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INTERVOCALIC -V- DELETION IN TAMIL: EVIDENCE FOR ASPECT AS A MORPHOLOGICAL CATEGORY

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Tamil possesses a rule of intervocalic -v- deletion that has eluded systematic attempts at formulation because of the diverse morphological and syntactic environments in which it occurs. The problem is complex, since there are underlying -v-s in some lexemes that are deleted, but -v- is also introduced in inflection and in syntax by a sandhi rule. The theory of Lexical Phonology (LP) offers some insights into a number of phonological processes that have hitherto been thought of as irregular, and its application to Tamil seems to shed some light on -v- deletion, showing it to be quite regular after some other phonological processes have occurred. The application of LP to these data gives evidence that certain supposedly syntactic processes in Tamil, such as verbal aspectual marking, must be considered instead to be part of derivational morphology rather than part of syntax.

1. LEXICAL PHONOLOGY AND TAMIL

1.1. Introduction

Tamil possesses a rule of intervocalic -v- deletion that has eluded systematic attempts at formulation because of the diverse morphological and syntactic environments in which it occurs. In a previous analysis (Schiffman 1979: 6) I have stated the rule as occurring after the second syllable, but said little about various morphological exceptions. The problem is complex, since there are underlying -v-s in some lexemes that are deleted, but -v- is also introduced in inflection and in syntax by a sandhi rule that prevents vowels from coalescing. In particular, -v- is inserted after a back vowel and before any other vowel.

The theory of Lexical Phonology (LP) as it has developed in the last decade offers some insights into a number of phonological processes that have hitherto been thought of as irregular, and its application to Tamil seems to shed some light on -v- deletion, showing it to be quite regular after some other phonological processes have occurred.

The purpose of this paper is to examine these phenomena in detail. The most important conclusion it makes is that certain supposedly syntactic processes in Tamil must be considered instead to be morphological processes; to be more precise, they must be part of derivational morphology. Otherwise, phonological rules must be sensitive to syntactic rules of the language, which leads to the paradox of phonological rules relying on syntactic information that is no longer available, having already been deleted in earlier derivational processes.

1.2. Theoretical Background

Tamil has already been the subject of analysis using the LP model (Christdas 1987, 1988), as has its close sister, Malayalam, in the pioneering work of K. P. Mohanan (1986), Mohanan and Mohanan (1984), and T. Mohanan (1989).¹

Since the LP model is relatively recent and has not been applied to many Dravidian languages, or indeed

¹ Their work did not focus on the kinds of rules in Tamil that are under consideration here, namely a rule of intervocalic [v]-deletion (actually a rule that deletes intervocalic [v]) and the vowel that follows it), henceforth vdel, a rule of intervocalic consonantal lenition lenition, and a number of other processes that these two rules interact with. My analysis will use data from Spoken Tamil (ST), by which I mean the dialect that educated speakers use in ordinary conversation and informal situations. It differs from Literary Tamil (LT, which has its own spelling pronunciation) in numerous phonological, morphological, and syntactic ways. For a structural description of ST, see Schiffman 1979; for a treatment of Tamil (Kanyakumari dialect) using Lexical Phonology, see Christdas 1988. The phonemic representation used for LT reflects the spelling pronunciation, with some automatic rules (voicing after nasals, lenition) not represented; the representation for

513
many South Asian languages, it may be useful to summarize the theory briefly. A thumbnail sketch of this theory is given in Christdas 1988:

The theory of Lexical Phonology (LP) centers around the assumption that phonological rules apply in the lexicon and interact with morphological rules. The lexicon, in this account, is not merely a repository for lexical entries, but is the domain of all the morphology as well as the phonological rules that are sensitive to the morphology (the morphophonemic rules of structuralist accounts).

In all models of LP, the lexicon is organized into a hierarchy of levels, each constituting a well-defined and independent domain of morphological rules. In some models, each morphological level (or stratum) has one or more phonological rules that apply uniquely at that level. . . . In other models, the phonology constitutes a separate module within the lexicon, independent of the morphology. . . . Each phonological rule is specified for its domain of application, which can range over more than one level. . . .

. . . . [W]ord formation rules are generally assigned to discrete strata, unlike phonological rules, the domain of which may be a series of continuous strata . . .

Most versions of Lexical Phonology assume that brackets delimiting lexical entries are erased at the end of each stratum. Bracket erasure thus is a blocking convention that prevents a later rule from referring to the internal structure of words at an earlier stratum (Christdas 1988: 46–49).

Christdas goes on to point out that while there are no uniform accounts of LP (i.e., its practitioners disagree with each other in many ways), there is agreement on the need for strata or levels, with different kinds of word formation occurring at different levels because of the different kinds of morphological processes involved. In English, noun-formation suffixes like -ity and -al must occur at a different stratum than suffixes like -ness, -ism, and -dom. The reason is that the first set of suffixes affect stress in English, which in turn has an effect on the vowel quality of stressed vowels, whereas the second set can be added to stems or roots without such effect. But note that when national (de-

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ST does show voicing (since with massive loans from English and Indo-Aryan, voicing is no longer predictable), but does not show the effects of lenition or nasalization, which are still automatic in ST. These rules will be discussed later in the paper. Evidence from LT will occasionally be adduced to clarify certain processes.

1.3. Implications of LP Theory for Tamil

When the foregoing assumptions about LP are sorted out and applied to the issues we are examining in Tamil, what appears to be a rather complex phonological rule or rules governing vdel. is actually a rather regular process once a number of other more problematical issues have been taken care of. The theory of LP allows us to see that some of these rules actually apply more than once, at different levels, and with different surface results. But the application of this theory also appears to reveal some new insights about the morphology and syntax of Tamil that are more difficult to reconcile with standard views of these matters, and require a departure from our previous ways of thinking
about how Tamil is structured. In particular, the treatment of Tamil vdel within the LP model seems to indicate that processes involved in deriving aspectually marked verbs, which have always been thought to be syntactic, now appear to be part of derivational morphology. Since the data adduced to illustrate the operation of vdel rely on an understanding of not only the verbal aspectual system, but also such diverse phenomena as derived causatives and negative modals, this should not be surprising. Still it remains theoretically challenging to try to deal with these disparate phenomena with the same kinds of rules.

2. THE FACTS OF INTERVOCALIC -v- DELETION

2.1. Complications Raised by Tamil Diglossia

Any description of Tamil is complicated by the fact that the language is severely diglossic (Britto 1986): many descriptions of Tamil do not state whether the norm being described is Literary Tamil (LT), some variety of Spoken Tamil (ST), or some kind of mixture. Researchers also disagree as to whether a standard form of ST exists, and puristically inclined native speakers are known to deny even the existence of ST and/or skew their pronunciation in the direction of LT when questioned about Tamil. All these factors complicate any analysis of Tamil that focuses on a feature of ST that is not shared by LT. The rule in question, vdel, is one of these features. Since it is not found in LT, some find it tempting to describe it as a historical rule that has resulted in the absence of intervocalic -v- in certain places in ST where LT still retains it, and let it go at that. Fortunately or unfortunately, the picture is not that simple. LT gives us evidence of environments where intervocalic -v- once occurred, but its deletion in ST is not the result of a regular across-the-board historical process.

The rule of vdel at first glance appears to delete intervocalic [v]s in most environments with the exception of [v]s that mark the future of certain verbs, [v]s that are the markers of deverbal-nouns (of certain classes of verbs), and [v]s that arise in sandhi processes. There are exceptions, however, and they have not lent themselves to simple analysis in the past. As mentioned, on the surface the rule seems to apply after the second syllable, with various morphological exceptions, but this is oversimplistic.

The environments in which vdel occurs are as shown in table 1. It should be noted that when vdel occurs it almost always takes the subsequent vowel with it; i.e., it is a syllable-deletion rule that operates on certain syllables that begin with -v-, but only intervocally. Morphemes that begin with -v- occurring in isolation are not subject to the rule unless by some morphological or syntactic process they are attached to other morphemes, such that an intervocalic environment arises. But as we stated, not all surface -v-s are deleted in ST, so our task is to find some constraints on this rule that are not arbitrary and capricious.

We will begin by attempting to establish whether all surface occurrences of -v- have the same underlying source, and then go on to deal with morphological problems that must be solved before the phonological issues can be sorted out. We will take note of certain quirks in the vdel 'rule' such as the observation that the positive form of the modal (veera)num loses its -v- (and the following vowel) but the negative form veenadum does not (no. 8 in table 1); similarly, the imperative4 of the causative contains the -v- but the past tense loses it (no. 3 in table 1).5

3. SOURCES OF -v-: ITS UNDERLYING CHARACTERISTICS

As noted, LT has its own 'spelling pronunciation' based on the orthography of the literary dialect and does not exhibit the phenomenon of vdel, so its occurrence is one of the clear indicators that the speech specimen is a token of ST rather than LT.6

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2 In fact, I am aware of no studies of Tamil phonology that actually do come to grips with these data.

3 It is this word-internal constraint on vdel that gives evidence for the non-syntactic nature of aspect, as we shall see.

4 In all verbs in the language except two, the non-polite imperative is morphologically identical to the base-form or stem. This is the form to which all other morphemes are added.

5 But note that there are some spoken dialects (R. Vasu, personal communication) where imperative forms of causative verbs do not occur, unless the causative marker has already been phonetically assimilated, e.g., LT kaanip 'cause to see, show' can occur in ST because it is already reduced (by some other probably post-lexical rules) to [kaami]. But past forms, such as those indicated here, do occur: [kaamicidaanum] 'one must definitely cause (s.o.) to see (s.t.)'. In such dialects, (or perhaps indeed in all dialects), vdel has to occur at an earlier stage than in those we are treating. Furthermore, in such dialects there are lexical substitutions; for terisi 'inform' in the imperative, solila 'say-compl.' might be used; for anuppavu, anuppivaiy 'send-futut.' would be more likely.

6 There are some speech samples that could be either ST or LT, so it is the evidence of the application of certain phonological
Table 1  
Environments for -v- Deletion (vdel)

<table>
<thead>
<tr>
<th>Applies</th>
<th>Does not Apply</th>
</tr>
</thead>
</table>
| 1. Inflection                                | Future: poo-v-een 'go-fut.-l'  
anuppu-v-aan 'send-fut.-he'  
kuuṭṭikku-varu-v-linga 'bring-s.o.-fut.-you' |
| 2. Derivation                                | Deverbal Nouns: sela-v-u  
vara-v-u 'income'  
mudi-v-u 'decision' |
| 3. Causative                                 | Past: anuppu-Ø-cc-een  
Imperative: anuppuvi  
teri-v-i, etc. |
| 4. Verbal Compounding:                       | konḍu-aa 'bring s.t.'  
kkuṭṭikku-vaav 'bring s.o.'  
but not: *kuuṭṭikkuṭtaa |
| 5. Aspect:                                    | vb. + ōidu 'completive.'  
 vb. + vidu 'let' |
| 6. Sandhi loc. case: amerikaa-Øle  
'America-in'                                   | (also: amerikkaav-uле)  
ibid.  
dat. case: amerikaa-v-ukku  
'America-to'  
clitics: emphatic ee: irukka-v-ee  
'to be-certainly'  
dubitative oo: irukka-v-oo  
'to be-whether ('to be or not (to be)')  
terrogative aa: amerikaa-v-aa?  
'America?' |
| 7. Modals:                                    | Infinitive + Modal:  
irukka-num 'must be'  
(unbound) modal:  
vee-num 'must, should, want, need' |
| 8. Neg. Modals:                               | vee-ndaam 'not wanted, needed'  
irukka-veenḍaaam 'must not be, shouldn’t be' |

In LT it is evident that some kind of labial glide is needed underlyingly, but it is by no means the case that all instances of surface [v] can be derived from the same source, i.e., are underlyingly the same, either in LT or in ST. When [v] occurs at the left edge of a morpheme in isolation, it is obvious that it is underlyingly a glide (in both norms) and not a stop.\(^7\) What the underlying source of [v] might be when occurring intervocalically (the only other environment it occurs in) is therefore the

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\(^7\) I realize that many researchers prefer to treat surface [v]s as being underlyingly [w], but no one so far has argued that rules, or the presence of morphological forms that Tamil [v] (or [w]) might be underlyingly a vowel, i.e., [u], and I am not arguing this either.
crux of this study, and one source that we need to consider is /p/.

It has long been noted that Tamil has no underlying contrast between voiced and voiceless stops (voiced stops occur after nasals or intervocically) and non-coronal stops are laxed to glides or flaps intervocically. Thus there is a regular pattern of progressive lenition (this is obviously post-lexical, since it is a gradient) from a voiceless stop to a voiced stop to a glide-fricative. In the labials this means that underlying /p/ has surface realizations [p], [b], [β], and [v]. But [v], unlike other fricatives, occurs in positions other than intervocalic, i.e., it does occur in initial position even in native Dravidian words, such as [vaa] ‘come’. Any other Tamil word with a fricative in initial position (other than [v]) would have to be borrowed.

In assimilated (Tamilized, nativized) loan words from Indo-Aryan, phonetic [p] and [b]s often become [v], e.g., upādhya ‘teacher’ is vaatyaar (or vaadyaar), rūpa ‘form, image’ is uruvam, etc. But less-assimilated (more recently borrowed) items with intervocalic [p] or [b] usually retain a stop, i.e., [b]. For example, apāya ‘danger’ is abaaayam rather than *[avaaayam]; rūpāyi ‘rupee’ is [ruuvaay], not *[ruuvaay]; and rūpa ‘form’ is also reborrowed as ruubam. This may vary in speech styles, so that I.A. kōpa ‘anger’ may be [koobam] in LT but [koob] in ST.

Now, if we look at the morphology of LT, we find numerous examples where [p] alternates with [b] after a nasal, and [v] intervocalically. LT (and ST) verbs can be roughly categorized into two classes on the basis of the shapes of the tense-markers affixed to verbs; the terminology used is ‘strong’ (STR) versus ‘weak’ (W), with a small number of ‘middle’ verbs. In the present and future tenses, strong verbs show a tense marker that contains (minimally) a geminate (hence voiceless) consonant. In the present this is kki and in the future pp. In weak verbs the tense markers show only a single consonant: k̪ in, and in the future, v. The weak/strong classification often correlates with differences in transitivity, so some verb stems can show both weak and strong markers, as in table 2.

The weak/strong distinction is expressed with the same tense-lax consonantal contrasts in other areas of Tamil morphology, and it is in some of these that we can find crucial examples related to intervocalic vdel. These two other areas are in derivational morphology (deverbal nouns) and in the causative formation. For example, in deverbal nouns, the morphology of the future is replicated with the same tense-lax allomorphs: strong verbs tend to show pp and weak verbs v, as in patippu ‘study, education’ from pati ‘(to) study’ (STR), vs. selavu ‘outgo, expense’ from LT cel ‘go’ (W).

Similarly, derived causatives also show morphology that parallels (or is modeled on) the morphology of the future tense formation: the causative morpheme for strong verbs is ppi, that for middle verbs (those that end in a nasal consonant) is pi, and that for weak verbs is vi; these are suffixed directly to the verb stem. Examples are nada-ppi, ‘cause to run’ (STR, from nada ‘walk’); kaan-pi ‘show, cause to see’ (MIDDLE, from kaan ‘see’); and teri-vi ‘cause to know; inform’ (W, from teri ‘know’).

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8 See, for example, Caldwell 1961: 138, Schiffman 1975: 72, or Christdas 1988: 134ff.
9 The reason for constantly bringing in evidence from LT is that the LT writing system unambiguously represents a contrast between labial stops (/p/ and its various surface phonetic realizations) and a labial glide [v], but it does not (and cannot) systematically represent contrasts between velar stops, e.g., and a velar fricative [b], except by recourse to borrowed graphemes. These borrowed graphemes, however, are never used to represent sounds in native Dravidian words, even if they are phonetically identical. Thus the fact that Tamil orthography distinguishes between /p/ and /v/, but not /k/ and /b/ is significant.
10 Christdas 1988: 137 also shows variation in intervocalic /p/: she gives [koob] for ‘anger’ but [laab] for ‘profit’, explaining the difference as dependent on speech style and recency of borrowing. R. Vasu (personal communication) points out that the pronunciations [ruuvaay] and [avaaayam] are heard primarily in uneducated or low-prestige dialects.
11 Again, for evidence of historical morphology, and in some cases, of possible underlying forms of ST morphemes.
12 In ST the situation is somewhat different; the strong verb tense markers are kkr and pp, but the weak verb tense markers are r and v. The simplification of LT k̪ to r is the result of a phenomenon parallel to intervocalic vdel, namely, intervocalic -k/- deletion, since /k/ in this position is phonetically [h] or [γ]. As with intervocalic -v- deletion, the whole syllable ki (phonetically [hi], even in LT) is simplified historically (deleted), leaving only /r/ as the present tense marker in weak verbs.
13 I have tried to deal with the problem of deverbal nominalization in an unpublished paper: Schiffman 1989 ms. The question of the productivity of this kind of derivation is not obvious.
14 Causative formation is a separate issue from the question of transitivity, and also separate from the issue of STRONG; as we shall see later, this is crucial to the differential deletion of the [v].
15 Phonetically, this is [bi]; kaan-pi ‘show’ is phonetically [kaanbi] in LT, [ka:mi] in ST.
16 But recall that derived causatives based on weak stems are themselves STRONG.
Table 2
Weak and Strong Tense Markers

<table>
<thead>
<tr>
<th>Verb Stem</th>
<th>\textit{W kir}</th>
<th>\textit{Str kkip}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. \textit{udai} 'break'</td>
<td>\textit{udai-kir-atu} 'it breaks'</td>
<td>\textit{udai-kkip-atu} 'it breaks (s.t.)'</td>
</tr>
<tr>
<td>2. \textit{ceer} 'join'</td>
<td>\textit{ceer-kir-atu} 'it joins'</td>
<td>\textit{ceer-kkip-atu} 'it joins (s.t.)'</td>
</tr>
<tr>
<td>3. \textit{piri} 'separate'</td>
<td>\textit{piri-kir-atu} 'it separates'</td>
<td>\textit{piri-kkip-atu} 'it separates (s.t.)'</td>
</tr>
</tbody>
</table>

ST Weak and Strong Future Tense Markers

<table>
<thead>
<tr>
<th>Verb Stem</th>
<th>\textit{W v}</th>
<th>\textit{Str pp}</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. \textit{ceer} 'join' (intr.)</td>
<td>\textit{seeru-v-ee} 'I will join'</td>
<td>\textit{see-pp-ee} 'I will join s.t.'</td>
</tr>
<tr>
<td>5. \textit{ceer} 'join' (tr.)</td>
<td>\textit{poo-v-ee} 'I will go'</td>
<td>\textit{iru-pp-ee} 'I will be'</td>
</tr>
<tr>
<td>6. \textit{poo} 'go'</td>
<td>\textit{anuppu-v-ee} 'I will send'</td>
<td>\textit{nada-pp-ee} 'I will walk'</td>
</tr>
</tbody>
</table>
| 7. \textit{iru} 'be located' | \textit{padi-pp-ee} 'I will study' | \textit{aaka} 'especially for', and the emphatic clitic \textit{taan}. This example raises the question of whether certain derived nouns are 'lexically prime' or are derived by grammatical rules that operate within the lexicon.\textsuperscript{18} Whatever the case may be, such forms appear post-lexically with their intervocalic `-v-`s intact, even if at some stage in the lexicon, intervocalic \textit{VDEL} is seen to apply. If this seems paradoxical, it may be explained by proposing that at the stage that intervocalic \textit{VDEL} applies (in whatever stratum or wherever), these segments are not the intervocalic glides, i.e., [v],s, that they later appear on the surface as. The likeliest form for them, given their strong/weak alternation with geminate [pp], is of course [p].\textsuperscript{19} That is, however deverbal derived nouns begin life,\textsuperscript{20} they are specified in the lexicon as containing labial stops: e.g., \textit{selavu} 'expense(s)', and \textit{varavu} 'study'.

\textsuperscript{17} Note that imperative forms are identical in most cases to verb stems and are in fact the forms to which inflections are added. Some speakers do not use the imperatives of causative verbs, and must substitute other lexical items for the imperative; but such speakers do have the aspectually marked forms we are considering.

\textsuperscript{18} The form \textit{selavu} is problematical because it is used in ST, but the verbal root it is derived from, \textit{cel} 'go' is not in use in ST, only in LT. If \textit{selavu} is to be considered as derived, one would think that it must surely be derived from something that is actively in use elsewhere in the lexicon of modern Tamil. Otherwise it must be considered to be fully lexicalized, not produced by the lexicon.

\textsuperscript{19} This is the solution chosen by Christdas (1988: 382).

\textsuperscript{20} To use Mohanan's analogy (1986), before they enter the 'word factory'.
derived nouns inflected for case

<table>
<thead>
<tr>
<th>Derived Nouns Inflected for Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. anda selavu-kk-aakat-taan adu veenum</td>
</tr>
<tr>
<td>2. 'I need it for those expenses in particular.'</td>
</tr>
<tr>
<td>3. ('those expense-DAT-FOC-EMPH that need')</td>
</tr>
</tbody>
</table>

- 'income', are underlingly /celap/ and /varap/ respectively, with lenition to [v] either late in the lexical derivation or in the post-lexical component itself.21

- The question of whether all 'derived' nouns in Tamil can be shown to be derived by the lexicon is not settled in my mind. As I have shown in my 1989 paper, deverbal nominalization is not a simple and automatic process. Although it is certainly not as regular and quasi-inflectional as grammarians such as Arden (1942: 219–27) state, it is also not totally unproductive. If we can treat deverbal nominalization as on a continuum from unproductive (therefore totally lexicalized) to productive (e.g., deverbal nominalization in the formation of Tamil computer terminology, deals with in Schiffman 1989), we can treat selavu as lexicalized (underlingly /celap/, of course), but others as producively derived. Whatever the case may be, if there is a rule of vdel in the lexicon, it must either precede lenition (which anyway, being gradient and 'automatic', applies in the post-lexical component) or else applies in highly specified morphological environments and domains. In fact all of these may be the case, and we may perhaps say that if vdel precedes lenition, then vdel operates only on /v/s that are underlying glides, i.e., are /v/ at the earliest and deepest level of the phonology. vdel will not operate on [v]s that are still un laxed, i.e., are still /p/s. These become [v] by the later rule of lenition.

3.1. The Underlying Representation of Spoken Tamil

- We have seen examples above of vdel applying to aspectual verbs and verbal compounds where [v] occurs at the left edge of the morpheme. The question of whether v- is deleted in certain aspectual verbs when affixed to main verbs is dependent on two questions:

Do the aspectual verbs -vidu 'compleitive' and -vaiyi 'future utility'22 underlingly contain an initial v-?23

- Are aspectual morphemes derived by the syntax or are they part of the inventory of grammatical (inflectional) or derivational morphology?

- The first question is linked to the issue of whether ST must take as its underlying forms what are essentially the surface forms of LT. LT, as already mentioned, does not show evidence of vdel, though it does show lenition; that is, the spelling pronunciation of LT shows lenition: the LT form pookireen is pronounced [po:hire:n], not [po:ki:re:n]. If LT forms underlie ST forms, then one notable difference is that ST forms lack certain /v/s that LT has; this would mean that ST has deleted them. I have never taken the position that we must take LT forms as underlying forms of ST (although it has been attributed to me).24 If we were under

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21 The final [u], phonetically [u], is supplied by a very late (post-lexical) rule (Bright 1975). The evidence he adduces rests upon the observation that if utterance-final epenthetic [u]s were underlying, they would have to be deleted before all morphemes that are added in inflection. They also do not occur as frequently in rapid speech, but do occur regularly with borrowed lexemes in predictable environments: English 'bus' is borrowed as [bassut], etc. We also follow the principles in Mohanan (1986: 9–10), according to which a rule application requiring morphological information is in the lexicon, while a rule application across words is post-lexical. Christdas (1987) describes a rule of epenthesis ("Epenthesis I") "that inserts a V-slot following obstruent-final stems."

22 In ST, -vaiyi is also used as a causative verb, replacing the LT formations involving suffixation of -ppi and -vi for many speakers.

23 These two aspectual verbs behave differently, since the initial v- of -vaiyi 'future utility' is never deleted at any stage by vdel, whereas the v of compleitive -vidu always is deleted by the rule of vdel. This is problematic for our analysis; but it seems to me that the freedom of occurrence of -vidu 'compleitive' is much greater than that of -vaiyi, as many researchers have noted. -vaiyi can only occur with transitive verbs, for example. Some researchers have therefore proposed a 'core' aspectual system that is much more regular (and in terms of our analysis, would even approach the regularity of inflection), whereas aspectual verbs such as -vaiyi are relegated to an outer area of unpredictability.

24 Christdas (1988) seems to conclude that I propose LT forms as the underlying forms of ST, whereas what I was actually proposing (Schiffman 1979: 4) was a pedagogical shortcut for getting from LT to ST for learners who only know LT. I would claim that the rules stated in Schiffman 1979 are historical rules; some of them may be morphophonemic rules, and some are clearly post-lexical last-stratum rules. In this last category would belong the nasalization rule, which converts sequences of vowel plus [m] or [n] to [v] in final position.
some compulsion to take LT forms as underlying ST, we would then have a clear case of contrast between VDEL and non-VDEL, since the -v- of the aspectual verb (v)idu undergoes VDEL, but the lexical verb25 vidu ‘leave, let’ does not.26

Crucial in the discussion of whether VDEL applies to aspectual (v)idu is the question of the underlying form of this morpheme. I have assumed that it does contain an underlying initial -v- for the following reasons. In many dialects, the vowel preceding the retroflex stop is phonetically [a], [u], or [u] even if the v- is missing. Somewhere in the phonology of Tamil there is needed a rule of Rounding,27 which replaces front vowels with back rounded vowels in the environment of an initial labial consonant and a retroflex consonant immediately following; Rounding does not occur when other consonants (or nothing) precede it. Thus the lexical verb vidu28 ‘leave, let’ is often pronounced [vud] in casual speech. But the LT noun idam ‘place’ never undergoes Rounding since it lacks an initial labial consonant. It undergoes lowering in ST ([ed])o, but never rounding/backing ([o]dō). It is therefore phonetically different from aspectual (v)idu after VDEL. Furthermore, in some dialects, when aspectual (v)idu follows an adverbial participle that itself ends in retroflex /i/, the intervening vowel is longer and more rounded than if no underlying v- were present. That is, a form like saappitt+(v) itteen may be phonetically [sa:pitutte]. For these reasons I represent aspectual (v)idu with parentheses around the -v-, to indicate that the parenthetical -v- is deletable.

If we do not take LT forms as underlying (at some stage, anyway) the forms of ST, then we can eliminate from our discussion many ST forms that lack intervocalic -v- where LT has it, and never show any evidence of having had it synchronically. Thus in forms like the negative conditional,29 which has the LT form -aavithu, contrasting with the ST form -aattu, we simply treat the ST form as having undergone the historical intervocalic VDEL rule. The fact that the LT negative conditional morpheme contains what is usually considered to be a form of the aspectual verb vithu then has no relevance to the discussion. We can then characterize VDEL as a historical rule that has applied at some stage in the history of Tamil, but we still have to explain the VDEL in a number of the other forms already mentioned. Table 4 illustrates the contrasts between LT and ST realizations of VDEL.

Nevertheless, VDEL must be considered to be a phonological rule of ST, even if we do not allow every historical instance of it to have a “free ride” on the VDEL rule. It would be convenient if we could show that, within the cycles and strata that constrain rule application within the LP model, there was a convenient word-internal (or at least pre-bracket-erasure) application of the VDEL rule explaining the difference between aspectual vidu and lexical (v)idu with regard to VDEL. There may be some evidence for this from the development of the form kondua ‘bring (s.t.)’ from kondu-vaa ‘ibid.’. That is, as kondua has become lexicalized (i.e., the word boundary between kondu ‘having brought’ and vaa ‘come’ has become erased), -v- has apparently been deleted. If this process is similar to the process of aspectual marking in verbs, we could show that lexicalization is the end product of a lexicalization process, such as derivation, so that it can be considered to occur word-internally. That would make it different from the simple syntactic concatenation of the same lexical verb with the lexical verb -vidu. That is, we would have to claim that they are bracketed differently, as follows: (1) [naan pustakatte koduttu] vitten ‘I gave (s.o.) the book and left.’ (2) [naan pustakatte koduttuteen] ‘I gave the book away.’

In (1), the verbs kondu ‘give’ and vidu ‘leave, let’ are separate and have their origins in separate verb phrases. In (2), there is a lexical verb kondu ‘give’ followed by the aspectual verb (v)idu and there has been a process of lexicalization or derivation that has preceded bracket-

25 Annamalai (1985) holds that even lexical -vidu has some aspectual characteristics, but this makes the analysis of aspect even more problematical. I would say that there are perhaps two aspectual verbs alongside the lexical verb, but then we will have to propose different kinds of aspect, or different degrees of aspectualization, one that happens before VDEL and another that happens after it. Further evidence for different kinds of (or different degrees of) aspectualization is the lack of VDEL in the aspect-marker vayi ‘future utility’.

26 See example 5 in table 1.

27 One would assume that it would have to be in the postlexical component, since it is gradient, i.e., there is no underlying contrast between [a], [u], and [u]. But if it is postlexical, there would be no [v] to trigger it, so it may have to apply in the lexicon as well.

28 Many more examples are given in Schifman 1979: 8.

29 One could also note the examples of any LT simple negative verb, such as pooka-v-illai ‘doesn’t didn’t go’, which contrast with the ST equivalents (e.g., pooka-le ibid.) in always lacking the intervocalic v. There are also such examples as the oblique forms of the word ellaam ‘all (things)’, which have an intervocalic v in LT (ellaam-vattikkum ‘to all things’) but lack it in ST (ellaam-ttikkum ibid.). See figure 4 for contrasts of these sorts.
### Table 4
LT and ST Compared in Terms of $v_{del}$

<table>
<thead>
<tr>
<th>Literary Tamil</th>
<th>Category</th>
<th>Gloss</th>
<th>Spoken Tamil</th>
</tr>
</thead>
<tbody>
<tr>
<td>pooka-v-illai</td>
<td>Negative</td>
<td>'didn't go'</td>
<td>pookale</td>
</tr>
<tr>
<td>pookaatiṭṭaḷ</td>
<td>Negative Conditional</td>
<td>'if s.o. didn't go'</td>
<td>pookaatiṭṭaḷ</td>
</tr>
<tr>
<td>viraa-v-oō</td>
<td>Sandhi</td>
<td>'a festival, perhaps'</td>
<td>viraa-v-oō</td>
</tr>
<tr>
<td>pooyiṭṭeeṇ</td>
<td>Compl. Aspect</td>
<td>'I def. went'</td>
<td>pooyiṭṭeeṇ</td>
</tr>
<tr>
<td>pookaviṭṭeeṇ</td>
<td>Syntax, Lexical verbs</td>
<td>'I let (s.o.) go'</td>
<td>pookaviṭṭeeṇ</td>
</tr>
<tr>
<td>selavu</td>
<td>Derived Nouns</td>
<td>'expense'</td>
<td>selavu</td>
</tr>
<tr>
<td>pooveen</td>
<td>Inflection (fut.)</td>
<td>'I will go'</td>
<td>pooveen</td>
</tr>
<tr>
<td>kuṭṭikontu-vaa</td>
<td>Lexicalization</td>
<td>'bring (s.o.)'</td>
<td>kuṭṭikontu-vaa</td>
</tr>
<tr>
<td>koṇṭu-vaa</td>
<td>Lexicalization</td>
<td>'bring (s.t.)'</td>
<td>koṇṭu-vaa</td>
</tr>
</tbody>
</table>

3.2. Variability of $v_{del}$

Let us now look in some detail at unpredictable variation in $v_{del}$.

1. $v_{del}$ in the ‘word’ koṇṭaa31 ‘bring (something)’ is optional or at least variable. Many speakers have both this form and the more formal (LT-like) koṇṭu-vaa. In many dialects, $v_{del}$ does not apply in the word kuṭṭikontu-vaa ‘bring someone’;32 but in others, an even more radically reduced form, kuṭṭiyya, does occur. If the $v_{del}$ rule is post-lexical, it would have to be conditioned by factors several syllables away from the immediate environment (the left edge of vaa because what precedes it cannot be the conditioning factor); otherwise it would have to ‘see’ that the object of the verb is animate rather than inanimate, since this is what conditions the choice of koṇṭu-vaa rather than kuṭṭikontu-vaa as the lexical item meaning ‘bring’. I have no explanation either for the lack of operation of $v_{del}$ or the more radical deletion that gives us kuṭṭiyya, ibid.

2. $v_{del}$ occurs before the locative case marker -le (which is probably underlingingly -ilee, from LT il + ‘emphatic’33 ee) after (usually) long vowels, as in amerikkaavle34 alternating with amerikkaale. $v_{del}$ is even more likely before the ablative.

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30 Previous analyses of aspectual-marking in Dravidian, e.g., my own (Schiffman 1969), or Steever 1983, have assumed that it is a syntactic process; no one has ever proposed that it might be derivational.

31 The two morphemes involved are koṇṭu, the past participle of the LT lexical verb koḷ (its ST form is defective, but if it did occur it would have to be listed as koḷaḷu), meaning ‘hold, contain’, plus the lexical verb vaa come; the literal meaning is thus ‘hold and come’, i.e., ‘bring (s.t.).’ An analogous form with the verb poo ‘go’, i.e., koṇṭupoo means ‘hold and go’ or ‘take (s.t.).’

32 In LT this form would be kuṭṭikontuva; the change from koṇṭu to kiṭṭu is not regular or predictable; if anything, clusters like nj change to geminate nasals: nn.

33 I object to this notion, preferring an analysis of ee here as a morpheme meaning ‘semantically locative’, since it appears on all such ‘semantically locative’ morphs in ST.

34 This form contains a [v] inserted by sandhi before the underlying ilee, but in rapid speech there is a tendency for short vowels in multisyllabic words to undergo deletion; the sandhi [v] is then found in a cluster with [l] and itself may be subject to deletion.
which is based on the locative morpheme le + (r)ndu (LT iruntu ‘having been’): amerikka-
le(r)ndu.

4. ASPECTUAL VERBS

We have already touched upon the problem of how to deal with aspectual verbs in the morphology and syntax of Tamil. There have been many studies of aspectual verbs in Tamil and other Dravidian languages in the last two decades, but most treatments have been concerned with the syntax and semantics of the aspectual system, and few if any have dealt specifically with the phonological phenomena involved.35

A related problem is the question of what one might call ‘derived verbs’, that is, verbs that are made up of what are historically two separate lexical verbs, concatenated by syntactic juxtaposition and then lexicalized as one word. The examples of verbs meaning ‘bring’ mentioned above are relevant here. Such lexicalizations are rare, but lexicalizations through verb-compounding involving an aspectual verb are more common. In LT, many two-morpheme syntactic concatenations occur only as one-morpheme compounds in ST. There is little said about this in the literature, but many examples could be adduced. (For treatments of Tamil aspect, see Schiffman 1969, Steever 1983, or Annamalai 1985.)

The aspectual verbs that participate in such compounding in ST are koo ‘self-benefactive’,36 vidu ‘compleitive’37 and vaiyi ‘do for future use’.38 Iru, which is homophonous with the copula, is used aspectually in three different ways: as a marker of perfect tense, as a marker of epistemic, and as a marker of current relevance (Schiffman 1969, Annamalai 1985). In ST, many of the compounds found in LT cannot occur without the aspectual verb suffixed, so the semantic boundary between the lexical verb and the aspectual verb is blurred (bracket erasure?). The ST verbs now have simple lexical meaning, without any aspectual notions. In some cases, the original lexical verb alone is still in use in ST, but the compounded form has a different lexical meaning. Examples of ST verbal compounds compared with LT aspectually marked verbs are shown in table 5.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>LT and ST Compared in Terms of Aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT, ST verbs</td>
<td>Gloss</td>
</tr>
<tr>
<td>LT karrik-kol</td>
<td>‘learn for one’s own benefit’</td>
</tr>
<tr>
<td>ST kattukko</td>
<td>‘learn (and retain)’</td>
</tr>
<tr>
<td>LT kaattuk-kol</td>
<td>‘wait for (s.o.)’</td>
</tr>
<tr>
<td>ST kaattukko</td>
<td>‘wait’</td>
</tr>
<tr>
<td>LT erunt-iru</td>
<td>‘arise and remain standing’</td>
</tr>
<tr>
<td>ST erundiru</td>
<td>‘arise, get up from bed’</td>
</tr>
<tr>
<td>LT vaittu-vitv</td>
<td>‘place (compl.)’</td>
</tr>
<tr>
<td>ST vaccidu</td>
<td>‘put away, store’</td>
</tr>
<tr>
<td>LT paarttu-kol</td>
<td>‘see to one’s own affairs’</td>
</tr>
<tr>
<td>ST paattukko</td>
<td>‘watch out’, ‘watch over s.o.’</td>
</tr>
<tr>
<td>LT tallivai</td>
<td>‘push away, off’</td>
</tr>
<tr>
<td>ST tallivaiyi</td>
<td>‘postpone, put off for later’</td>
</tr>
</tbody>
</table>

5. CAUSATIVE

We have seen that derived imperative (i.e., stem) forms of the (w) causative verbs regularly show the -v- (the marker of derived weak causatives), but inflected forms, e.g., the past or the infinitive, do not.39 It is possible to demonstrate the differential application of some of these rules in some forms where derived causatives have been further aspectualized and syntactically suffixed with modal verbs and/or the future; these morphemes are crucial because they either contain surface [v] in isolation and/or on the surface, but may be underlyingly different (/v/ or /p/). To derive them correctly we need to show how forms are derived with or without

---

35 Indeed, all these analyses have treated aspect-marking as a syntactic phenomenon, and not as derivational or inflectional. This is probably because in Literary Tamil the tradition has been to deal with this as syntax, because the phonological processes we have been discussing do not apply, because aspect is less complex in LT, and because the Tamil grammatical tradition has analyzed aspectual verbs as a variant of the lexical verbs they phonologically resemble. Arden and other missionary grammarians saw aspectual verbs as lexical verbs used “idiomatically.”

36 Referred to in grammars of LT as the reflexive verb or the ‘middle’ verb.

37 Arden (1942: 282ff.) calls this an “intensive” verb.

38 An example of a lexicalized compound is taliivaiyi ‘postpone’, from tallu ‘push, shove’ and vaiyi ‘do at a future or later date’.

39 Recall that imperative forms are identical in most cases to verb stems and are in fact the forms to which inflections are added. LT forms show the /v/s, and addition of past tense for-atives never otherwise have any effect on the consonants of preceding syllables, either in ST or LT.
Table 6
Differential Deletion of [v] in Derived Weak Causatives

<table>
<thead>
<tr>
<th></th>
<th>avar</th>
<th>-e</th>
<th>dairekṭar</th>
<th>kitṭe</th>
<th>anupp</th>
<th>vi</th>
<th>nga</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>he</td>
<td>ACC</td>
<td>Director</td>
<td>to</td>
<td>send</td>
<td>CAUSE</td>
<td>POL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Send him to the Director’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>avar</td>
<td>-e</td>
<td>dairekṭar</td>
<td>kitṭe</td>
<td>anupp</td>
<td>vi</td>
<td>num</td>
</tr>
<tr>
<td></td>
<td>he</td>
<td>ACC</td>
<td>Director</td>
<td>to</td>
<td>send</td>
<td>CAUSE</td>
<td>MODAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘One must send him to the Director’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>avar</td>
<td>e</td>
<td>epaḍiyaavadu</td>
<td>anupp-</td>
<td>θ</td>
<td>ccuḍa</td>
<td>num</td>
</tr>
<tr>
<td></td>
<td>he</td>
<td>ACC</td>
<td>somehow</td>
<td>send</td>
<td>COMPL</td>
<td>must</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Somehow (we) must send him away.’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

-derived morphology, are subjected to various rules that must apply in the lexicon, then leave the lexicon to have rules apply post-lexically, and so on.

In the first and second examples in table 6, anuppuvigama ‘please (cause to) send’, and anuppuvikkanaum ‘one must (cause to) send’, the [v] is present, but in the third example, anupp-Ø-cci-danum ‘(someone) must cause to send away’, anupp-Ø-cci is morphologically past because it occurs before aspectual (v)idu, and the [v] of the stem is missing.

However, following Chrisdas, we have already established that the [v] of derived causatives escape VDEL because at the time it applies, they are still /p/s unaffected by lenition (e.g., anuppapi- for surface anuppavi ‘cause to send’). At some point between bracket erasure and the deletion of [v] in inflected forms of causatives, LENTION OCCURS: (lp/ → [v]). making [v] available for deletion (i.e., LENTION feeds VDEL). But since the future marker is also [v] in weak verbs, but underlyingly /p/ (Christdas 1988), LENTION must also apply after VDEL, or else it would feed VDEL with a [v]-marked weak future. This is shown in table 11.

Tables 7, 8, 9, and 10, show derivations of deverbal derived nouns (selavu ‘expense, outgo’), derived weak causatives (anuppavi ‘cause to send’), aspectually marked derived weak causatives (anuppuciddanum ‘one must definitely cause to send’), and future and aspectually marked derived weak causatives (anuppucidduveen). These all contain underlyingly /vs/ and /ps/, some of which emerge from the lexicon as [p] or as [v], while others are deleted.

Note that the derivation in tables 7 and 10 requires rules not hitherto discussed: (1) BACKING, which occurs between an initial labial consonant and a following retroflex consonant, must precede VDEL, since VDEL bleeds the environment it applies in; (2) PALAT, a palatalization rule that affects dental clusters after front vowels; (3) SV-DEL, a short-vowel deletion rule mentioned in connection with the ‘variable’ application of VDEL after (long) vowels in the locative and ablative;40 (4) CLSTREDUC, a cluster-reduction rule that simplifies consonant clusters that arise after SV-DEL; (5) NASALASSIM, the nasal assimilation rule that applies to clusters of nasal plus stop; (6) NASALIZ, which nasalizes final vowel + nasal sequences, and (7) FVOWSHORT, a rule that shortens final long vowels.

The derivation in table 10 contrasts with a similar form marked for future (table 7), in which the future retains its [v], because the last effect of LENTION of /p/ to [v] follows the last application of VDEL. This is an exceedingly complicated derivation, but it shows how a causative verb anuppui is derived from a bare stem anupp- ‘send’; it is then supplied with completive aspect, then with inflectional morphemes (future), and then has various automatic phonetic rules applied. It shows that LENTION must apply twice, but VDEL need only apply once, between the two applications of LENTION. This form is rife with morphemes that begin with /v/ underlyingly and are deleted in the first round, or where laxing from /p/ to [v] occurs on a second round, and therefore escape deletion (cf., in particular the future).

40 I do not yet know how to describe this rule adequately, since it does not delete all short vowels in a word; it may be
Table 7
Future of Aspectually-marked Weak Causatives

<table>
<thead>
<tr>
<th>Rules</th>
<th>Underlying Form</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement</td>
<td>[anuppuc[cduv]v]</td>
<td>syntax</td>
</tr>
<tr>
<td>Bracket Erasure</td>
<td>[anuppuc[cdudv]v]</td>
<td>post-cyclically</td>
</tr>
<tr>
<td>Surface</td>
<td>[amp[cdudv]v]</td>
<td></td>
</tr>
</tbody>
</table>

6. STRATA

I have yet to mention the question of word-formation strata in Tamil. As Christdas has shown,\textsuperscript{41} strict adherence to K. P. Mohanan's model for Tamil (based on treatment of parallel material, e.g., co-compounding and subcompounding in Malayalam) would result in seven strata for Tamil, which seems excessive. Instead, Christdas proposes another method that reduces the needed strata to two. It is also the case that Tamil now eschews word-formation processes involving borrowings from Indo-Aryan, which is a main source of complexity in the noun morphology in Malayalam (a linguistic culture that has no qualms about such borrowing). I do not see VDEL as giving evidence one way or another for strata in Tamil, since most of the problem areas are in verb-formation phenomena, rather than in nominal derivation. The problems associated with deverbal nominalizations (e.g., selavu) have been dealt with by positing underlying /p/s in these forms and in the causative and future formation. What remains is aspectualization in the verbal system, and a clear picture of how this would fit into a phonological grammar has yet to emerge. Aspect has always been viewed as something provided by the syntax of Tamil, but phonologically it seems to pattern with processes that must operate in the lexicon.\textsuperscript{42}

6.1. Evidence for Bracketing in Tamil Negation

One of the problematical areas of Tamil morphology has always been that of negative formation.\textsuperscript{43} The positive and negative forms of Tamil verbs are often quite

\textsuperscript{41} Christdas 1987 presents a table, shown in table 11.

\textsuperscript{42} The table in Christdas 1987 is a summary of rules elaborated for nominal derivation; she does not deal specifically with derivation, but does include a column for derivational morphology (der), which she calls "a cover term that includes diverse morphological processes such as several category-changing derivational processes, prefixation, a limited amount of inflection, as well as some compounding" (Christdas 1987: n.p.).

\textsuperscript{43} See, for example, Schiffman 1983, 1988.
Table 8
Ordering of \textsc{vdel}, \textsc{lenition} and \textsc{epenth}

<table>
<thead>
<tr>
<th>Rules</th>
<th>Underlying Form</th>
<th>Gloss</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket Erasure</td>
<td>(/[cela]-[p]/\</td>
<td>'go'+'Nderiv'</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{vdel}</td>
<td>[cela-p]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>\textsc{epenth}</td>
<td></td>
<td>n/a</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{lenition}</td>
<td></td>
<td></td>
<td>post-lex.</td>
</tr>
<tr>
<td>Surface</td>
<td>selavu</td>
<td>'expense'</td>
<td></td>
</tr>
</tbody>
</table>

Table 9
Ordering of Rules in Derivation of Causative Verbs

<table>
<thead>
<tr>
<th>Rules</th>
<th>Underlying Form</th>
<th>Gloss</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textsc{epenth}</td>
<td>(/[anupp-]-[pi] /</td>
<td>'send'+CAUS</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{vdel}</td>
<td>[anupp][i]-[pi]</td>
<td>'cause to send'</td>
<td>post-lex.</td>
</tr>
<tr>
<td>\textsc{lenition}</td>
<td></td>
<td></td>
<td>lexicon</td>
</tr>
<tr>
<td>Surface</td>
<td>anuppivi</td>
<td>'cause to send'</td>
<td>post-lex.</td>
</tr>
</tbody>
</table>

Table 10
Aspectually-marked Derived Weak Causatives

<table>
<thead>
<tr>
<th>Rules</th>
<th>Underlying Form</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket Erasure</td>
<td>[[[anuppupiti]-ttu][vid-ad][veen][um]]</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{vdel}</td>
<td>[[[anuppupici][vuda][veen][um]]</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{palat}</td>
<td>[[[anuppupicc][vuda][veen][um]]</td>
<td>lexicon</td>
</tr>
<tr>
<td>Bracket Erasure</td>
<td>[[[anuppupicci-cu][da][veen][um]]</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{vdel}</td>
<td>[[[anuppupicc-da][veen][um]]</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{lenition}</td>
<td></td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{vdel}</td>
<td>[[[anuppupicci-cu][da][veen][um]]</td>
<td>lexicon</td>
</tr>
<tr>
<td>\textsc{bracket erasure}</td>
<td>[anuppupicci-cu[da][vione][um]]</td>
<td>lexicon</td>
</tr>
<tr>
<td>Surface</td>
<td>[ampc\textsuperscript{can}u] 'must get-rid of'</td>
<td></td>
</tr>
</tbody>
</table>
different, ranging from something that can synchronically be analyzed as affixation (cf., the 'simple negative' forms mentioned in 1.1) to suppletive forms such as the negative forms of modals (e.g. kuudaadu 'should not, must not' is the negative of laam 'may'). There are also the negative forms shown in table 1, where the unbound positive forms of the modal veenum 'must, want, should, need' alternate with a post-infinitival (bound) form num, but the unbound negative form veendaam 'don't want, needn't' is identical to the bound allomorph that occurs post-infinitivally. This means that if negative forms of verbs are to be handled in the same part of the grammar, suppletion alone will dictate that negation must be in the lexicon, since no kind of phonological rule will be able to handle it. If this is the case, then the alternative forms of veenum (veenum and -num) are perhaps best dealt with as instances of suppletion, rather than of vdel, since it would again be hard to justify vdel as occurring in the environment [infinitive]...[modal] but not in the environment [infinitive]...[modal][negative].

On the other hand, there is a syntactic structure to Tamil negation such that differing scopes of negation result in different allomorphic outputs.44

That is, the bracketing [[[verb][must][negative]] gives the output 'verb' + veendaam, i.e., 'don't need to 'verb'; but the bracketing [[[verb][negative][must]] gives the output 'verb' + kuudaadu, i.e., 'mustn't' shouldn't 'verb'.' Provision of the proper forms requires being able to 'see' this bracketing in the lexicon and substitute the lexical item kuudaadu for [negative [must]], and veendaam for [must][negative]]; bracket erasure in the post-lexical component will eliminate the crucial structure that determines which negative form is needed, and will incorrectly insert the wrong morphemes. This definitely shows morphological sensitivity and pre-bracket erasure as crucial elements for the determining of the proper specification of Tamil negative verbs. Since vdel seems to operate on the positive bound allomorphs of veenum 'want, need, must' but does not apply to the negative form veendaam 'don't want, don't need', forms which must be chosen in the lexicon, vdel must be seen to operate in the lexicon, if not post-lexically as well.

However, in actual use, aspectually marked verbs are rarely negated. To a question containing an aspectually marked verb such as eppa vandu-itt-iinga? 'when did you come (completely arrive)?', the answer is usually with a 'plain' verb: neettu-daan vand-een 'I came yesterday.' This is not to say that aspectually marked verbs cannot be negated, but there are pragmatic and other considerations that argue against their practical use.45 Much more work appears to be needed in this area of Tamil syntax before negative formation can be used as a test for aspect-formation. On the other hand, neither can negation-formation problems be ignored, as they have mostly been in the past.

7. Conclusion

I think I have now established a number of points with regard to vdel in modern spoken Tamil.

1. Not all surface realizations of [v] are underlyingly glides; some are derived from underlying /p/ by a rule of lenition, independently motivated. This will explain why surface [v]s in causative verbs, future tense markers, and deverbal nominalizations of weak verbs are never deleted—they are underlyingly /p/ and only become [v] at a late stage. [v] in initial position, in contrast, must be considered to be underlying /v/, because the lenition rule cannot operate on segments on the left edge of a word.

2. Vdel operates on [v]s that may have been on the left edge of a word before bracket erasure, but are no longer in this position after bracket erasure. This rule is insensitive to morphological information, and will operate on [v]s that are underlyingly /p/, e.g., the causative, during inflection (if we take inflection to be post-lexical). But vdel must

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44 As I have tried to show in my two studies of negation in Tamil, Schiffman 1983 and Schiffman 1988.

45 Aspectually marked negative imperative forms are more common, for example: vand-ud-aade 'don't come, make a
precede *lenition* of future-marking, since no future (\(v\))s (underlyingly /p/) in weak verbs are ever deleted. This is still a difficult point, since it means that *lenition* would have to operate twice in the lexicon. However since tense inflection of strong verbs can be shown to operate in stratum 2 (as Christdas claims, see below), the derivations we have given in tables 7, 10, etc., seem to fit well with her analysis.

3. Choice of proper negative morphemes must be made in the lexicon, and must precede bracket erasure. Erasure of brackets removes information needed to determine whether *vdel* should or should not apply, so there is no choice but to have it done in the lexicon. This means that complex negative forms are part of Tamil morphology, rather than determined by syntax.

4. We can justify the claim that *lenition* occurs twice from evidence given by Christdas in her dissertation. It seems to occur once after level 1, and again sometime later (post-cyclically), after *vdel* has operated on laxed /p/s of causative verbs, but before the /p/s of the future have been laxated. Christdas claims that there are two levels in the phonology of Tamil, and that tense formation is spread over both levels (Christdas 1987: 434). That is, all tense formation of strong verbs (recall that derived causatives are all strong, even those derived from weak stems) and some past tense formations of some weak verbs (those in -nt, -nt, and -n) occur in level 1; others (especially for our purposes, the future) occur at level 2. The example Christdas gives for the derivation of the verb *moodu* 'push' (p. 438) shows that future-formation occurs at level 2, and *lenition* of the future /p/ occurs post-cyclically.

It seems safe to say at this point that *vdel* apparently operates quite regularly whenever *lenition* has produced (\(v\))s that find themselves, after bracket erasure, in intervocalic position. The real complexity lies in the operation of *lenition* and the specification of levels or strata in the morphology. Attempting to define the operation of just one rule in a Tamil grammar cannot be done without looking at many other rules; some of these rules have already been specified by Christdas (1987, 1988), but I am not prepared to say whether the rules I have elaborated belong in one strata or another. I see only that verbal morphology, especially derivational and aspectual morphology, requires a great deal of cyclicality to arrive at fully derived forms.

I had hoped at the outset to be able to prove definitively that aspectual marking of verbs is either derivational or inflectional. Since the morpho-syntax of aspectual verbs is not totally regular in the way inflection tends to be, I see it as more like derivation. We are, I think, forced to conclude that what previously had been handled as syntax, and never as morphology (derivational or otherwise), now seems clearly to be *word-internal*, based on the evidence from ST.\(^{46}\) The rules we have dealt with here are definitely in the lexicon, and cannot operate syntactically, since they require specification of categories that would not be available to the syntax. I thus agree with Jensen and Stong-Jensen that "morphology is in the lexicon" and that some syntax (or what used to be thought of as syntax) is also in the lexicon (Jensen and Stong-Jensen, 1984). Thus, what we learn about the operation of *vdel* and associated rules is not particularly earth-shaking as far as Tamil phonology is concerned. However, in terms of what it tells us about Tamil morphology and syntax, a new approach to aspectual verbs seems definitely required.\(^{47}\)

Finally, this analysis seems to reveal that given the necessity of post-lexical rules being automatic and gradient, the rule of *lenition*, though it must operate in the lexicon, may be a two-part process, since there are gradient outputs of some lenition processes. We may have to conclude either that there are two lenition rules, i.e., *lenition* 1 and *lenition* 2 (the former operating in the lexicon and the latter in the post-lexical component) or that there is only one, which operates in both components, but with gradient effects in the latter.

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\(^{46}\) One can, of course, continue to ignore the evidence by focussing only on LT data.

\(^{47}\) Interestingly, nothing in my account challenges the formulations and suppositions arrived at by Christdas (1986, 1988), which only strengthens the claims I am making about aspectual morpho-syntax.
REFERENCES


