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Tamil and some other South Dravidian languages are somewhat unique in that they possess three phonological contrasts in the area of what are usually referred to as r-like segments (continuants, trills, flaps, etc.) as well as two contrasts in the lateral area (and in some of the languages, more). Because of an unfortunate lack of uniformity in the transcriptional systems that have been used to describe these segments, and because of some other tendencies that are difficult to group under one rubric, the question of what is an "r" and what is not an "r" has been historically unclear. It is the purpose of this paper to attempt to clear up the question of both the phonetics and the phonology of continants and laterals in Tamil and to some extent in the other South Dravidian languages that have similar contrasts.

The question of what is or what is not a phonetic contrast in Tamil is, as always, complicated by the diglossic situation, since contrasts that are maintained in the literary language are not always maintained in the spoken dialects; furthermore, since many speakers learn to make contrasts in Literary Tamil, they often feel that they should (or that they even actually do) make them in spoken Tamil, ever if the general population (and in fact they themselves) does not usually make such contrasts. It will be necessary throughout this paper to distinguish the literary dialect from the spoken dialects, and also to point out where certain phonetic contrasts are only normative, and are not maintained in normal casual speech.

Before discussing the Tamil situation, it would be perhaps instructive to review the literature on r and l in other languages, i.e. the general phonetic and phonological distinctions that are found in a universal way to distinguish these classes of segments. It is naturally to be hoped that previous research will have found a principled basis for distinguishing these sounds, so that we could then apply any such universal criteria to the situation at hand.

In the standard works in phonetics, however, things are not particularly clear. Most works group l's and r's together as a class of consonants ("sonorants", "liquids") that seem to share certain feature but in the final analysis there is often little basis for any grouping on <u>phonetic</u> grounds. (The <u>phonological</u> grounds are fortunately somewhat stronger, as we shall see). Thus for example Heffner (1950) grou l's (lateral consonants) with nasals, fricatives, and other r-sounds under "open consonants" (pp. 139-62). Within this latter group he mak a primary distinction between laterals and fricatives:

> "Consonants produced by the occlusion of the central region of the oral passage while the breath stream is made to flow over the sides of the tongue, through the teeth and thence forward to the lips are lateral consonants. The other open consonants may be grouped together as fricative consonants, unless one wishes to segregate from the others of this group

> the fricative "r" sounds and those few which are particularly marked by the relative prominence of their third or final phase." (Heffner 1950:141).

Heffner, like many other phoneticians, stresses that the primary articulatory feature that distinguishes l's from other consonants is

> "the production of an occlusion along the median line of the roof of the mouth in such a way as not completely to stop the flow of the breath stream but to force it to escape over the lateral margins of the tongue, through the teeth, and along the inside of the cheeks to the lips." (1950:143-4).

As for a definition of r-sounds, since Heffner classifies them as being of two sorts, namely "intermittent stops" and "open consonants", there is little that can be said about them in a general way, except perhaps that if sounds are ranged along a continuum from consonants with complete occlusion to vowels with none, r-sounds are found on two points somewhere in the middle, with "intermittent stop" r's closer to stops, and other r-sounds closer to the vowels:

> "...there are in various languages a number of open r-sounds of the fricative type, some of which indeed have so far lost their friction as to become very much like vowels." (p. 146).

Heffner goes on to stress that r-sounds of both types can only be classified together on historical or "linguistic" grounds (i.e., phonological), because "phonetically, [r], and [R] and [ɹ] are very different sounds." (p. 147).

Ladefoged (1971) classifies r's and l's as some of the many kinds of manners of articulation that can accompany sounds produced at various points of articulation. In fact, in Ladefoged's table 25 (p. 46) r-like sounds are included under five of the ten different kinds of manners he lists (although he admits that this list of ten is not complete): there are approximant r's, e.g. [ɹ], trilled r's, e.g. [r, R], tapped r's [ɾ], flapped r's [r̝,ɽ], and central and lateral r's [ɻ,ɭ]. Laterals are, of course, another category of manner. He contrasts lateral with central as being mutually exclusive, as are in fact all the categories listed in each "group": an oral vowel cannot be nasal, or vice versa; a tap cannot be a flap. But of course there can be some cross-classification between the groups, as for example lateral and flap (as seems to be the case with the Tamil retroflex lateral, especially before low vowels, as we shall see below).

But as we have already pointed out, r-like sounds can be found among many of the different manners, so while some kinds of r-like sounds, e.g. the central, "American" r, or [ɹ], cannot be by definition lateral, other r-sounds are more difficult to pin down to one or another category, i.e. there is no feature "r-like" that is a distinct manner or articulation. As with Heffner, we find no justification in Ladefoged's discussion of r-sounds (as indeed none is intended) for the notion that r-sounds are a phonetic class, which is not the case with l-sounds, which are clearly and always lateral.

Ladefoged considers the possibility that some of these sounds might be grouped together on the basis of their auditory similarity, even if a physiological basis for so grouping them can not be found, but he does not propose that r-sounds might be so grouped.

Chomsky and Halle (1967) have also discussed r and l in an attempt to decide which phonological features might be applied to distinguish them, but as we have already hinted, while r and l can easily be distinguished on phonological grounds, the phonetic grounds for so doing are not obvious. Their discussion does not add much to our understanding of the phonetics of r and l. (Chomsky and Halle 196 318).

Clearly more work needs to be done on the phonetics of r and l, particularly the acoustic and auditory characteristics of these sound To my knowledge, there are no cross-language auditory or acoustic studies of these sounds, and although there is beginning to be some work on infant recognition of these sounds cross-linguistically, ther are no conclusions to date that will help us clarify the problem.

It seems obvious to me that in general, l's can often be distinguished (in a language that has a contrast between r and l) but that the r-like sounds are sometimes more difficult to classify. That is, if a continuant has lateral occlusion, then it is a lateral; but no particular distinguishing feature emerges to clearly mark r's; they are a typically minus marked class of sounds--not lateral, not nasal, not fricative (although even here some languages e.g. Czech, display a fricative r that is very close phonetically to [ž].) Furthermore, the question of r's and l's is fraught with the problem that many East Asian languages, notably Japanese, Chinese Korean, and some Tibeto-Burman languages, and others, do not distinguish phonologically between r and l at all, having only one phoneme that sometimes has allophones that are r-like, and others that may be lateral.

Turning to the Tamil situation, let us first deal with the supposed phonetic contrast between the two alveolar r's, ṟ and ṯ . In the dialects of Tamil that are influenced by Malayalam (those spoken in Kanyakumari district), and in Malayalam itself, there seems to be a genuine contrast between these two historically different sounds, even though the phonetic contrast in Malayalam is quite different from that of Tamil dialects that maintain a contrast. Ladefoged characterizes the Malayalam distinction as being that of

> "one being more dental and the other more alveolar. A recent palatographic investigation showed that these trills are probably further distinguished by the action of the back of the tongue." (Ladefoged 1971:50)

My own impression of this phonetic distinction is that in the dialect of the speaker of Malayalam I investigated, the more forward ("dental of the two r's also has a palatalized character, or at least a forward movement of the tongue that produces an effect similar to that of palatalization in, e.g., Russian. In dialects that maintain a contrast in Tamil, however, the difference between ṟ and ṯ seems to be that the first is a flap or tap, while the second is a trill

(Ladefoged 1971:51). Phonologically and historically the two sounds are quite different, as I have attempted to show in an earlier paper (Schiffman 1975:69-85) even if some reflexes of the alveolar /t̲/ do merge phonetically with /r/ in most dialects. In my analysis the alveolar /t̲/ shares many features with the stops /t/ and /ṭ/, except that /ṭ/ is [-anterior] and /t/ is [+distributed]. I reproduce here the feature matrix given there for the six underlying stop consonants of Tamil.

	p	t	t̲(r̲)	ṭ(T)	c	k
coronal	-	+	+	+	+	-
anterior	+	+	+	-	-	-
distributed	-	+	-	-	?	(-)
high	(-)	(-)	(-)	(-)	+	+

In my analysis I have tried to keep /r/ and /r̲/ phonologically separate in order to handle certain morphophonemic alternations that /r̲/ is subject to, such as oblique stems of nouns, certain past tense formations, etc., while /r/ is immune to such changes. Phonetically as I am trying to claim, /r/ and /r̲/ merge in intervocalic position so that in most dialects there is no contrast.

This issue, however, is complicated by certain sociolinguistic factors. The Tamil orthography distinguishes these two sounds, and literate people are taught that there is a distinction between them, e.g., that /r/ is mellina ra ("soft" r) while /r̲/ is valina ra ("strong" or "forceful" r). This distinction seems to imply that there is a phonetic contrast between them of mellow vs. strident or 'soft' vs. 'hard' or whatever. Many speakers of Tamil claim to make a distinction based on this terminology, but if pressed may admit that they trill /r̲/ when speaking "correctly" (i.e. when speaking Literary Tamil) but do not do so when speaking spoken Tamil. Other than with speakers of Kanyakumari dialect, therefore, it is very difficult to find illiterate speakers of Tamil who make a phonetic distinction between these two r's. The distinction therefore, seems to be an artifact of literacy. Furthermore, the existence of a "folk" system for referring to them is evidence for the wide-spread problem that Tamil speakers have of keeping them straight. I refer here to the terms cinna ra 'little r' and periya ra 'big r' that children and others use to refer to them in spelling words correctly, since if there were a true phonetic distinction, there would be no need for a labeling system based on the size of the graphemes.

For an example of a recent study of Tamil phonetics that makes a claim for a phonetic distinction between the two, we have the statement that /r/ is

> "...produced by a single quick flap of the tongue at the alveolar arch. The breath escapes between the tip of the tongue and palate. The vocal cords are vibrated. The soft palate is raised. This sound is known as the voiced alveolar flap." (Rajaram 1972:35)

whereas /r̲/ is described as

> "...produced by the rapid vibrations by the tip of the tongue against the middle of the alveolar ridge. The soft palate is raised to close the nasal passage. The vocal cords are vibrated. This may be described as a voiced alveolar trill." (ibid. p. 36)

The examples given for this and all other specimens of Tamil in the whole work are in fact from Literary Tamil, that is, the spelling pronunciation of the literary language.

By contrast, most descriptions of spoken Tamil, and in fact all textbooks used to teach spoken Tamil to foreigners, (except those based on the Kanyakumari dialect, e.g. Shanmugam Pillai 1965), do not claim a phonetic distinction between /r/ and /ṟ/, since there is in fact none in any dialects other than those influenced by Malayalam..

The British phonetician Firth did a brief study of Tamil phonology entitled "A Short Outline of Tamil Pronunciation" (Firth 1934) and this is worth examining since the specimen of Tamil he studied is obviously the literary dialect with some concessions toward spoken, i.e., with no phonetic contrast between /r/ and /ṟ/, although some reflexes of geminate /ṟṟ/ and /nr/ occur in the sample. The former, he states, are often realized as [ttr] (but also [tt]), while /nr/ is realized as [ndr], a more literary pronunciation. He concludes the description of r-sounds by stating that

> "In this brief sketch the Tamil r-sounds cannot be fully investigated, but it appears probable that the use of the two written characters ர and ற, does not correspond to any parallel habits of speech." (Firth 1934:xvi).

By contrast, the specimen of Tamil given in the Principles of the International Phonetic Association (IPA 1949:38-9), although labeled "Tirunelvalli, spoken language", is almost completely Literar Tamil, except for some items that are possibly the result of transcriptional mistakes, or hypercorrections on the part of the informant. In any event, /r/ and /ṟ/ in intervocalic position are not phonetically distinguished in that sample even though only one instance of /ṟ/ occurs, i.e. ஈறவம் /eeṟavum/, transcribed there [e:ravum]. This is yet another example of the tendency to err on the side of literary pronunciation that Tamil speakers exhibit when they are in a "formal" situation--having one's speech recorded and preserved forever in the publication of the IPA has apparently led this speaker to claim that his Tirunelveli dialect actually maintains contrasts and lacks other changes not found in any true spoken dialect of Tamil, while the usual contrast between /r/ and /ṟ/ are not maintained, or at least recorded.

In the area of laterals, the distinction between [l] and [l̤] is historically and phonologically important, with many minimal pairs and varying morphophonemic results dependent on the contrast.

kallu 'stone'	kal̤lu 'toddy, country liquor'
puli 'tiger'	pul̤i 'tamarind, sour'
palli 'lizard'	pal̤li 'school, room, chamber'
niilam 'blue'	niil̤am 'length'
vaal 'tail'	vaal̤ 'sword'

Nevertheless, some speakers do neutralize the contrast between these two sounds, with the retroflex lateral being lost. This is particularly true of dialects in the Trichy-Tanjore-Madurai area, i.e. central Tamilnadu, but also observed even in Coimbatore and South Arcot districts. Literate speakers of course learn to make the contrast, but like the contrast between the r's, the process of learning to keep them separate is for some a difficult one.

The question of how to distinguish phonetically between alveolar and retroflex l's is fairly simple--[l] is a true [I]-quality lateral, i.e., with the tongue close to the position of the vowel [I], and the back of the tongue lowered. For [ḷ] the blade of the tongue is retracted to touch the hard palate. Firth describes this sound as

> "retroflex and flapped, like intervocalic t and n. The tip of the tongue must be curled back and flapped very quickly forward, the under edge just catching the teeth ridge on its way forward and down. The main body of the tongue is not drawn back as for ɹ. (Firth 1934:xiv-xv).

The flapped quality that Firth mentions is particularly noticeable when the following vowel is [a], since the tongue then strikes the base of the mouth with an audible slap that is not so noticeable when the tongue returns to a high-vowel or especially back-vowel position.

To distinguish /l/ and /ḷ/ phonologically, we are faced with the same problem as with other retroflex consonants, that is, existing descriptions of retroflexion do not adequately capture the kinds of generalizations we would like to capture, as I have tried to point out earlier (Schiffman 1975). However, if we are just talking about the distinction between [l],and [ḷ], then the feature [anterior] can be used to distinguish retroflex consonants from their non-retroflex counterparts, i.e. [l] is [+ant] and [l] is [-ant], which is the solution chosen by Ramaswami (1979:43).

The final segment to be dealt with in this discussion of l's and r's is a problematical one. This sound, symbolized ழ in the Tamil orthography (and also found in Malayalam), has been transcribed variously as [r̤, l̤, l̲, z, zh, r̥, R, ɹ] and perhaps even some others. The Tamil Lexicon uses [l̤] while Burrow and Emeneau (1961) use [r̤] (I prefer the latter, the reasons for which will become more evident in the rest of the discussion). As is perhaps evident from the wealth of transliterations, various scholars have not come to agreement on either the phonetics or phonology of this segment.

For example, Firth (1934) transcribes it as [ɹ] and describes it as

> "A frictionless continuant having an obscure unrounded back-vowel quality. ɹ is made by drawing back the whole tongue, and spreading the blade laterally, making it thick, short and blunt, so to speak, so that it approaches the middle of the hard palate. The result is a very retracted liquid sort of r-sound. Sometimes the under side of the tip of the tongue is raised towards the mid palate." (Firth 1934:xvi)

Ladefoged (1971) briefly mentions this sound in Tamil, calling it a "voiced postalveolar approximant" and transcribing it, like Firth with [ɹ], but describes the same sound in Malayalam as a retroflex approximant, and transcribing it with [ɻ̣]. (Ladefoged 1971:50-1). It is not clear to me that these sounds are that different in the two languages, nor that Tamil's [ɹ] is more forward than Malayalam's [ɻ̣].

Rajaram's 1972 booklet on the phonetics of Tamil is not much more helpful. He transcribes it with [l̠] and describes it as produced with

> "...the tongue...curled back and the tip of the tongue... placed very near the roof of the mouth but not touching it. The air stream is allowed to pass through the sides of the tongue as well as in between the tip of the tongue and the roof of the mouth... . This sound may be described shortly as a voiced retroflexed palatal lateral (Rajaram 1972:33).

It is Rajaram's unfortunate use of the term "lateral" that unnecessarily complicates the categorization of this sound, since by his own description, the tongue is not touching the palate anywhere in its production, so that the terms palatal and lateral are completely inaccurate. As we have already seen, most phoneticians agree that for a sound to be lateral, there must be occlusion between the center of the tongue blade and the alveolum or palate, with the air escaping to one or both sides of the tongue. This is clearly not the case here.

It is perhaps worth citing here the description given by Tol̤kāppiyār in his grammar of Tamil, believed to be the oldest extant work in Tamil and to date from the early centuries of the modern era. He states in sutra 95 that

> "nuṉiṉā vaṇari yaṇṇam varuṭa
> rakāra l̠akāra māyiraṇṭum piṟakkum."
>
> "r and l̠ are produced by the tip of the tongue being raised and allowed to gently rub against the hard palate." (Subrahmanya Sastri 1930, I:14).

Aside from not distinguishing these two sounds from each other, this description also seems to indicate that /r̤/ is a palatal sound, and that there is contact between the tongue and the palate; in fact Tol̤kāppiyār's phonetic description of most of the lateral, nasal and continuant sounds is inadequate, because the only distinction between /r/ and /l̠/ on the one hand and /ṟ/ and /n̤/, on the other, for exampl is that in the latter, the tongue "gently touches" the hard palate, while for the former pair, the tongue "gently rubs" against the hard palate. Fortunately, as we shall see later, Tol̤kāppiyār's description of phonology is more accurate than his phonetics.

We have now seen four different descriptions of /ɻ̣/, none of which comes completely to terms with this sound. My own impression is that Firth's description is the most accurate, despite his characterization of it as having an "obscure" quality. On phonetic grou it is clearly not a lateral, and should probably be grouped with r-s

despite the tradition of transcribing it as [l]. However, in the absence of straightforward acoustic and auditory studies, which migh perhaps show us that /ṟ/ belongs squarely with r-sounds rather than with laterals, glides, fricatives, or whatever, it seems to me we mu look for support from phonology.

Before discussing the phonological patterning of /ṟ/ in Tamil, it should be noted that the occurrence of /ṟ/ in modern spoken Tamil is, like the occurrence of /r/, complicated by sociolinguistic factors. That is, this sound has been lost from most spoken dialects and is only used in Literary Tamil, where it has acquired the reputation of being a very difficult but distinctly Tamil kind of sound, such that if a person can pronounce it, he can be said to speak Tami well, whereas if the opposite is the case, he does not know Tamil.[1] Thus one's ability, or lack of it, to pronounce /r/ has become a kin of shibboleth for Tamils, such that a great deäl of attention is paid to its production and correct occurrence in Tamil words. Indee the final segment of the name of the language itself (/tamiṟ/) is an instance of /ṟ/, even if it is transliterated as /l/and many people pronounce it [ɻ]. It seems to be a phonologically unstable sound in many ways, since it has been lost or modified in all the Dravidian languages (which all had it in earlier stages) except, of course, in Tamil and Malayalam. In most of the other languages, it has merged with /l̤, lh, l, w, r̤, g, y, d̤, s, š, r, rr, or s̤/[2]. That it has gone in so many divergent directions seems to be a testimony both to its instability and its phonetic vagueness; even in Tamil dialects that have lost it, it has merged with segments as different as /l̤, k [g], and /y/, ie. LT /maṟai/ 'rain' can be found in various dialects as [maḷe], [mage], [maye], and for dialects that lose /l̤/, even [male]. In any event, /ṟ/ has become a sociolinguistically marked segment, preserved in most Tamil dialects only by the pressure of literacy and because of its supposed "uniqueness" in Tamil. Thus it differs from /r/ in that the latter has no "unique" status since trilled r's are to be found in many languages of the world.

Phonologically it seems clear to me that [ɻ] is to be grouped with r-sounds. Tol̤kāppiyār gives some very interesting phonotactic reasons for this, as he himself groups it with /r/, which we have seen in sutra 95. In sutra 29 he says:

> "yarala vennum pulli munnar
> mutalā keluttu ṅakāramōṭu tōnrum.
>
> Y, r and l can be followed by those consonants which can stand as the initial members of a word (i.e.) k, t, n, p, m, c, v, ñ, y, and ṅ." (Subrahmanya Sastri 1930:5)

In sutra 30 he says that all consonants except /r/ and /ṟ/ can be geminated:

> "meynnilai cuṭṭi nellā veluttun
> tammur rāmvarūum ralavaṅ kaṭaiyē.
>
> All consonants except r and l can be followed by the same consonant." (Subrahmanya Sastri 1930:5).

In sutra 48 he groups it with /y/ and /r/ as consonants that can precede stops and nasals, whereas /l/ and /ḷ/ may not precede them, while in sutra 49 he states:

> "kuṟumaiyu neṭumaiyu maḻavir kātalir
> roṭarmoḻi yellā neṭṭeḻut tiyala.
>
> r or ḻ at the end of toṭarmoḻi is considered in the same way as if it follows a long vowel irrespective of its being followed by short or long vowel"(S. Sastri 1930:8)

In addition to these environments and rules for occurrence or non-occurrence of /ṟ/, which are still valid in Literary Tamil today, there are some other facts about /ṟ/ that should be noted. Although /ṟ/ is retroflex and obeys other constraints on retroflex consonants, such as not occurring initially, it does not have the same effect on dental consonants that other retroflex consonants do, i.e., causing them to assimilate to retroflexion. For example, retroflex /ḻ/ in a verb-stem like /keeḻ/ 'hear, ask' causes the past tense formative /t/ to retroflex: /keeḻ-t-een/ → /keeṭ-ṭ-een/. In other cases, /ḻ/ assimilates to nasality, but also causes past tense /t/ to assimilate to retroflexion: /aaḻ/ 'rule' → /aaṇ-ḍ-aan/ 'he ruled'. Stems with final alveolar lateral also have a similar effect: /nil/ 'stand' → /niṉ-ṟ-aan/ 'he stood'; /vil/ 'sell'→/viṟ-ṟ-aan/ ' he sold'. Stems with final /ṟ/, however, do not have this effect--no assimilation to retroflexion is ever caused by the presence of /ṟ/: /aaṟ/ 'be deep' → /aaṟ-nt-atu/ 'it was deep'; /taaṟ/ 'let down, deepen' → /taaṟ-tt-atu/ 'it let down'; /paaṟ/ 'go to ruin, become decayed' → /paaṟ-tt-atu/ 'it became decayed'; /aṟu/ 'weep' → /aṟu-t-atu/ 'it wept'.

In spoken Tamil, of course, /ṟ/ usually merges with /ḻ/, so that the contrast between /aaḻ/ 'rule' and /aaṟ/, 'be deep', even if lost on the surface when in isolation, is preserved in the morphophonemics until a very late rule merges them (otherwise the rule that assimilates past tense dentals to retroflexion in the presence of /ḻ/ would do the same in the presence of /ḻ/ from underlying /ṟ/.) As it is, the contrast is evident only in pairs like /aaṇ-ḍ-atu/ 'it ruled' vs. /aaḻ-nt 'it was deep'.

It thus seems clear that /ṟ/ is phonologically a very different kind of sound from /ḻ/, sharing more features in common with /r/ than with any kind of lateral. There are in fact no environments or constraints that apply to it and to laterals, but not to /r/. It thus forms a natural class with other sonorants, but within the sonorants it forms a natural sub-class with /r/ only. It therefore shares most distinctive features with /r/ but differs from it in that it is retroflex. A feature matrix for /l/, /ḻ/, /ṟ/, and /r/ would probably look something like the following:

	l	ḻ	r	ṟ
sonorant	+	+	+	+
continuant	+	+	+	+
lateral	+	+	-	-
anterior	+	-	+	-
coronal	+	+	+	+
retracted		(+)		(+)

One of the reasons for writing this paper has been to try to be more precise about the phonetics and phonology of /r̲/, since transcriptions of it using /l̲, ẓ/, or whatever, have been both phonetically inaccurate and phonologically misleading. What then are we to use as a symbol for this sound?

/l̲/. As we have shown, the use of a symbol like l̲ (or l̤ or lh) is misleading as it tends to perpetuate the notion that /r̲/ is a kind of lateral sound. It has been used in the Tamil Lexicon and in many other sources, particularly in India, where it seems to be clear to those who use it since they know the language. To scholars outside the area l̲ is definitely confusing.

/ṛ/ is inaccurate because it leads one to think that one is dealing with the Indo-Aryan, particularly Hindi, flapped retroflex ṛ, which is far from the case. A phonetic [ɾ̣]-like sound is found in many Dravidian languages, of course, often as an allophone of /ṭ/ or /ḍ/, intervocalically, e.g. /viiṭu/ is phonetically [viːɾ̣u] 'house'.

/ẓ/ and /zh/ are unfortunate and inaccurate because they obscure the affinity and patterning of /r̲/ with /r/. There is a tendency among French scholars to equate /r̲/ with French [ž] and to transliterate French words with [ž] with Tamil /r̲/, etc. Some scholars have used /ẓ/ because of its 'unambiguous' nature, and because of its vagueness as a historical cover symbol for this sound in Proto-Dravidian. Latter-day uses of zh are to be found on public signs for place names, e.g. kozhikodu for Calicut, Sirkazhi for /cirkaar̲i/, etc.

[ɹ], although phonetically correct is not found on anyone's typewriter unless one puts the paper in upside down, and R, although found on everyone's typewriter has consistently been used only by Americans; it is easily confused with the same symbol used by others for /r/, and in the IPA system it suggests a phonetic uvular quality, which /r̲/ of course does not have.

The only symbol left that makes phonetic and phonological sense is /r̲/, as should be clear by now. /r̲/ was first used by Burrow and Emeneau in their DED (1961) and used consistently by Emeneau since. Its only drawback is the lack of a unique symbol for it on many typewriters, although the present machine makes a very decent /r̲/ by underscoring r with an umlaut.

As Tol̤kāppiyār in effect has pointed out, classifying ழ as an r-sound means that Tamil has a symmetrical system of liquids--an alveolar l and r, and a retroflex l̤ and r̲. Such a system is of course rare in the languages of the world, but an interesting parallel is found in Proto-Altaic, where scholars have concluded two kinds of l's and two kinds of r's must have existed (Poppe 1960). The nature of the phonetic difference between Proto-Altaic l^1 and r^1 on the one hand and l^2 and r^2 on the other, is not clear, since what is being dealt with is a reconstructed Proto-language, but Poppe notes, for example that

> "Es ist gewiss möglich, dass es nicht ein *ŕ sondern ein *ř von der Art des Tschechischen ř gewesen ist." (Poppe 1968

It would probably be instructive to see whether individual etyma from the Dravidian corpus with any of these liquids bear any resemblance t Proto-Altaic etyma with corresponding liquids, but this is a matter f another paper.

Notes

1. This of course ignores the fact that phonetically this segment occurs in Malayalam as well, where it is in fact better preserved than in most Tamil dialects.

2. For various historical developments of *ṟ see Krishnamurti 1958, Burrow and Emeneau 1961, and Emeneau 1971 .

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