. Berlin-Leipzig, 1927–1932.

В статье обсуждается вопрос происхождения тройного фонологического противопоставления переднеязычных согласных в прадравидийском языке, для которого надежно восстанавливается оппозиция «дентальные : альвеолярные : ретрофлексные взрывные и сонорные». Непосредственным толчком к такому развитию мог служить какой-то неизвестный субстрат «пара-австралийского» характера, однако в рамках теории о ностратическом происхождении дравидийских языков необходимо установить хотя бы относительно четкие правила развития этих рядов из фонемного инвентаря праностратического языка. Анализ внешних параллелей к дравидийским корням, содержащим переднеязычные фонемы, показывает, что оппозиция ретрофлексных и дентальных сонорных, скорее всего, является архаичной, в то время как тройная оппозиция внутри взрывных согласных возникла как результат сложных позиционных распределений в непосредственном предке прадравидийского языка.