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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 rely-

ing 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

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-

rived from the stem *nation* and having a different vowel quality, i.e., [æ], than the vowel in the latter) is affixed with *-ity*, stress shifts and so does vowel quality; but when *national* is affixed with *-ism*, no stress or vowel changes occur. Phonological theories that do not allow for such levels are hard put to explain these vowel and stress shifts. Note also that there needs to be a notion of cyclicity, such that the output of the rules can either be recycled through the first level (*nation* → *national* → *nationality*) or can form the input to the second level (*national* → *nationalism*).

All these processes must precede that part of morphology commonly called inflection, since inflection tends to be quite regular and applies to all appropriate categories, i.e., all count nouns can be inflected for plural (e.g., nationalisms, nationalities) regardless of how they have been derived.

Levels also help to differentiate morphological processes that are in effect dependent on borrowed vocabulary, since in many languages different sources of vocabulary have different word-formation processes and different morpho-phonemic rules. Thus in English, Latinate vocabulary exhibits word-formation processes, affixes, and rules that differ from Germanic vocabulary; Dravidian languages show differences dependent on whether the vocabulary source is Indo-Aryan or native Dravidian.

Finally it should be noted that there are also rules that apply after the lexicon, i.e., *post-lexically*. These are the kind of rules that apply everywhere, to all forms irrespective of their grammatical category, and have been referred to by some phonologists as “automatic.” These post-lexical rules also tend to be gradient, i.e., there are differing degrees of lenition, flapping, vowel-rounding, or whatever the process is, rather than an either-or situation.

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 v_{DEL} 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

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.

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.² As mentioned, on the surface the rule seems to apply after the second syllable, with various morphological exceptions, but this is oversimplistic.

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

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 intervocalically. 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.³ 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 (*vee*)*num* loses its -v- (and the following vowel) but the negative form *veeṇḍaam* 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

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 *kaanpi* '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: [*kaamicciṇum*] '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 *terivi* 'inform' in the imperative, *sollidu* 'say-COMPL' might be used; for *anuppuvi*, *anuppivaiyi* 'send-FUTUTIL' 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)

	Applies	Does not Apply
1. Inflection		Future: <i>poo-v-een</i> 'go-fut.-I' <i>anuppu-v-aan</i> 'send-fut.-he' <i>kuuṭṭikiṭṭu-varu-v-iinga</i> 'bring-s.o.-fut.-you'
2. Derivation		Deverbal Nouns: <i>sela-v-u</i> <i>vara-v-u</i> 'income' <i>muḍi-v-u</i> 'decision'
3. Causative	Past: <i>anuppu-∅-cc-een</i>	Imperative: <i>anuppuvi</i> <i>teri-v-i</i> , etc.
4. Verbal Compounding:	<i>koṇḍ-aa</i> <i>kuuṭṭiyaa</i>	<i>koṇḍu-vaa</i> 'bring s.t.' <i>kuuṭṭikiṭṭu-vaa</i> 'bring s.o.' but not: * <i>kuuṭṭikiṭṭaa</i>
5. Aspect:	vb. + <i>Ṭiḍu</i> 'completive.'	vb. + <i>viḍu</i> 'let'
6. Sandhi	loc. case: <i>amerikaa-Ṭle</i> 'America-in'	(also: <i>amerikkaav-ule</i>) ibid. dat. case: <i>amerikkaa-v-ukku</i> 'America-to' clitics: emphatic <i>ee</i> : <i>irukka-v-ee</i> 'to be-certainly' dubitative <i>oo</i> : <i>irukka-v-oo</i> 'to be-whether' ('to be or not (to be)') interrogative <i>aa</i> : <i>amerikaa-v-aa?</i> 'America?'
7. Modals:	Infinitive + Modal: <i>irukka-ṇum</i> 'must be'	(unbound) modal: <i>vee-ṇum</i> 'must, should, want, need'
8. Neg. Modals:		<i>vee-ṇḍaam</i> 'not wanted, needed' <i>irukka-veeṇḍaam</i> '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 intervocally (the only other environment it occurs in) is therefore the

rules, or the presence of morphological forms that are clearly LT or ST that allow us to decide which norm we have a sample of.

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 intervocalically) and non-coronal stops are lax to glides or flaps intervocalically.⁸ Thus there is a regular pattern of progressive LENITION (this is obviously post-lexical, since it is 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].⁹ 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]s and [b]s often become [v], e.g., *upādhyāya* '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 *abaayam* rather than *[avaayam]; *rūpāyi* 'rupee' is [ruubaa(y)], not *[ruuvaa]; and *rūpa* 'form' is also re-borrowed as *ruubam*. This may vary in speech styles, so that I.A. *kōpa* 'anger' may be [koobam] in LT but [kooβō] in ST.¹⁰

Now, if we look at the morphology of LT,¹¹ 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 *kkir* and in the future *pp*. In weak verbs the tense markers show only a single consonant: *kir* and, in the future, *v*.¹² 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 future¹³ is replicated with the same tense-lax allomorphs: strong verbs tend to show *pp* and weak verbs *v*, as in *paṭippu* 'study, education' from *paṭi* '(to) study' (STR), vs. *selavu* 'outgo, expense' from LT *cel* 'go' (W).

Similarly, derived causatives¹⁴ 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*,¹⁵ and that for weak verbs is *vi*;¹⁶ these are suffixed directly to the verb stem. Examples are *naḍa-ppi*, 'cause to run' (STR, from *naḍa* 'walk'); *kaaṅ-pi* 'show, cause to see' (MIDDLE, from *kaaṅ* 'see'); and *teri-vi* 'cause to know; inform' (W, from *teri* 'know').

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 [h], 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 [h] is significant.

¹⁰ Christdas 1988: 137 also shows variation in intervocalic /p/: she gives [kooβō] for 'anger' but [laabā] for 'profit', explaining the difference as dependent on speech style and recency of borrowing. R. Vasu (personal communication) points out that the pronunciations [ruuvaa] and [avaayam] 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 *kir* 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 [ɣ]. 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]; *kaaṅ-pi* 'show' is phonetically [ka:ṅbi] 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

LT Weak (W) and Strong (STR) Present Tense Markers		
Verb Stem	W <i>kir</i>	STR <i>kkir</i>
1. <i>uḍai</i> 'break'	<i>uḍai-kir-atu</i> 'it breaks'	<i>uḍai-kkir-atu</i> 'it breaks (s.t.)'
2. <i>ceer</i> 'join'	<i>ceer-kir-atu</i> 'it joins'	<i>ceer-kkir-atu</i> 'it joins (s.t.)'
3. <i>piri</i> 'separate'	<i>piri-kir-atu</i> 'it separates'	<i>piri-kkir-atu</i> 'it separates' (s.t.)'

ST Weak and Strong Future Tense Markers		
Verb Stem	W <i>v</i>	STR <i>pp</i>
4. <i>ceer</i> 'join' (intr.)	<i>seeru-v-een</i> 'I will join'	
5. <i>ceer</i> 'join' (tr.)		<i>see-pp-een</i> 'I will join s.t.'
6. <i>poo</i> 'go'	<i>poo-v-een</i> 'I will go'	
7. <i>iru</i> 'be located'		<i>iru-pp-een</i> 'I will be'
8. <i>anuppu</i> 'send'	<i>anuppu-v-een</i> 'I will send'	
9. <i>naḍa</i> 'walk, run'		<i>naḍa-pp-een</i> 'I will walk'
10. <i>paḍi</i> 'study'		<i>paḍi-pp-een</i> 'I will study'

It is in these two areas of the grammar, deverbal nominalization and causative formation, that we get differential vDEL. Imperative forms of the (w) causative verbs, if they occur at all (see below), show the present of -v-, but inflected forms like the past do not.¹⁷

This is obviously an area where the deletion rule is sensitive to morphological conditions, usually a tell-tale sign of lexical domain rather than post-lexical scope of the rule. However, we shall see that this rule must also operate post-lexically in some cases.

As for derived nouns they never show deletion of intervocalic -v-. Since the -v-s of derived nouns and imperatives are near the right edge of a word, it might be argued that the environment for deletion is somewhere in non-final syllable position. But both in the case of *anuppuvinga* 'please send' above, and when derived nouns are inflected for case and other affixes, this is not the environment.

In table 3, *selavu* 'expense(s)', a derived noun from LT *cel* 'go', is inflected for dative case, the postposition

aaka 'especially for', and the emphatic clitic *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.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 vDEL is seen to apply. If this seems paradoxical, it may be explained by proposing that at the stage that intervocalic 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].¹⁹ That is, however deverbal derived nouns begin life,²⁰ they are specified in the lexicon as containing labial stops: e.g., *selavu* 'expense(s)', and *varavu*

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.

¹⁸ The form *selavu* is problematical because it is used in ST, but the verbal root it is derived from, *cel* 'go' is not in use in ST, only in LT. If *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.

¹⁹ This is the solution chosen by Christdas (1988: 382).

²⁰ To use Mohanan's analogy (1986), before they enter the 'word factory'.

Table 3
Derived Nouns Inflected for Case

- | |
|--|
| 1. <i>anda selavu-kk-aakat-taan adu veenum</i> |
| 2. 'I need it for those expenses in particular.' |
| 3. ('those expense-DAT-for-EMPH that need') |

'income', are underlyingly /*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, dealt with in Schiffman 1989), we can treat *selavu* as lexicalized (underlyingly /*celap/*, of course), but others as productively 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.

²¹ The final [u], phonetically [w], 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 [bæssw], 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 1") "that inserts a V-slot following obstruent-final stems."

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 -*viḍu* 'completive' and -*vaiyi* 'future utility'²² underlyingly 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:kire: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

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 completive -*viḍu* 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 -*viḍu* 'completive' 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 [v̄] 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*)*iḍu* undergoes VDEL, but the lexical verb²⁵ *viḍu* 'leave, let' does not.²⁶

Crucial in the discussion of whether VDEL applies to aspectual (*v*)*iḍu* 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 [ʊ], [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 *viḍu*²⁸ 'leave, let' is often pronounced [vuḍʊ] in casual speech. But the LT noun *iḍam* 'place' never undergoes ROUNDING since it lacks an initial labial consonant. It undergoes lowering in ST ([eḍō]), but never rounding/backing ([*oḍō]). It is therefore phonetically different from aspectual (*v*)*iḍu* after VDEL. Furthermore, in some dialects, when aspectual (*v*)*iḍu* follows an adverbial participle that itself ends in retroflex *ṭ*, the intervening vowel is longer and more rounded than if no underlying *-v-* were present. That is, a form like *saappiṭṭ+(v) iṭṭeen* may be phonetically [sa:ppiṭṭu:ṭṭē]. For these reasons I represent aspectual (*v*)*iḍu* 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

²⁵ Annamalai (1985) holds that even lexical *-viḍu* 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 *vaiyi* '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 [ʊ], [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 Schiffman 1979: 8.

of having had it synchronically. Thus in forms like the negative conditional,²⁹ which has the LT form *-aaviṭṭaal*, contrasting with the ST form *-aaiṭṭaa(l)*, 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 *viṭu* 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 *viḍu* and lexical (*v*)*iḍu* with regard to VDEL. There may be some evidence for this from the development of the form *koṇḍaa* 'bring (s.t.)' from *koṇḍu-vaa* 'ibid.'. That is, as *koṇḍaa* has become lexicalized (i.e., the word boundary between *koṇḍu* '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 aspectualization 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 *-viḍu*. That is, we would have to claim that they are bracketed differently, as follows: (1) [[*naan pustakatte kuḍuttu*] *viṭṭeen*] 'I gave (s.o.) the book and left.' (2) [*naan pustakatte koḍuttu*]*ṭṭeen*] 'I gave the book away.'

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

²⁹ One could also note the examples of any LT simple negative verb, such as *pooka-v-illai* 'doesn't/did'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 (*ellaa-varṭukkum* 'to all things') but lack it in ST (*ellaa-tukkum* *ibid.*). See figure 4 for contrasts of these sorts.

Table 4
LT and ST Compared in Terms of vDEL

-v- Deletion (vDEL) in LT and ST			
Literary Tamil	Category	Gloss	Spoken Tamil
<i>pooka-v-illai</i>	Negative	'didn't go'	<i>pookale</i>
<i>pookaaviṭṭaal</i>	Negative Conditional	'if s.o. didn't go'	<i>pookaattāa</i>
<i>viṛaa-v-oo</i>	Sandhi	'a festival, perhaps'	<i>viṛaa-v-oo</i>
<i>pooyviṭṭeen</i>	Compl. Aspect	'I def. went'	<i>pooyṭṭeen</i>
<i>pookaviṭṭeen</i>	Syntax, Lexical verbs	'I let (s.o.) go'	<i>pookaviṭṭeen</i>
<i>celavu</i>	Derived Nouns	'expense'	<i>selavu</i>
<i>pooveen</i>	Inflection (fut.)	'I will go'	<i>pooveen</i>
<i>kuuṭṭikoṇṭu-vaa</i>	Lexicalization	'bring (s.o.)'	<i>kuuṭṭikṭu-vaa</i> (also:) <i>kuuṭṭiyaa</i>
<i>koṇṭu-vaa</i>	Lexicalization	'bring (s.t.)'	<i>koṇḍu-vaa</i> (also:) <i>koṇḍaa</i>

erasure, such that vDEL applies. The problem with using this part of morphosyntax for evidence in favor of certain phonological analyses is that the best evidence we have that the morphosyntax of aspectual verbs *is* in fact more like inflection or derivation comes from the phonological evidence, i.e., the intervocalic laxing or deletion of *v* and *k*. Thus, the argumentation tends to be circular.³⁰

3.2. Variability of vDEL

Let us now look in some detail at unpredictable variation in vDEL.

1. vDEL in the 'word' *koṇḍaa*³¹ 'bring (something)' is optional or at least variable. Many speakers have both this form and the more formal (LT-like) *koṇḍu-vaa*. In many dialects, vDEL does not apply

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 *koṇḍu*, 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 *koḷḷu*), 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., *koṇḍupoo* means 'hold and go' or 'take (s.t.)'.

in the word *kuuṭṭikiṭṭu-vaa* 'bring someone';³² but in others, an even more radically reduced form, *kuuṭṭiyaa*, does occur. If the vDEL 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 *koṇḍu-vaa* rather than *kuuṭṭikiṭṭu-vaa* as the lexical item meaning 'bring'. I have no explanation either for the lack of operation of vDEL or the more radical deletion that gives us *kuuṭṭiyaa*, *ibid*.

2. vDEL occurs before the locative case marker *-lee* (which is probably underlyingly *-ilee*, from LT *il* + 'emphatic'³³ *ee*) after (usually) long vowels, as in *amerikkaavle*³⁴ alternating with *amerikkaale*. vDEL is even more likely before the ablative,

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

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'): *amerikkaale(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 *viḍu* 'completive'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 rele-

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 *tallivaiyi* 'postpone', from *tallu* 'push, shove' and *vaiyi* 'do at a future or later date'.

Table 5
LT and ST Compared in Terms of Aspect

LT, ST verbs	Gloss
LT <i>karruk-koḷ</i>	'learn for one's own benefit'
ST <i>kattukko</i>	'learn (and retain)'
LT <i>kaattuk-koḷ</i>	'wait for (s.o.)'
ST <i>kaattukko</i>	'wait'
LT <i>eṟunt-iru</i>	'arise and remain standing'
ST <i>eṟundiru</i>	'arise, get up from bed'
LT <i>vaittu-viṭu</i>	'place (compl.)'
ST <i>vaccidu</i>	'put away, store'
LT <i>paarttu-koḷ</i>	'see to one's own affairs'
ST <i>paattukko</i>	'watch out', 'watch over s.o.'
LT <i>tallivai</i>	'push away, off'
ST <i>tallivaiyi</i>	'postpone, put off for later'

vance (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.

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

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 formatives 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

1.	<i>avar</i> he	-e ACC	<i>ḍairekṭar</i> Director 'Send him to the Director'	<i>kiṭṭe</i> to	<i>anuppu</i> send	vi CAUSE	<i>nga</i> POL
2.	<i>avar</i> he	-e ACC	<i>ḍairekṭar</i> Director 'One must send him to the Director'	<i>kiṭṭe</i> to	<i>anuppu</i> send	vikka CAUSE	<i>ṇum</i> MODAL
3.	<i>avar</i> he	<i>e</i> ACC	<i>eppaḍiyaavadu</i> somehow 'Somehow (we) must send him away.'	<i>anupp-</i> send	∅	ccəḍa COMPL	<i>ṇum</i> must

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, *anuppu-vinga* 'please (cause to) send', and *anuppuvikkanum* 'one must (cause to) send', the [v] is present, but in the third example, *anupp-∅-cci-ḍaṇum* '(someone) must cause to send away', *anupp-∅-cci* is morphologically past because it occurs before aspectual (*v*)*iḍu*, and the [v] of the stem is missing.

However, following Christdas, 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., *anuppupi-* for surface *anuppuvi* 'cause to send'). At some point between bracket erasure and the deletion of [v] in inflected forms of causatives, LENITION occurs: (/p/ → [v]), making [v] available for deletion (i.e., LENITION feeds vDEL). But since the future marker is also [v] in weak verbs, but underlyingly /p/ (Christdas 1988), LENITION 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 (*anuppuvi* 'cause to send'), aspectually marked derived weak causatives (*anuppucḍaṇum* 'one must definitely cause to send'), and future and aspectually marked derived weak causatives (*anuppuc-ḍiḍuven*). These all contain underlying /v/s and /p/s, 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 LENITION of /p/ to [v] follows the last application of vDEL. This is an exceedingly complicated derivation, but it shows how a causative verb *anuppuvi* 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 LENITION must apply twice, but vDEL need only apply once, between the two applications of LENITION. 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

Rules	Underlying Form	Domain
	[[[[[anuppupi]tt]vɪɖu]p]PNG]	lexicon
	'send'+CAUS+PST+COMP+FUT+1sg	
BACKING	[[[[[anuppupi]tt]vɪɖu]p]PNG]	
LENITION	[[[[[anuppuvi]tt]vɪɖu]p]PNG]	
Bracket Erasure	[[[[[anuppuvitt]vɪɖu]p]PNG]	
PALAT	[[[[[anuppuvitt]vɪɖu]p]PNG]	
Bracket Erasure	[[[[[anuppuvitt]vɪɖu]p]PNG]	
VDEL	[[[anuppuθcc-θuɖu]p]PNG]	lexicon
Bracket Erasure	[[[anuppuθcc-θuɖu]p]PNG]	lexicon
LENITION	[[[anuppuθcc-θuɖu]p]PNG]	
Agreement	[anuppuccɔɖuven]	syntax
Bracket Erasure	[anuppuccɔɖuven]	post-cyclically
SV-DEL	[an-pp-ccɔɖuven]	post-lex.
CLSTREDUC	[anpcɔɖuven]	post-lex.
NASALASSIM	[ampcɔɖuven]	post-lex.
NASALIZ	[ampcɔɖuveñ]	post-lex.
FVOWSHORT	[ampcɔɖuveñ]	post-lex.
Surface	[ampcɔɖuveñ]	

6. STRATA

I have yet to mention the question of word-formation strata in Tamil. As Christdas has shown,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

cyclic, and may perhaps be shown eventually to apply after BRACKET ERASURE.

⁴¹ Christdas 1987 presents a table, shown in table 11.

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.⁴²

6.1. Evidence for Bracketing in Tamil Negation

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

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.).

⁴³ See, for example, Schiffman 1983, 1988.

Table 8
Ordering of VDEL, LENITION and EPENTH

Rules	Underlying Form	Gloss	Domain
BRACKET ERASURE	/[cela]-[p]/	'go'+ 'Nderiv'	lexicon
VDEL	[cela-p]	n/a	lexicon
EPENTH	celapu		post-lex.
LENITION	celavu		post-lex.
Surface	selavu	'expense'	

Table 9
Ordering of Rules in Derivation of Causative Verbs

Rules	Underlying Form	Gloss	Domain
EPENTH	/[anupp-]-[pi] /	'send'+CAUS	lexicon
BRACKET ERASURE	[anuppu][-pi]	'cause to send'	post-lex.
VDEL	[anuppupi]	'cause to send'	
LENITION	n/a		lexicon
Surface	[anuppuvi]		post-lex.
Surface	<i>anuppuvi</i>	'cause to send'	

Table 10
Aspectually-marked Derived Weak Causatives

Rules	Underlying Form	Domain
	[[[[[anuppupi]ttu]viḍ-a]veeṅ]um]	lexicon
	'send'+CAUS+PST+COMPL+INF+MUST+pos	
BACKING	[[[[[anuppupi]ttu]vəḍa]veeṅ]um]	lexicon
BRACKET ERASURE	[[[[[anuppupittu]vəḍa]veeṅ]um]	
PALAT	[[[[[anuppupiccu]vəḍa]veeṅ]um]	lexicon
BRACKET ERASURE	[[[anuppupiccu-vəḍa]veeṅ]um]	
VDEL	[[[anuppupicc-əḍ]aveeṅ]um]	lexicon
BRACKET ERASURE	[[anuppupiccəḍaveeṅ]um]	
LENITION	[[anuppuviccəḍaveeṅ]um]	lexicon
VDEL	[[anuppuθccəḍaṅ]um]	lexicon
BRACKET ERASURE	[anuppuccəḍaṅum]	
SV-DEL	[an-pp-ccəḍaṅum]	post-lex.
CLSTREDUC	[anpcəḍaṅum]	post-lex.
NASALASSIM	[ampcəḍaṅum]	post-lex.
NASALIZ	[ampcəḍaṅū]	post-lex.
Surface	[ampcəḍaṅū] 'must get-rid of'	

Table 11
Morphological Domain of the Rules*

Derivation	Compounding			Inflection			
	DER	III	II	I	PL	CA	CLI
AG	-	-	+	+	-	+	-
m-del	-	-	+	+	-	+	-
∅ → tt	-	-	+	-	-	+	-
IG	+	-	-	+	-	-	(+)
Pal	+	-	-	-	-	+	-

* Christdas' Description of Strata in Tamil (figure 3, Christdas 1987: n.p.).

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., *kuuḍaadu* '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 *veeṇum* 'must, want, should, need' alternate with a post-infinitival (bound) form *ṇum*, but the unbound negative form *veeṇḍaam* '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 *veeṇum* (*veeṇum* and *-ṇum*) 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' + *veeṇḍaam*, i.e., 'don't need to "verb".' but the bracketing [[[verb]negative]must] gives the output 'verb' + *kuuḍaadu*, 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 *kuuḍaadu* for [negative [must]], and *veeṇḍaam* 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 *veeṇum* 'want, need, must' but does not apply to the negative form *veeṇḍaam* '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-tt-iinga?* 'when did you come (completely arrive)?', the answer is usually with a 'plain' verb: *neettu-daan vand-ēen* '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

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-uḍ-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 laxed. Christdas claims that there are two levels in the phonology of Tamil, and that tense formation is spread over both levels (Christdas 1988: 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 *-t*, *-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 cyclicity 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.

point of not coming!' and the choice of the negative imperative morpheme *aade* must 'see' that what precedes it is an imperative form (verb-stem, in this case that of an aspectual verb) in order to get the proper negative allomorph. I.e., this must happen before bracket erasure, since afterward, this information is not available.

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

- Annamalai, E. 1985. *The Dynamics of Verbal Extension in Tamil*. Trivandrum: Dravidian Linguistics Association of India.
- Arden, A. H. 1942. *A Progressive Grammar of Tamil*. Madras: Christian Literature Society.
- Bright, William O. 1975. "The Dravidian Enunciative Vowel." In *Dravidian Phonological Systems*, ed. H. F. Schiffman and C. M. Eastman. Seattle: Institute for Comparative and Foreign Area Studies and University of Washington Press.
- Britto, Francis. 1986. *Diglossia: A Study of the Theory with Application to Tamil*. Washington: Georgetown University Press.
- Caldwell, Robert. 1856 [repr. 1961]. *A Comparative Grammar of the Dravidian or South-Indian Family of Languages*. Madras: University of Madras.
- Christdas, Prathima. 1987. "On Constraining the Power of Lexical Phonology: Evidence from Tamil." *Proceedings of New England Linguistic Society* 17.
- _____. 1988. *The Phonology and Morphology of Tamil*. Ph.D. diss., Cornell Univ.
- Jensen, J., and Margaret Stong-Jensen. 1984. "Morphology is in the Lexicon!" *Linguistic Inquiry* 15:474-98.
- Mohanan, K. P. 1986. *The Theory of Lexical Phonology*. Studies in Natural Language and Linguistic Theory. Dordrecht: Reidel.
- Mohanan, K. P., and Tara Mohanan. 1984. "Lexical Phonology of the Consonant System in Malayalam." *Linguistic Inquiry* 15:575-602.
- Mohanan, Tara. 1989. "Syllable Structure in Malayalam." *Linguistic Inquiry* 20.4:589-625.
- Schiffman, Harold F. 1969. *A Transformational Grammar of the Tamil Aspectual System*. University of Washington Studies in Linguistics and Language Learning, vol. VII. Seattle: University of Washington Department of Linguistics.
- _____. 1975. "The Ternary Contrast in Dravidian Coronal Stops." In *Dravidian Phonological Systems*, ed. H. F. Schiffman and C. M. Eastman. Seattle: Institute for Comparative and Foreign Area Studies and University of Washington Press.
- _____. 1979. *A Grammar of Spoken Tamil*. Madras: Christian Literature Society.
- _____. 1983. "Negation in Tamil: Semantic and Syntactic Aspects." *South Asian Review* 6.3:104-16.