ASPECTS OF THE PHONOLOGY OF THE SINHALESE VERB; A PROSODIC ANALYSIS

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ABSTRACT

The purpose of the thesis is to study Sinhalese verb forms in relation to slow and rapid styles. The theory used in the analysis is that of Prosodic Phonology. The thesis is presented in seven chapters and an appendix.

Discussed in Chapter 1 are styles, speech situations, the theory used in the analysis, the choice of the theory as the theoretical background, the nature of the analysis, research procedure, data, informants, and new information arising from the research.

Chapter 2 is divided into two parts. Part 1 is an outline description of vowel and consonant sounds. The physical characteristics of these sounds and their distribution are given here. Part 2 includes a discussion of the syllable: syllable structure, syllable quantity, syllable prominence and syllable division.

Chapter 3 contains an analysis of simple verb stems. Structures and patterns of verb stems, and contrasts and functions of elements within patterns are given here. In the analysis of disyllabic structures, the relationship between the first and second syllables is also discussed.

Included in chapter 4 is a phonological analysis of phrasal verb stems. Here, three types of stems, non-free morphemes, loan stems and onomatopoeic stems are described. At the end of each analysis, differences of the phonological structure of stems of the given three types are considered. In the analysis of the onomatopoeic stems, the relationship between the initial and non-initial syllables is also examined.

Chapter 5 includes a phonological analysis of affixes which can be suffixes, infixes or prefixes. How phonological structures of affixes differ from those of stems is also discussed.

Discussed in chapter 6 are the conjug. marker, conjug. classes, the relationship between non-past vol. and invol. stems and non-past and past vol. stems, junction prosodies, reduplication and the length relationship.

The analysis of rapid verb forms is given in chapter 7. Here, stems and affixes are described separately. In the analysis, phonological structures of parallel slow forms of stems and affixes are also given for comparison with structures of rapid forms. This chapter is followed by a summary and conclusion.

The appendix includes a grammatical analysis of verb forms and a list of simple verbs which are analyzed in the thesis. In the grammatical analysis, volitive and involitive forms, tenses, aspects, overlapping forms and the grammatical function of suffixes are discussed.

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NOTATION

1) IPA symbols are used throughout the thesis with the following modifications for convenience of typing.

Symbols used	IPA
č	tʃ
ǰ	dʒ
ṭ	ʈ
ḍ	ɖ
ṇ	ɳ
ṿ	ʋ

2) Length of vowels is marked with :, whereas consonant length is indicated by geminate consonants.

3) In the phonetic description, phonetic symbols are given within square brackets, [ ].

4) The Sinhalese script would present difficulties to readers unfamiliar with it, a reading transcription is therefore provided to give some indication of the pronunciation as well as to indicate the systematic functioning of sounds in the language.

NOTATION OF PROSODIC PHONOLOGY

V systems:

ɩ	high grade
∈	mid grade
ɑ	low grade

C systems:

P	plosive system
N	nasal system
S	sibilant system
L	liquid system
M	pre-nasalized system

Terms:

p	labial term
t	apical term
ṭ	retroflex term
č	palatal term
k	dorsal term

Prosodies:

y	prosody of frontness
w	prosody of backness
ə	prosody of absence of frontness and backness
V̄	long length prosody
	short length prosody is unmarked
h	tense voiceless and breathy onset
h̲	lax and voiced onset
-y-	y junction prosody
-w-	w junction prosody
-g-	gemination prosody

ABBREVIATIONS

conjug.	Conjugation
CF	Citation Forms
CS	Casual Speech
emph.	Emphatic
FS	Formal Speech
invol.	Involitive
pl.	Plural
RS	Rapid Speech
SD	Surface Derivation
sg.	Singular
SS	Slow Speech
vol.	Volitive

CHAPTER 1

1.0 INTRODUCTION

1.1 This chapter deals with a general discussion of slow and rapid speech: their nature, contexts and differences between them. It also explains the theory used in the analysis and its justification, the nature of the data, research procedure, the informants, related linguistic research on Sinhalese and how this research differs from those of others.

1.2 Speech styles and their use

Crystal and Davy (1969) say:

"A particular social situation makes us respond with an appropriate variety of language, and as we move through the day, so the type of language we are using changes fairly instinctively with the situation. We use one variety of English at home, another with our friends, a third at work and so on. We usually take this ability for granted; but what are the implications of doing this, how far does the ability extend, and how can we begin to study it" Crystal and Davy (1969: 4).

The quotation given above clearly indicates that a language, whether it is English, Sinhalese, Tamil or any other is not such a unitary one: it has many varieties, such as regional and social. The fact that language in use is a strikingly more complex phenomenon than the variety of language traditionally singled out for description is clearly shown in the work of Labov (1966) in his study of sociolinguistic variation. In fact, in present day sociolinguistic research, there is no place for the idea of "ideal speaker-hearer" to be found in a completely homogeneous speech-community. In the study of languages one has to focus attention not only on social stratification and geographical spread but also on the

various physiological, psychological, emotional and other effects that are classed as matters of performance.

As the purpose of this thesis is to study slow and rapid verb forms of Sinhalese, the discussion given below will be mainly limited to slow and rapid styles on which the literature is relatively very small. Most of the scholars interested in language styles, as for instance, Ramsaran (1979) and Barry (1985), consider Labov as the pioneer in this field. After Labov's research was published, work in this field has been increasing.

However, it is true that linguists were aware of these styles even before the Labov's work. For example, Henderson (1949/1970) recognizes three types of style: isolative, combinative and rapid combinative. Of the first, she says:

"I have called this style of speech "the isolative style". It is that commonly used for monosyllabic words and for the slow, deliberate pronunciation of polysyllables, and is that shown in dictionaries. The structure of the syllable, which is also that of the monosyllabic word, is determined by reference to the isolative style only. A study of words of more than one syllable shows that in connected speech, or what may be called the "combinative style", the syllable structure proper to the isolative style is modified in some degree..... In addition to "isolative style" and "combinative style", it is sometimes necessary when examining certain word and sentence prosodies to take into account yet another style, which I have called "rapid combinative style" (Henderson in Palmer, 1970: 27-28).

Most other linguists, except Hasegawa (1979), discuss two types of style. However they use different terms for them. For example, "informal speech" Brown (1977),"fast speech" Sommerstein (1977) and "connected speech" Hawkings (1984), "Casual speech" Lass (1984) and "rapid speech" Lodge (1984) refer to the same style that I call in this thesis the "rapid style".

At this point it is necessary to comment on Hasegawa's analysis of styles as he sees a distinction between fast (FS) and casual speech (CS) which are used to refer to the same style in the literature. He says:

"I set the primary distinction between FS and CS processes depending on whether a process is sensitive to the rate of speech; if so the process is a FS process, if not, it is a CS process" (1979: 126). He gives two FS processes and three CS processes. In his opinion, FS processes depend on the rate of speech, their operation is not sensitive to lexical items and they are phonetically natural. CS processes can occur in slow or careful speech as well as in fast speech. Referring to a rule called nasal syllabification he says: "The syllabicized form n̩ can occur in a fairly formal or polite expression, regardless of the rate of speech. However, the opposite is not true. i) CS rules are more or less conditioned by lexical information ii) CS rules are sensitive to sociological notions. These two are not only the traits of CS phonological processes but those of CS morphological and syntactic processes. This means that lexical conditioning is a general characteristic of processes sensitive to the sociological notions" (1979: 131).

In my material, however, I do not see any process that can be called CS which differs from rapid speech. In fact, it is not difficult to allocate my material either to slow speech (SS) or to rapid speech (RS). Before going on to discuss SS and RS in detail it is necessary to make a note on style itself.

Hymes says:

"Style has often been approached as a matter of statistical frequency of elements already given in linguistic descriptions, or as a deviation from some norm given by such description.... Styles also depend upon qualitative judgments of appropriateness, and must often be described in terms of selections that apply globally to a discourse" (Hymes,

1972:57).

According to the above description, judgement of what is or is not style depends on several factors: statistical frequencies of elements, a deviation from some norm given by a linguistic description and appropriateness and selection in relation to a discourse.

Ramsaran (1979) in her Ph.D. thesis has given a statistical frequency count of R linking in English rapid speech. According to her research, Hymes first point may be correct. But if rapid speech can be studied in relation to tempo rather than informality, it is difficult to say to what extent this viewpoint is valid. As far as Hymes's second point is concerned, the researchers, for instance, Ramsaran (1979) and Lass (1984), whose attention was focused on rapid speech, have agreed that styles have a common "norm". Therefore, Hymes's second point seems to be accepted. His third point is "appropriateness and selection". As native speakers have intuitive knowledge of appropriateness of styles, they select styles depending on situations. Therefore, it is possible to agree with Hymes's third point as well.

Enkvist et al. (1964) describe styles in a straight forward way. They say:

"Stylistic choice.... at first sight seems to be a choice between items that mean roughly the same, where non-stylistic choice, involves selection between different meanings" (1964: 19).

It seems to be true that although forms belonging to two styles have different shapes, their meanings are the same, in other words the difference between two styles does not depend on meaning. For instance, if I take two examples from my material, kərla and kərəla, both have the same meaning and the former occurs in rapid style and the latter occurs in slow style. Both forms are grammatical and the shape of the form depends on the style. Therefore, it is possible to agree with Enkvist et al. (1964), who says

"As long as both types of construction are grammatical, the choice between them cannot be a matter of grammar. If the use of one or the other is contextually bound, the choice is stylistic" (1964: 41).

Lodge (1984) suggests that slow and rapid styles have to be studied in relation to optional and obligatory phonological processes. According to him processes of RS are optional and those of SS are obligatory. He says:

"We need to discover whether or not the phonological processes discernible in rapid speech are fundamentally different from those of slow or careful speech. The main differences may be that in slow speech any processes that occur are for the most part obligatory, whereas in rapid speech they are optional. For example, in all varieties of English pleasure, which, we will assume, has an underlying [zj], undergoes a "palatalization " process so that it is pronounced with a medial [ʒ]. On the other hand, as you in rapid speech can be pronounced either [əzjə] or [əʒə], although the latter is more likely. This means that we shall have to differentiate between instances where a rule is applied obligatorily and instances where the same rule is applied optionally" (Lodge, 1984: 2).

This optional/obligatory concept can be of value only if the difference between rapid and slow speech cannot be described in relation to rate of articulation. Otherwise this concept will not be sufficient to make a distinction between rapid and slow speech. Referring to the idea of optional and obligatory Lass (1984) says: "The various CS phenomena dealt with in 12.2 are "optional"- but I did not make much of this. The particular kind of optionality involved is however not simply a matter of random application or non-application of a rule: the polarity optional/obligatory is not very helpful. What we have here is a matter of probabilities. A tempo hierarchy like (12.7) is not a listing of forms absolutely characteristic of particular tempi, but should be interpreted

this way: given a particular tempo, at least a certain percentage of tokens meeting the SD of a tempo specific rule will actually show its application" (1984: 304).

In the above quotation Lass has made two important points: the first is that the concept of optional/obligatory is not very helpful in making a distinction between slow and rapid speech and the second is that rapid speech has to be studied in relation to the rate of tempo. In fact, he assumes that the structure of rapid forms can be explained through tempo specific rules.

Barry (1985: 9-10), who agrees with Lass (1984), states that the distinction between slow/rapid speech depends on three factors, rate of articulation, care of articulation and social setting. According to my data rapid forms are produced at an increased tempo, and this is associated with absence of care of articulation. Usually, but not always, care of articulation is absent in informal situations.

1.3 Nature of RS

The nature of RS is dealt with fairly in many books. For instance, Zwicky (1972), Gay, Ushijima, Hirose and Cooper (1974), Linell (1979), Lindblom (1981), Cooper, Soares, Ham and Damon (1982), Macneilage (1983), Lass (1984), Scott (1984) and Barry (1985). I give here a few examples from Lass (1984) and Barry (1985) in order to show some of their findings. Referring to two examples, [hæŋ] "hang" and [hæ:ŋ] "hand" which occur in RS, Lass says: "Thus, a false contrast [æŋ] vs [æ:ŋ] occurs in CS, where a minimal pair [hæŋ] "hang" and [hæ:ŋ] "hand" is born out of an interaction between one CF rule (lengthening), and two CS rules. There is thus a potential "phonemic contrast" in CS that can't exist in CF: structurally, the two are different dialects" (1984: 300).

However, Lass assumes that such contrasts should not be treated like those which occur in SS. Instead, he suggests

that structures of RS have to be derived from the structures of SS through tempo specific rules.

Barry (1985) describes the nature of rapid speech on the basis of assimilation, lenition and suppression of boundaries. He says: "The acquisition by a segment of certain articulatory and acoustic features of an adjacent segment is a process which is especially characteristic of CS" (1985: 4).

According to him "can't bear" occurs in RS as [ka:mpbeə] and "right car" occur as [raikka:]. He discusses four processes under lenition.

1.) Consonantal weakening

e.g. already [ɔ:red:]

literary [litri:]

2.) Vowel reduction

e.g. could [kəd]

as there could be [zəekəbi:]

3.) Degemination

Barry (1985) says: "Where assimilation gives rise to two contiguous homorganic stops, as in [kʊb bi: leit], this may further reduce to a single stop: [kʊbile:t] (1985: 8)

4.) Cluster simplification

e.g. best man [besmæn] (1985: 4-9).

"Suppression of boundaries" is discussed in relation to two examples. According to Barry "ice cream" and "I scream" which occur in rapid speech as [aiskrri:m] and [aiskri:m] respectively, can be distinguished in SS in the manner indicated in the transcription. In RS, however, it may be impossible to distinguish the two on phonetic grounds" (1985: 6).

As a result of these phonological processes, RS may sometimes be very different from SS. For example, let us examine the following utterance given by Lass (1984). He says:

"As a first example, consider this string:

d:ɪfxɬtɬi ɪzəðɪn: ʔəfɣɹəβæɬɪʔtʰ

What language is this? How many words are there in this utterance? It is obviously a language with long consonant [d: n:], nasalized vowels [ãɪ], a bilabial fricative [β], a velar [x] and syllabic fricatives like [ɬ]. In fact, the language is my own variety of English, spoken in a rapid and casual style. It is a casual speech (CS) version of what, as a sequence of CFs, would be ðə dɪfɪkʌl̩ʔtɪ i ʔɪz ðæʔt ãim näʔt ʃʊ̈əʔəbæʊʔt ʔɪʔt (That is, "the difficulty is that I'm not sure about it" Why should this sort of thing be possible in CS?"(1984: 295).

This is an important question. If sounds which are treated as being not pronounceable in a language are possible in RS, what are the reasons for that? Lass (1984) provides an answer to this question in the following quotation:

"What appears to happen is that the faster and more casual speech becomes, the less it is "focal" to the speaker's concerns, the less attention he pays to it. Therefore the inertial properties of the speech apparatus tend to take over: as it were a "gravitational" effect, where decrease of attention leads to decrease of effort. To put it crudely, things tend to get done the easiest way, movements flow along a path of least effort. As attention decreases, so does control; and both distinctiveness and distinctness decrease. Articulatory "fine tuning" is less strictly maintained, so there is a general loosening of control over individual gestures, and an increase in co-articulation" (1984: 297-98).

Barry's view about this aspect of rapid speech is not very different from that of Lass. According to Barry, at a rapid speaking rate, speakers have the option of either increasing the velocity of movement of the articulators or of decreasing articulatory displacement. When speaking rate increases motor activity is speeded up. When this happens, there is an economical restructuring of motor commands.

1.4 Context

Having discussed the nature and the functions of RS, one could now examine the contexts of RS and SS. Some linguists, for example, Crystal and Davy (1969) believe that RS and SS can be separated, at least to some extent, on the basis of the context.

First of all, what is context? Halliday (1961) says: "The context is the relation of the form to non-linguistic features of the situation in which language operates, and to linguistic features other than those of the item under attention" (1961: 243-4).

According to the definition given above it is not possible to discuss the context without referring to non-linguistic features of the situation. I have now to examine whether it is possible to discuss the contexts of SS and RS in relation to the speech situation where they occur.

1.5 Speech situation

Brown and Gilman (1960) say:

"RS occurs where power relationship in a dyad is symmetrical, and there is a high degree of solidarity and formal speech where the opposite obtains" (1960: 258).

In other words RS occurs in informal situations and SS occurs in formal situations. However, Crystal and Davy (1969) say that, as far as language is concerned, there is no clear-cut division between formal and informal situations. They say: "The informality of the conversation situation is also reflected in the fact that any kind of language can occur without its being necessarily linguistically inappropriate... It is significant that in an informal language situation, very formal language may be used from time to time as in argument of humour, without its being out of place, whereas the reverse is not true" (1969: 104).

On the one hand, as Crystal and Davy say, SS can be used in informal situations from time to time and on the other hand, even though they say the reverse is not true, my data shows that RS can be used in formal situations depending on the emotional condition. For example, if a person gets angry, he may use RS even in formal situations.

The question that will arise at this point is what constitutes formal and informal situations. Ramsaran (1979) says:

"Formal situations are those in which the participants are either strangers or feel the absence of something in common" (1979: 62).

"Casual situations are those in which the participants are known to each other and feel that they share something in common" (1979: 62).

In my research, the definition of casual situations as given above seems valid. However, it is not so in formal situations. For example, people in my village in Sri Lanka though known to each other regard meetings of village development societies as formal occasions and use only slow speech. There is no absence of something in common.

Nevertheless, Ramsaran has also given the views of some individuals on formal and informal situations; this will be useful in making a distinction between formal and informal situations in my study. According to Ramsaran, one person said

"Someone caught up in formality behaves as they think people expect them to behave rather than they want to behave. Formality may depend on either the occasion or the type or people" (1979: 59-60). Another individual said:

"Formality is an act or activity which occurs through slavish obedience to custom... to be informal is to (be) in a situation where custom and manner and form are not so slavishly followed. People hope that informality creates less barriers. But in an informal situation one feels more awkward and embarrassed because it is more difficult to communicate although it is

supposed to be easier: one has to do it by oneself, but in a formal situation one knows how to behave..." (1979: 60). A third individual said:

"A formal situation is one with defined limitations or a limitation not necessarily articulated;it follows a fairly recognized procedure; people are expected to have specific roles and they know what sort of role they should be playing. It has a certain underlying point or structure...There is impersonality...It's to do with norms... You feel under certain restrictions... An informal situation allows for more variation" (1979: 60).

Of the definitions given above it seems to me that the third one is the most satisfactory for Sinhalese. In formal situations people behave within defined limitations not necessarily articulated, in other words, people behave in an accepted manner. In such situations they pay more attention to the style of language they use.

We should not, however, forget the fact that the degree of formality in such situations- not necessarily in all formal situations- may change. I would now like to examine Sinhalese slow and rapid speech in relation to these speech situations.

1.6 Sinhalese styles

As far as styles of Sinhalese are concerned, it is difficult to say that slow forms occur only in formal situations. In fact, they occur in both formal and informal situations. Rapid speech occurs mainly in informal situations. Nevertheless, it can be used in formal situations when the level of formality changes. There is yet another aspect of Sinhalese: a diglossic situation where there are many differences between written and colloquial languages. They sometimes look like two separate languages. In some formal situations slow speech is mixed with literary Sinhalese. Radio news is an extreme case of this. In other formal situations,

like public meetings, less literary language is used. In some other formal situations such as entertaining guests, literary language is not used at all; the style is, however, slow. In informal situations literary Sinhalese is not used at all; the form of the language is completely colloquial, but can be slow or rapid.

This study is involved in slow and rapid speech, but the literary form is not considered. Rapid speech, if we leave out a few special cases, is usually used within the family, between friends and with relations: especially with close relatives. It is also used when people of high status address those of lower status, as for example, when a master speaks to a servant or a teacher to a student. However, this is not to say that slow forms are not used in such contexts. The term Rapid speech is used in this thesis in the sense that such speech is produced at a rapid speaking rate. When the forms are produced at a rapid tempo, they can differ from those which are produced at a slow speaking rate in various ways, as will be shown in chapter 7. Having discussed the styles, speech situations and tempo of speech, I now turn to discuss the phonological model used in this analysis.

1.7 Theoretical model

The model used in this analysis is that of prosodic phonology which was introduced by J.R. Firth in 1948. However, Palmer (1970), in the introduction to Prosodic Analysis, says: "Although Sound and Prosodies was the first explicit statement of the theory and the first to use the term prosody and prosodic in the appropriate sense, some of the notions involved are to be found in earlier articles, notably Firth 1934, 1935 and 1937" (1970: i). Several articles using prosodic analysis are available in Palmer (1970).

In recent books on phonology, there is at least a brief discussion of Prosodic phonology, for example, Sommerstein

(1977) and Lass (1984). However, the general principles of prosodic analysis are presented mainly in the following three works: The Introduction to Prosodic Analysis (Palmer, 1970), Aspects of Prosodic Analysis (Robins, 1957/1970) and Prosodic Phonology (Waterson, 1987). Waterson (1987) has given six concepts as characterizing prosodic analysis, 1.) restricted language and renewal of connection, 2.) multistructural, 3.) the piece, 4.)polysystemic, 5.) prosodies and phonematic units: systems and structures, and 6.) partial analysis.

1.7.1 Restricted language and renewal of connection

This concept has to be taken into account specially at the beginning of a prosodic analysis. Waterson (1987) says: "The notion of restricted language means that the field of study is to be defined, and the description is then made within the limits stated... The validity of the description made can be tested by "renewal of connection", i.e. by comparing the system set up for the one speaker with those of other speakers belonging to the same community" (1987: 8).

1.7.2 Multistructural

This concept relates to the organization of structures in an analysis. Waterson (1987) says: "Multistructural in Prosodic Phonology refers to the convention that linguistic units of like structures are handled together, and those of unlike structures are handled separately; for example, words of one syllable are dealt with together and apart from words of two and three syllables. Further subdivisions of one-syllable words are then made; for example, into those with open endings, e.g. CV and V, and those with closed endings, e.g. VC and CVC and so on" (1987: 9) In such an analysis it is easy to see the system of contrasts of one structure and how such contrasts differ from those of others. As far as different word classes are concerned such an analysis shows how phonological systems of one word class may differ from those of others.

1.7.3 The piece

Piece is a generalized term in Prosodic Phonology. It refers to a structure which is not required to be defined grammatically. According to Waterson (1987) the piece can be the whole or part of a syllable, word, phrase or sentence and its phonological characteristics are described in the same way as those of other phonological units, e.g., the syllable and word.

1.7.4 Polysystemic

According to Waterson (1987) this term has three senses. Prosodic Phonology is polysystemic in the sense that different systems are set up at different places in structure. Thus, it is possible to show how initial systems differ from final systems. It is polysystemic in the sense that different phonological systems may be set up for different grammatical classes. It is also polysystemic in the sense that different strata in a language are treated separately. Waterson (1987) says: "The third sense in which polysystemic is used is that different strata in a language such as native words, loan words and onomatopoeic words are described as constituting different phonological systems within the one language" (1987: 11).

1.7.5 Prosodies and phonematic units: system and structure

This is one of the main concepts in Prosodic Phonology, which Firth discussed in "Sounds and Prosodies" in detail. Referring to prosodies and phonematic units, Robins (1953) says:

"Prosodic analysis is, in fact, an abbreviated designation of an analysis that makes use of two types of elements, Prosodies and Phonematic units (cf Firth (1948), pp.150-2; Allen (1954),p556); the latter are not phonemes or phonemic units, and the analysis is carried out in terms other than phonemic. In this analysis, abstractions adequate to a full

analysis of the phonological working of the language are made from the phonic data, or the raw material of the actual utterances, and these abstractions fall into the two categories of prosodies and phonematic units" (Robins, in Palmer, 1970: 192).

According to Robins, phonematic units refer to those features of the phonic material which are best regarded as referable to minimal segments, having serial order in relation to each other in structures.

Such units constitute the consonant and vowel elements or C and V units of a phonological structure. Prosodies, Robins says, constitute more than one segment in scope or domain of relevance and may in fact belong to structures of any length, though in practice no prosodies have yet been stated as referring to structures longer than the sentence. Thus there may be syllable prosodies, morpheme prosodies, word prosodies, phrase or sentence part prosodies and sentence prosodies. Phonematic units and prosodies are studied in relation to system and structure. Thus, it is possible to show the distinction between syntagmatic and paradigmatic contrasts and functions. The syntagmatic relevance of phonic elements is judged in two ways: 1.) a feature may be spread or realised phonetically over a structure such as a syllable or a word as a whole; 2.) a feature, though not phonetically realized over the whole structure, may be relevant to a structure by marking its boundaries. Such prosodies can be called demarcative or junction prosodies.

Referring to prosodic contrasts such as found in the English words [bu:t] "boot" and [bi:t] "beat", Waterson (1987) says: "Lip-rounding and backness start with the bilabial closure for [b] and continue throughout the vowel. When such features have a contrastive function (the rounding and backness in [bu:t] "boot" contrast with the lip-spreading and frontness in "beat" [bi:t]) they are alloted to prosodies so that the structures of "boot" and "beat" are symbolised as $C\overline{\underset{W}{V}}C$

and $C\overset{\frown}{V}C$ respectively. Prosodies are elements which are capable of extension over sequences of phonematic units and which have relevance to syllables, words and larger units such as the piece and the sentence. They are "unplaced". Phonematic units occupy places in structure in sequence and are thus "placed" (Waterson,1987:11). It was said above that phonematic units constitute C and V elements. C systems are described through sub-systems such as P (plosive) system, N (nasal) system and S (sibilant) and V systems are described through grades such as close, mid and open.

1.7.6 Partial analysis

Partial analysis is possible in a prosodic description. For example, even within one structure, prosodic contrasts may be dealt with at one time and C systems of the same structure at another time.

1.7.7 Relationship within structures

Prosodic phonologists are interested in the discussion of relationships within structures. Waterson (1987) says: "Through the use of prosodic theory, with its emphasis on the syntagmatic, synthetic aspects of language, it is possible to focus on different relationships within structures in the child's phonological system at different stages of development and to show different kind of relationship between the child's and adult's forms and structures.." (1987: 14). In fact, Waterson (1987) has demonstrated such relationships through the use of prosodic analysis.

These are the concepts that are followed in this analysis. In particular, inspiration was derived from the work of Waterson (1987).

1.8 How Prosodic Phonology is used in this thesis

It is an accepted idea in Prosodic Phonology that

phonological analysis should take into account the requirements of grammatical analysis (Palmer, 1970: 134). In fact, phonological analyses are made on forms which are discussed in grammar. As the purpose of this thesis is to make a phonological analysis of verb forms, it is necessary to give a grammatical analysis of verb forms. This has been done in an appendix. In the analysis of tense, aspects and moods in the appendix, I followed the method used by Abhayasinghe (1973) and the rest is my own analysis.

In the analysis, grammatical abstractions, verb stems, affixes, junction prosodies and syntagmatic relations between syllables and between different shapes of stems are discussed separately. Under phrasal verbs, onomatopoeic stems, loan stems and the stems which are called non-free morphemes are also discussed separately.

Stems and suffixes are divided into groups such as monosyllabic, disyllabic etc. Within each group, like structures are taken together, separately from unlike structures. Each structure is divided into patterns depending on the nature of the systems at C places. Thus, when the structure is CVC, the pattern can be PVP, PVS, NVP etc. This is done in order to show the maximum contrast of systems and prosodies within each structure. Within a pattern, contrasts of systems as well as terms are described. Waterson (1987) studies how the contrasts of C and V systems and prosodies of child language differ from those of adult language. Up to date, as far as I know there has been no phonological analysis of child acquisition of Sinhalese. As I have discussed all possible contrasts of systems and prosodies in verb forms of the adult language, this study can aid future research in comparison of child and adult verb forms. Usefulness of that analysis is seen in chapter 7 also where the contrasts of rapid forms are compared with those of slow forms. In this type of analysis it is possible to see whether complex and simple structures have the same number of patterns, whether complex

and simple patterns have the same number of stems, if not, whether there is any particular reason for that and whether polysyllables can be treated as combinations of monosyllables.

Systems usually have "manner of articulation" as phonetic exponents. Terms usually have "place of articulation" as phonetic exponents. Whenever necessary, systems are described in relation to prosodies. In the analysis, sub-systems at C places and V places are called "systems" for brevity. Sub-systems at C places of monosyllabic stems are called P initial system, P final system, N initial system, etc.; when there is more than one sub-system of the same type, and when the sub-systems are different from each other, they are just called P system, N system etc. In polysyllabic stems, when there is more than one sub-system of the same type within the structure, it is called P initial system of the initial syllable, N final system of the second syllable, and so on and when sub-systems are different from each other, they are just called P system, N system etc. Junction prosodies will be described as a prosodic relation between stem and suffix, stem and infix and infix and suffix.

Partial analyses are made for ease of explanation as permitted by the theory. For example, in describing a stem structure, the structure is first given in terms of C and V, e.g. CVC, su:r-. Then the C systems and terms are given, e.g. S_tVL_t and finally V systems and stem prosodies, e.g. $C^{\smile w}C$ are given. In the case of P systems, h and $\underline{h}$ prosodies are also given to account for the contrast of voice and voicelessness, e.g. $^{h}PV\underline{h}P$, pud-. The C and V systems and prosodies used in this thesis are given below.

1.8.1 Prosodies

Prosodies given in this thesis can be divided into five types, syllable prosodies, stem prosodies, suffix prosodies, word prosodies and junction prosodies.

1.8.1.1 Syllable prosodies

h and h̲ prosodies:

These prosodies are required to differentiate Plosive (P) Systems. h prosody is characteristic of a syllable with breathy onset, where the exponents of C sub-systems are voiceless plosives. h̲ prosody is characteristic where the exponents of C sub-systems are voiced plosives. Thus, h and h̲ prosodies are studied in relation to the P system. When the syllable is h prosodic, the onset is tense voiceless and breathy and when the syllable is h prosodic the onset is lax and voiced.

y, w and ə prosodies:

The phonetic exponent of y prosody is frontness; the phonetic exponent of w prosody is backness, and the phonetic exponent of ə prosody is absence of frontness and backness.

Length prosody:

Syllable length is also treated as a syllable prosody. Syllables can be short or long. When the syllable has long length it is marked with - over V and when the syllable has short length prosody it is unmarked.

1.8.1.2 Stem prosodies

When a stem is monosyllabic it can be characterized by any of the given prosodies, and in that case they are taken as stem prosodies. For example, a stem of the CVC structure can be y, w or ə prosodic and h or h̲ prosodic.

1.8.1.3 Affix prosodies

When an affix is monosyllabic it may be characterized by any of the given prosodies. In that case they

are taken as affix prosodies. For instance, an affix of the CV structure can be y, w, or ə prosodic and h or h̲ prosodic.

1.8.1.4 Word prosodies

Certain features that are characteristic of the word as a whole will be treated as word prosodies. They are as follows: a) the number of syllables in the word, b) nature of the syllables in terms of syllable structure, c) quantity of the syllables and d) the place of the prominent syllable in the word.

a) Number of syllables:

A simple inflected verb may contain a minimum number of one syllable and a maximum number of seven syllables.

e.g. ei "may come"
varaddəpuvahamə "after making a mistake"

b) Nature of syllables:

A verb may contain only open syllables: an open syllable may be V, CV, V̄ or CV̄.

e.g. CV-CV-CV-CV kərənəva "do"
CV̄-CV-CV-CV to:rənəva "choose"
V-CV-CV enəva "come"
V̄-CV-CV-CV a:rənəva "become big"

A verb may contain only closed syllables: a closed syllable may be VC, V̄C, CVC or CV̄C. However, examples are found only for VC-CVC and CVC-CVC type forms.

e.g. VC-CVC æddot "if...pull"
CVC-CVC pænnot "if...jump"

A verb may contain both open and closed syllables.

e.g. CV-CVC-CV kapaṇdə "to cut"
CV̄-CV-CVC to:rətot "if...choose"
CV̄C-CV-CV pa:ssəla "has/have welded"

c) Syllable quantity:

A syllable can be short or long. It can be any of V, VC, CV, CVC, $\bar{V}$, $\bar{V}$C, C$\bar{V}$ and C$\bar{V}$C.

All syllables of a word can be short.

e.g. CV-CV-CV-CV kərənəva "do"
V-CV-CV enəva "come"

A verb can contain both short and long syllables but two adjacent syllables can not be long.

e.g. C$\bar{V}$-CV-CV-CV to:re͡nəva "choose"
C$\bar{V}$C-CV-CV-CV pa:ssənəva "weld"

d) Place of prominent syllable in the verb:

This is discussed in the second part of the second chapter and therefore, will not be discussed here.

1.8.2 C and V systems and structure

1.8.2.1 C systems

A maximum contrast of five sub-systems, P, plosive, N, nasal, S, sibilant, L, liquid and M, pre-nasalized plosive can be set up in order to handle C systems. Sub-systems will henceforth be referred to as systems for greater convenience of reference.

The P system:

The P system has a maximum number of five terms, p, labial, t, apical, ṭ, retroflex, č, palatal and k, dorsal. The P system is studied in relation to h and ẖ prosodies. Thus,

the phonetic exponent of $^{h}P_{P}$ is p, a voiceless bilabial plosive
the phonetic exponent of $^{ẖ}P_{P}$ is b, a voiced bilabial plosive
the phonetic exponent of $^{h}P_{t}$ is t, a voiceless alvolar plosive
the phonetic exponent of $^{ẖ}P_{t}$ is d, a voiced alveolar plosive
the phonetic exponent of $^{h}P_{ṭ}$ is ṭ, a voiceless retroflex plosive
the phonetic exponent of $^{ẖ}P_{ṭ}$ is ḍ, a voiced retroflex plosive
the phonetic exponent of $^{h}P_{č}$ is ʧ, a voiceless palatal affricate

the phonetic exponent of $^{b}P_{\check{c}}$ is $d_{\check{z}}$, a voiced palatal affricate
the phonetic exponent of $^{h}P_{k}$ is k, a voiceless velar plosive
and the phonetic exponent of $^{b}P_{k}$ is g, a voiced velar plosive

The N system:

The N system has a maximum number of five terms, p, labial, t, apical, ṭ, retroflex, č, palatal and k, dorsal. Thus,

the phonetic exponent of N_{p} is m, a bilabial nasal
the phonetic exponent of N_{t} is n, a alveolar nasal
the phonetic exponent of $N_{\dot{t}}$ is ɳ, a retroflex nasal
the phonetic exponent of $N_{\check{c}}$ is ɲ, a palatal nasal
and the phonetic exponent of N_{k} is ŋ, a velar nasal

The S system:

The S system has a maximum number of three terms, t, apical, č, palatal and ʔ glottal. Thus,

the phonetic exponent of S_{t} is s, a voiceless alveolar fricative
the phonetic exponent of $S_{\check{c}}$ is ʃ, a voiceless palatal fricative
and the phonetic exponent of $S_{ʔ}$ is h, a glottal fricative

The L system:

The L system has a maximum number of four terms, p, labial, t, apical, ṭ, flap and č, palatal. Thus,

the phonetic exponent of L_{p} is v, a voiced labio-dental approximant
the phonetic exponent of L_{t} is l, a voiceless alveolar lateral
the phonetic exponent of $L_{\dot{t}}$ is r, a voiceless alveolar trill initially and voiced alveolar flap medially
and the phonetic exponent of $L_{\check{c}}$ is j, a voiced palatal approximant

The M system:

The M system has a maximum number of four terms, p, labial, t, apical, ṭ, retroflex and k, dorsal. Thus,

the phonetic exponent of M_{p} is ^{N}b, a voiced prenasalized bilabial plos.
the phonetic exponent of M_{t} is ^{N}d, a voiced prenasalized alveolar plos.
the phonetic exponent of $M_{\dot{t}}$ is ^{N}d, a voiced prenasalized retroflex plos.

and the phonetic exponent of M_K is $\overset{a}{\hat{g}}$, a voiced prenasalized velar plos.

1.8.2.2 V systems

A maximum contrast of three grades ι, high, ∈, mid and α, low is set up in this thesis to describe Sinhalese vowels. ι functions in y and w prosodic syllables, ∈ functions in y, w and ə prosodic syllables and α functions in y and w prosodic $\overset{e}{\hat{s}}$yllables. They are also studied in relation to the prosody of syllable length. Thus,

the phonetic exponent of $ι^y$ is i, a short close front vowel
the phonetic exponent of $\bar{ι}^y$ is i:, a long close front vowel
the phonetic exponent of $ι^w$ is u, a short close back vowel
the phonetic exponent of $\bar{ι}^w$ is u:, a long close back vowel
the phonetic exponent of $∈^y$ is e, a short half-close front vowel
the phonetic exponent of $\bar{∈}^y$ is e:, a long half-close front vowel
the phonetic exponent of $∈^w$ is o, a short half-close back vowel
the phonetic exponent of $\bar{∈}^w$ is o: a long half close back vowel
the phonetic exponent of $∈^ə$ is ə, a short central vowel
the phonetic exponent of $α^y$ is æ, a short open front vowel
the phonetic exponent of $\bar{α}^y$ is æ :, a long open front vowel
the phonetic exponent of $α^w$ is a, a short open back vowel
and the phonetic exponent of $\bar{α}^w$ is a:, a long open back vowel

1.8.3 After the analysis of disyllabic structures, a statement about possible prosodic structures is given. In some cases, the relationship of the initial and final C systems as well as V systems of disyllabic stems are also discussed.

1.8.4 Prosodic Phonology recognises descriptions of relationships between structures, for example, Waterson (1987). This concept is used in this analysis for two purposes: first, to discuss the relationship between different shapes of stems, i.e. between non-past vol. and invol., non-past and past vol. and between conjugation markers, and secondly, to discuss the relationship between slow and rapid forms in terms of prosodies

and C and V units.

1.8.5 In the analysis, the differences between simple stems and onomatopoeic stems, native stems and loan stems in terms of C and V systems and prosodies are discussed.

1.8.6 Slow verb forms are analysed in chapters, 3, 4, 5 and 6 and Rapid verb forms are analysed in chapter 7.

1.9 The choice of Prosodic Phonology as the theoretical background

I have used Prosodic Theory rather than any other theory for several reasons. First, in a prosodic analysis, as it recogizes C and V elements as well as prosodies, it is easy to show the paradigmatic and syntagmatic contrasts and functions of elements within a structure. Secondly, in segmental analyses the relationship between forms is discussed in terms of C and V units, but in prosodic analyses such relationships can be discussed in terms of C and V units as well as prosodies. As far as Sinhalese verb forms are concerned,this is an important point. For example, the relationship between initial and non-initial syllables as well as between vol. and invol. verb stems is prosodic. Such relationships have not been demonstrated previous to this study.

In other theories, differences between slow and rapid forms are described through phonological processes such as assimilation deletion, etc., for example, Ramsaran (1979). In many cases rules are used in order to describe these processes. Such rules are not sufficient to account for the contrasts and functions of slow and rapid forms and therefore it is difficult to see the real differences between those forms through such rules. But in a prosodic analysis where all contrasts and functions of forms are discussed, all differences between slow and rapid forms can be shown clearly.

As will be discussed in the third and fourth chapters, contrasts of C systems set up for native stems differ from those of loan and onomatopoeic stems. The relationship between initial and final syllables of polysyllabic native stems differs from that in loan verbs, etc. An awareness of these differences arises in prosodic analyses as the theory is polysystemic. Even within one stratum, contrasts and functions of one structure differ from those of others. Such differences are described in prosodic analyses where like structures are taken together, apart from unlike structures, as the theory is multistructural. The usefulness of such an analysis is demonstrated in Tables 2. and 3 in the third chapter.

1.10 Data

My research is based on recordings which are of two types: recordings of language used in formal situations and those of the language used in informal situations. Recordings which include religious speeches, public speeches and radio news, can be considered as formal speech which, in this thesis, is treated as slow. Recordings which include casual conversations represent both slow and rapid speech.

Sixteen cassettes record casual speech. Of these four cassettes are of conversations among family members, which were recorded without their knowledge. The group included a mother, her young sons and daughters and grand children. Among the speakers were five females, aged seventy, forty, thirty-eight, ten and eight, and six males, aged forty four, forty, thirty five, thirty-three, fifteen and twelve. Two other cassettes record a conversation between a husband, wife and one of their friends. The husband was aged forty-four, the wife was thirty-two, and their friend was thirty-six.

Five further cassettes are of conversations between family members, their friends and myself. I was a guest. In this case, however, they did not seem to speak in an informal way at

first. This was because, on the one hand I was a guest, and on the other hand they knew that their conversation was being recorded. It was, however, clear that as the conversation proceeded especially when the topic was interesting, they forgot the recording. Consequently, they used rapid speech as well. In this group, there were five males and one female. The males were in their forties and thirties and the female was in her twenties.

Two cassettes record a conversation between one of my friends and myself. My friend was a university lecturer and he was aged 36 when the recording was made.

Three cassettes record interviews. Of the interviewees, two were males and one was a female. The males were in their sixties and fifties and the female was in her fifties.

Six cassettes record formal speech. Of these, two cassettes are of religious speeches, two of public speeches and two of radio news and radio programmes which include discussions of politics. Each cassette lasted for one and a half hours. All my informants were native Sinhalese speakers and most of them could speak only Sinhalese. All except four of the speakers had only primary education.

1.11 Procedure of the research

The research was carried out in four stages. In the first stage the material was collected. This was done by recording conversations, etc. as explained above.

In the second stage, while utterances on the recordings were transcribed, verb forms were separated out, and finally verb forms were divided into slow and rapid forms. In rapid utterances, sometimes, the initial and final C or V systems, a syllable or syllables are subjected to changes such as deletion, assimilation, shortening, etc. Such features, which are treated as utterance linking, are not considered here, as my purpose was to study verb forms. The rapid forms, produced

at an increased tempo, given in this analysis are context free forms, i.e. their shape does not depend on preceding and following words.

In the third stage some additional recordings were made in order to confirm my findings. At this time mainly casual conversations, where rapid speech is found, were recorded.

In the fourth stage, the data were analyzed and the thesis was written.

Before proceeding to my next topic, related linguistic research on Sinhalese, it is relevant at this point to mention a few words about the Sinhalese language. Sinhalese is spoken by about 77% of the population of Sri Lanka, about 75% of whom (adults and children) can read and write. It is an Indo-Aryan language even though there are features which are not known in any other Indo-Aryan language.

1.12 Related linguistic research on Sinhalese

Some discussion of phonetics and phonology is included in all linguistic theses on Sinhalese. These have covered different aspects, such as morphology and syntax, as for example, Dissanayaka (1969), Jayawardhana (1972), Abhayasinghe (1973), Fernando (1973) and Wickramasuriya (1965) and (1978). The phonetic and phonological aspects of Sinhalese are discussed in slightly greater detail in the theses of Dharmadasa (1967), Jayasekara(1973), Premarathne (1974) and Wickramasinghe (1972). There are also some articles which discuss the phonological aspects of Colloquial Sinhalese, e.g. Coats & De Silva (1960), De Silva (1963). Except for a few of De Silva's articles, all are phonemic analyses. Being phonemic, they are purely segmental. Only slow speech was analysed in these articles and theses and to the best of my knowledge rapid speech had not been dealt with at all before this study.

There are , however, two phonological analyses of

Sinhalese, De Silva (1958) and Kekulawala (1964). Kekulawala (1964) is a phonological analysis of the Sinhalese noun and therefore differs from mine. De Silva's thesis, however, (an M.A. thesis) is a phonological analysis of the Sinhalese verb and I would therefore like to indicate the differences between his work and this study in a greater detail.

First, as he says in his thesis:

"The language examined in this thesis is my own idiolect, but where I found the need to do so, I checked my speech with that of other Sinhalese speakers who lived in London while this research being conducted" (1958: V). Thus, he is using his own idiolect whereas my recordings include, among others, natural conversations of several native speakers. His dialect is of the Southern province and mine is of the Western province. All of my informants speak this dialect. De Silva is more concerned about the phonetic aspect of the language and has paid less attention to the phonological aspect, whereas I have attempted to give a complete phonological analysis of verb forms. I have not however, given a detailed phonetic analysis, as De Silva has done this and, as far as verb forms are concerned, there is not a great deal of difference phonetically between the Southern and Western dialects.

Secondly, De Silva analyzed simple verb forms only whereas I have analyzed both simple and phrasal verbs. Furthermore this is the first phonological analysis of non-free morphemes and onomatopoeic stems that occur in phrasal verbs. There is not even a list of stems of non-free morphemes in the literature. Gunasekara (1891) and White (1884) have listed about fifteen onomatopoeic stems but no analysis is given. I have, however, collected quite a large number of onomatopoeic stems. Even in simple verb forms, the prosodic relationship of initial and non-initial syllables, between vol. and invol. verb stems and non-past and past vol. stems and between conjug. markers is not discussed in De Silva (1958). Furthermore, I have discussed all possible structures and patterns and such an analysis has

not been done in previous studies. Thirdly, he has focused attention only on slow forms where as I have included a contrastive analysis of slow and rapid forms. For these reasons my research differs in several ways from those of others, and covers new ground.

In conclusion, I have shown in this chapter that there are two styles, slow and rapid,in spoken Sinhalese. The slow style is used in formal as well as in informal situations and the rapid style is generally used in informal situations. The difference between them depends on tempo. In the discussion, I referred to the work on styles and social situations by others as well. I have discussed the data and informants, and cited the work done by others on Sinhalese in order to indicate those aspects of my study which are new and original. I have also discussed the principles of the theory used in the analysis and the reasons for its justification.

CHAPTER 2

2.0 Consonants and Vowels

2.1 The chapter is divided into two parts, 1 and 2. Part one presents an outline description of vowel and consonant sounds in order to give phonetic values to the transcription used in this thesis; these descriptions serve also as the phonetic basis on which the phonological statements are made. Part 2 deals with syllable structure, syllable quantity, syllable division and syllable prominence.

2.2 PART 1

2.2.1 Vowels

Vowels may be simple vowels or diphthongs.

2.2.1.1 Simple vowels

There are thirteen vowels in Sinhalese of which seven are short and six are long. The approximate tongue positions of the short vowels, when articulated in isolation, are shown in the vowel diagram given below:

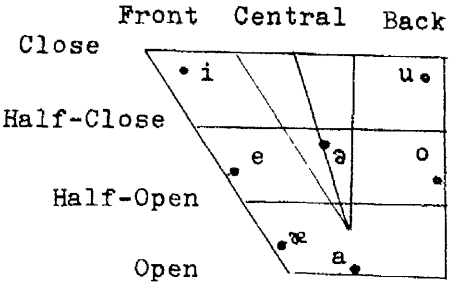

Fig. 1. Short Vowels

The approximate tongue positions of the long vowels are given in the vowel diagram given below:

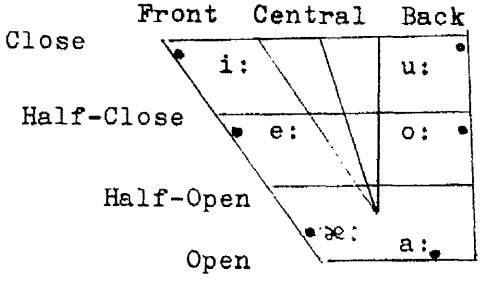

Fig. 2. Long Vowels

The diagrams show that there are perceptible quality differences accompanying the variations of length except in the case of [æ] and [æ:]. Vowel length is significant in Sinhalese: the distinction of long and short vowels is clearly marked by differences in duration and these give differences in meaning. Apart from this, vowel qualities vary slightly according to adjacent sounds.

2.2.1.1.1 Voicing

All Sinhalese vowels are produced with the vocal cords vibrating, and are therefore voiced.

2.2.1.1.2. Position of the soft palate

In all syllables where there are no nasal consonants preceding or following a vowel articulation, Sinhalese vowels are pronounced with the soft palate raised. But when they are preceded or followed by a nasal consonant in the same syllable, vowels tend to be nasalized.

e.g. [ãnĩnə̃va] "prick"
[pãnĩnə̃va] "jump"

It is, however, clear that vowels preceding prenasalized stops are more strongly nasalized than those preceding full nasal sounds.

e.g. [bãd̃ĩnə̃va] "bind"
[ãd̃ĩnə̃va] "draw"

2.2.1.1.3. Lip-position

Spread: [i,i:,e,e:,æ,æ:]
Rounded: [o,o:,u,u:]
Neutral: [a,a:,ə]

2.2.1.1.4. Jaw opening

Narrow: [i,i:,u,u:]
Medium: [e,e:,o,o:,ə]
Wide: [æ,æ:,a,a:]

2.2.1.1.5 The distribution of vowels

All the short vowels except [ə] occur verb initially.

e.g. irənəva "tear"
elənəva "lay"
ælenəva "stick"
unənəva "spring"
otənəva "fold"
adinəva "pull"

Of the long vowels, however, it was possible to find examples only for [e:], [æ:] and [a:]. But this is not to

say that other parallel long vowels of the given short vowels are impossible.

e.g. e:dənəva "mix"
æ̃:dənəva "join"
a:rənəva "become big"

All short and long vowels occur in initial syllables where they follow a C but [ə] is more common in non-initial position.

e.g. pihinəva "wipe"
pi:rənəva "comb"
temənəva "wet"
te:renəva "understand"
kæ̃dəvənəva "call"
pæ:renəva "hurt"
duvənəva "run"
pu:dinəva "blossom"
gotənəva "knit"
ho:dənəva "wash"
kapənəva "cut"
pa:rənəva "rehurt"
kərənəva "do"

[ə] is limited to the example given above.

Of short vowels [i], [e], [u], [a] and [ə] occur in the verb final position and of long vowels only [i:] and [a:] occur.

e.g. kapəpi "did cut"
kæpuve "what...cut"
kæpunu "cut(past invol.participle)"
kapənəva "cut"
kæpuvə "cut(past vol.participle)"
kæpi-kæpi: "cutting"
kapə-kapa: "cutting (vol.)"

When short vowels occur in the verb final position after a CC group a glottal stop follows them.

e.g. inne$\underline{?}$ "stay (invol.non-past emph.)"
æddə$\underline{?}$ "pulled (vol. past emph.)"
unnə$\underline{?}$ "stayed"

2.2.1.2. Diphthongs

I have not found any reference to diphthongs of verb forms in the Sinhalese literature even though Kekulawala (1964: 23) has given thirteen diphthongs for Sinhalese nouns in his thesis. I have, however, found six diphthongs, namely, [ei], [eu], [æu], [oi], [ai] and [au]. It is, however, necessary to say that they are phonetic diphthongs. The mode of forming those diphthongs is given in the diagrams given on pages 48,49 with reference to the cardinal vowel fig.3 and 4.

In the diagrams, the dots represent the approximate starting positions of the Sinhalese diphthongs. The arrows show the direction in which the tongue moves and the positions of the ends of the arrows show the limits of movement of the tongue in each case.

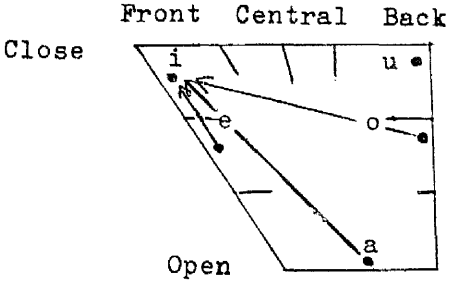

Fig. 3 Diphthongs

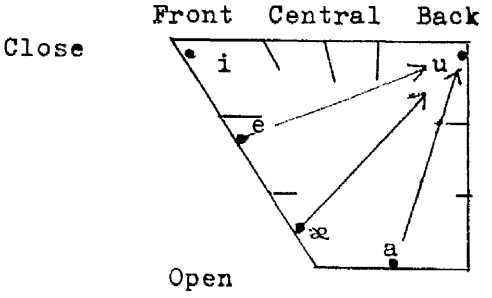

Fig. 4 **Diphthongs**

2.2.1.2.1 Lip position of diphthongs

Spread at the beginning and slightly rounded at the end: [eu] and [æu].

Rounded at the beginning and slightly spread at the end: [oi]

Spread throughout: [ei]

Neutral at the beginning and slightly spread at the end: [ai]

Neutral at the beginning and slightly rounded at the end: [au]

2.2.1.2.2. Jaw positions of diphthongs

Medium to narrow: [ei], [eu] and [oi]

Wide to narrow: [æu], [ai] and [au]

Examples for the above description are given below:

ei	"may come"
peuna	"was drunk"
boi	"may drink"
kæuna	"was eaten"
ainəva	"prick"
paləjau	"go"

2.2.1.2.3. The Distribution of diphthongs

The following diphthong occurs verb initially:

[ei] ei "may come"

The following diphthongs occur verb finally:

[ei] kæpei "may be cut"

[oi] boi "may drink"

[ai] balai "may look"

[au] palǝjau "go"

2.2.2. Consonants

The classes of consonant sound in Sinhalese and the symbols used in this thesis are set out in Table 1 below.

	Bilab.	Lab-den.	Aleo.	Retro.	Pal.	Vel.	Glot.
Plosive	p b		t d	ṭ ḍ	č ǰ	k g	ʔ
Nasal	m		n	ṇ [1]	ɲ	ŋ	
Lateral			l				
Flap			ṛ r				
Fricative	(ɸ)[2]		s		ʃ		h
Approxi.		v			j		

Table 1. Consonants

2.2.2.1 The Distribution of consonants

The distribution of consonants can be given as follows:

1. Only [ŋ], [t] and [ʔ] occur in the verb final

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[1] This occurs before homorganic retroflex plosives only.

[2] [ɸ] occurs in English loans of educated speech whereas uneducated people substitute it by [p] except in one stem, namely, o:ɸ-.

position.

e.g.	ka:paŋ	"eat"
	kæ:vot	"if...eat"
	kanneʔ	"eat (non-past emp.)[3]

2. All consonants except [č], [ǰ], [ɲ], [ɳ], [ŋ], [ʔ] occur intervocalically in simple verbs.

e.g.	[p]	kapənəva	"cut"
	[b]	obənəva	"press"
	[t]	otənəva	"fold"
	[d]	adinəva	"pull"
	[ṭ]	naṭənəva	"dance"
	[ḍ]	kaḍənəva	"break"
	[k]	dakinəva	"see"
	[g]	laginəva	"lay"
	[m]	damənəva	"drop"
	[n]	anənəva	"mix"
	[s]	hasurəvənəva	"control"
	[l]	balənəva	"look"
	[r]	kərənəva	"do"
	[h]	ahanəva	"ask"
	[v]	tavənəva	"foment"
	[j]	kijənəva	"say"[4]

3. In simple verbs, except for [ṭ], [ḍ], [č], [ǰ], [ɲ], [ɳ], [ŋ] and [ʔ] all consonants given in the above chart occur verb initially.

e.g.	[p]	palənəva	"split"
	[b]	balənəva	"look"
	[t]	talənəva	"hit"

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[3]. In verb final position [n] is long. [t] is usually not released in verb final position. When released, however, it is aspirated.

[4]. Voiceless plosives are not aspirated at all in verb medial position.

[d] d̪amənəva "drop"
[k] k̪anəva "eat"
[g] galənəva "flow"
[m] m̪adinəva "rub"
[n] n̪amənəva "bend"
[l] l̪anəva "eat"
[h] h̪adənəva "make"
[v] v̪anənəva "wave"
[j] j̪avənəva "send"
[s] s̪u:rənəva "scratch"
[r] r̥avənəva "frown"

In phrasal verbs, however, [ṭ], [ḍ], [č], [ǰ], [ʃ] and [ɲ] occur verb initially.

e.g. [ṭ] ṭagga:nəva " a sound of a crack"
[ḍ] ḍagga:nəva "a sound of a band"
[č] črisga:nəva "a sound which arises when water is compressed"
[ǰ] ǰarasga:nəva "a breaking sound"
[ɲ] ɲarasga:nəva "a breaking sound of a yarm"
[ʃ] ʃe:pvenəva "avoid"[5]

2.2.2.2 Prenasalized plosives

The prenasalized plosives, [b̃], [d̃], [ḍ̃] and [g̃] and, as will be discussed later, nasal plosive clusters such as [mb], [nd], [ṇḍ] and [ŋg] occur intervocalically only. The common characteristic of both the pre-nasalized plosives and nasal plosive clusters is that in articulation the soft palate lowers in the preceding vowel and remains so until the articulation of the plosive. Phonetically, the prenasalized plosives are shorter than the nasal plosive clusters in duration; also while pre-nasalized plosives are similar in duration to single

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5. In verb initial position, voiceless plosives are slightly aspirated.

plosive articulations nasal plosive clusters are similar in duration to long plosives; De Silva (1957) demonstrated this instrumentally.

At the phonological level pre-nasalized plosives are analysed as single units for the following reasons:

1. The central vowel precedes single consonants but cannot precede clusters or double consonants. The low back vowel is found in these contexts. For example,

	balənəva	"look"
	kapənəva	"cut"
but	balandə	"to look"
	kapandə	"to cut"

The central vowel precedes the pre-nasalized plosives and this indicates that they should be treated as single units.

e.g. narə̃bənəva "watch"

2. In the following verb forms, single consonants occur in inter-vocalic position of Non-past tense stems and they are geminated in the past tense forms.

Non-past		Past	
aninəva	"prick"	ænna	"pricked"
adinəva	"pull"	ædda	"pulled"
ĩ̃binəva	"kiss"	imba	"kissed"

In these examples, the nasal plosive cluster [mb] is parallel to [nn] and [dd] and the pre-nasalized bilabial plosive [b̃] is parallel to [n] and [d].

2.2.2.3 [j] and [v]

Kekulawala (1964) and De Silva (1958) have considered [v] and [j] as prosodies and not as C units on the grounds that they differ from consonants:

1. They do not occur in VC type syllables.
2. They do not geminate.
3. There are no [vu] and [ji] syllables.

According to the third point, De Silva (1957) says j-

initial prosody and prosody of frontness and v- initial prosody and prosody of backness are mutually exclusive. This mutual exclusiveness shows the validity of handling [v] and [j] in terms of prosodies. However, for the reasons given below it is possible to analyse them as C units.

2.2.2.3.1 Past and non-past parallel invol. forms

As will be shown in the sixth chapter, the conjugation marker of the invol. non -past forms is [e] and that of the past invol. forms is [u]. Thus, forms with CVC type stems are given as follows:

Non-past		Past	
kæpenəva	"cut(invol.)"	kæpuna	"cut(invol.)"
CVC-e-CVCV		CVC-u-CV	
mærenəva	"kill(invol.)"	mæruna	"killed(invl.)"
CVC-e-CVCV		CVC-u-CV	

According to the forms given above the past form of non-past

mævenə͡va CVC-e-CVCV "create (invol.)" should be considered as mævuna CVC-u-CV "create (invol)" where the shape of the stem is mæv- although it occurs as mæuna phonetically. The example given above indicates that even though [v] does not occur before [u], phonologically [vu] is possible. In this sense the third point made by De Silva (1958) and Kekulawala (1964) seems to be invalid.

2.2.2.3.2 Non-past vol. and invol. parallel forms

In the following forms, the V systems of the VCVCC type stem are back when they are in volitive forms, and front when they are in involitive forms.[6]

Vol.		Invol.
uluppənəva	"pull out"	ilippenəva

6. This is discussed in prosodic terms in chapter 6.

VCVCC-ə-CVCV	VCVCC-ə-CVCV
atullənəva "rub"	ætillenəva
VCVCC-ə-CVCV	VCVCC-ə-CVCV

According to the structure of the above verbs, the parallel vol. form of the invol. ævissenəva VCVCC-ə-CVCV should be avussənə͡va VCVCC-ə-CVCV even though it occurs as aussən-va VVCCCVCV phonetically. Similar examples can be given for [j] from nouns but not from verbs, and I shall, therefore, not discuss them here. The first and second points made by De Silva (1958) and Kekulawala (1964) seem to be phonetically correct but it is not clear why they should be taken as reasons for treating [v] and [j] as prosodies. For instance, [n̥] does not geminate and [t̥] and [d̥] do not occur in VC type syllables but they are not treated as prosodies. As will be explained in the sixth chapter, however, [v] and [j] are treated as junction prosodies in certain contexts.

2.2.2.4 Consonant groups

Consonant groups are of three types; i) double consonants, ii) homorganic nasal plosive groups and iii) non-homorganic consonant groups.

i) Double consonants:

In this type of consonant group the place and manner of articulation are constant throughout, and the group is either wholly voiceless or wholly voiced. There is no release between the members of the consonant group; the duration of the consonantal articulation is about double the simple consonantal articulation of the type. With the exception of [n̥], [h], [j̆], [v], [r] and [j] any of the consonants may occur in a consonant group of this type.

e.g.	[pp]	kappənəva	"force to cut"
	[bb]	tibbaʔ	"put"
	[tt]	gattaʔ	"took"

[dd]	ædda$^{?}$	"pulled"
[ṭṭ]	nægiṭṭa$^{?}$	"stood"
[ḍḍ]	pæḍḍa$^{?}$	"broke wind"
[čč]	puččənəva	"burn"
[kk]	vakkərənəva	"pour"
[gg]	lægga$^{?}$	"laid"
[mm]	dammənəva	"force to put in"
[nn]	pannənəva	"expel"
[ll]	allənəva	"catch"
[ss]	ussənəva	"raise"

ii) Nasal-plosive groups:

In simple verb forms, a consonant group of this kind consists of a nasal articulation of relatively long duration followed by a plosive which is voiced. No voiceless plosives are found in this group, and the nasal is always homorganic with the following plosive.

e.g.			
	[mb]	tambənəva	"boil"
	[nd]	andənəva	"dress"
	[ṇḍ]	deṇḍə	"to give"
	[ŋg]	haŋgənəva	"hide"

iii) Non-homorganic consonant groups:

In phrasal verbs, however, consonant groups, namely, [pg], [bd], [pr], [tv], [jk], [kv], [ŋk], [nk], [ŋv], [st], [sṭ], [sk], [sg], [sv], [sn], [ɸk], [hg], [vk], [lk], [rd], [rj], [rn] and [ǰk] are also found.

[pg]	pi:pga:nəva	"make Pi:p sound"
[bd]	nissabdəvenəva	"silence"
[pr]	prəsnəkərənəva	"question"
[tv]	ratvenəva	"warm"
[ǰk]	ča:ǰkərənəva	"charge"
[kv]	ulukvenəva	"sprain"
[ŋk]	veŋkərənəva	"separate"
[ŋv]	laŋvenəva	"come close"

[st]	vistərəkərənəva	"explain"
[st̪]	registərəkərənəva	"register"
[sk]	ræskərənəva	"collect"
[sg]	čirisga:nəva	"the squelching sound of water"
[sn]	presnəkərənəva	"question"
[sv]	asvenəva	"resign"
[ɸv]	o:ɸvenəva	"be off"
[hg]	tahga:nəva	"a small fall onto wet ground"
[vk]	hilavkərənəva	"recoup"
[lk]	ad̪əvalkərənəva	"close a little"
[rd]	vardənəjəkərənəva	"grow"
[rn]	varnənəa:kərənəva	"praise"
[rǰ]	tarǰənəjəkərənəva	"threat"
[ǰk]	ča:ǰkərənəva	"charge"

2.3 Part 2

As noted above, this part of the chapter deals with syllable structure, syllable quantity, syllable division and syllable prominence.

2.3.1 Syllable structure

The vocalic articulation is the nucleus of the syllable. The possible structures of the syllable are given as follows (the syllable under discussion is underlined):

V	enəva	"come"
V̄	a:va	"came"
VC	end̪ə	"come(imperative)"
CV	kanəva	"eat"
CV̄	na:nəva	"bathe"
CVC	dannəva	"know"
CV̄C	pa:ssənəva	"weld"

2.3.2 Syllable quantity

In traditional grammer,[7] two syllable quantities are given as follows: 1. heavy syllables: V, CV, CVC and CVC
2. light syllables: V, CV, and VC

De Silva (1958) and Kekulawala (1964) have discussed three types of syllable quantity, namely, short, medium and long. Their short quantity syllables are of two types, V and CV which are open. For example:

CV kanəva "eat"

Medium quantity syllables are of three types, VC, CVC V and CV. For example,

VC asvenəva "resign"
CVC dannəva "know"
$\bar{V}$ e:dənəva "prepare a curry"
C$\bar{V}$ pa:rənəva "re-hurt"

Here $\bar{V}$ and C$\bar{V}$ are open syllables and VC and CVC are closed.

Long quantity is of two types, $\bar{V}$C and C$\bar{V}$C. For example,

$\bar{V}$C æ:tvenəva "separate"
C$\bar{V}$C hu:llənəva "sigh"

It seems, however, that the analysis in terms of three syllable quantities can only be justified phonetically. In my view, a system of two syllable quantities is enough for a phonological analysis, but it should be slightly different from the traditional classification. My syllable division in terms of quantity is as follows:

1. short syllables: V and CV
2. long syllables: VC, $\bar{V}$, $\bar{V}$C, C$\bar{V}$, CVC and C$\bar{V}$C.

Such an analysis enables me to handle verb stress effectively.

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7. A comprehensive grammar of the Sinhalese, Gunasekara (1891).

2.3.3 Syllable division

The initial C- belongs to the syllable whose nucleus is the following V. The final C belongs to the syllable whose nucleus is the preceding V. Thus, the forms such as

kapə "cut"
kamu "let us eat"
gijat "even if... go"
ka:paŋ "eat"

may be divided into two syllable as

ka-pə "cut"
ka-mu "let us eat"
gi-jat "even if...go"
ka:-paŋ "eat"

As already stated, in Sinhalese verb forms consonant clusters are not found in word initial and final positions. Therefore, verbs such as ẹṇḍə"come" and allə "catch" are best divided into two syllables as ẹṇ-ḍə and al-lə and this is in keeping with the rule for syllable division given above.

However, a question arises in the syllable division of disyllabic verbs of VCV type such as

ihə "sprinkle"
ænə "prick"
otə "fold"

which can be divided as

ih-ə VC-V
æn-ə VC-V
ot-ə VC-V

or as i-hə V-CV
æ-nə V-CV
o-tə V-CV

They are more satisfactorily divided as

i-hə V-CV
æ-nə V-CV
o-tə V-CV

on the basis of the native speakers' intuition in dividing them in language games, jokes etc.

2.3.4 Syllable prominence

Syllable prominence depends on syllable quantity and the place where it occurs in the verb. If all syllables in a verb are short the first syllable is stressed and is the most prominent.

e.g. natənəva 'CVCVCVCV "dance"
balənəva 'CVCVCVCV "look"

If one syllable is long and others are short, no matter where the long syllable occurs it is stressed.

e.g. ugannənəva V'CVCCVCVCV "teach"
mudo:nəva CV'C̄VCVCV "coagulate"

If a verb has more than one long syllable (V̄, V̄C, CVC, CV̄,CV̄C) all of them are stressed but the first long syllable becomes prominent.

e.g. gasso:nəva 'CVCCV̄CVCV "cause to hit"
asso:nəva 'VCCV̄CVCV "cause to ask"

To summarize, I have discussed vowel and consonantal articulations and their distribution and types of consonant group in part 1 of this chapter. Discussed in part 2 are syllable structure, syllable quantity, syllable division and syllable prominence.

CHAPTER 3

3.0 SIMPLE VERB STEMS

3.1 This chapter deals with syllable structure of verb stems and contrasts and functions of C and V systems and prosodies within stems. The relationship between initial and final syllables is also discussed here.

3.2 Syllable structure of stems

Stems are divided into two groups, monosyllabic and disyllabic. They are either V or C initial and V or C final. Here I have given stem structures as morphological abstractions. In [kapəna va] for example, the stem is monosyllabic CVC in generalized structure. The structure of the whole word is CVCVCVCV. The morphological division of this is CVC-V-CVCV: the stem is CVC-, the conjugation marker is -V- and the suffix is -CVCV. But phonologically this involves four syllables divided as CV-CV-CV-CV. The generalized stem structures are as follows:

3.2.1 Monosyllabic stems:

C initial and V final

CV	ka-	"eat"
C$\bar{V}$	na:-	"bathe"

C initial and C final

CVC	kap-	"cut"
CVCC	gass-	"shake"
C$\bar{V}$CC	pa:ss-	"weld"

V initial and V final

V	e-	"come"

V initial and C final

VC	in-	"stay"
V̄C	a:r-	"become big"
VCC	all-	"catch"

3.2.2 Disyllabic stems:

C initial and C final

CVCVC	varəd-	"mistake"
CVCCVC	vakkər-	"pour"
CVCV̄C	kaka:r-	"decoct"
CVCVCC	viritt-	"grin"

V initial and C final

VCVC	utur-	"overflow"
VCVC	udur-	"uproot"

3.3 **Vol. and Invol. stem structures**

As illustrated in the appendix, the Sinhalese verb is divided into two types, volitive and involitive: volitive verbs have four conjugation classes and involitive verbs fall into one class. In the analysis, the volitive stems are dealt with first. An analysis of C systems is followed by the analysis of V systems. Prosodies are also described.

3.3.1 Vol. stems

Volitive stems have four conjugation classes, 1,2,3 and 4. The basis for these four classes is given in chapter 6.

3.3.1.1 Stems of conjug. 1

Conjugation 1 has monosyllabic and disyllabic stems.

3.3.1.1.1 Monosyllabic stems:

Monosyllabic stems have four types of structure, CVC,CVCC,VC and VCC

The CVC structure:

The possible patterns of this stucture are as follows:

PVP	PVN	PVS	PVL	PVM
NVP	NVN	NVS	NVL	-
SVP	SVN	SVS	SVL	-
LVP	LVN	LVS	LVL	LVM

The PVP pattern:

The P systems are described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be represented as $^{h}/_{\underline{h}}PV^{h}/_{\underline{h}}P$. The P initial system has three terms, p, t and k and the P final system has four terms, p, t, $\underline{t}$ and k. Thus, there is no contrast of systems in the pattern but there is a contrast of terms as follows:p-t, p-k, t-p, k-p, k-t and k-$\underline{t}$.

$^{h}P_{p}V\underline{h}P_{t}$	pud-	"offer"
$^{h}P_{p}V\underline{h}P_{k}$	pa:g-	"trample"
$^{h}P_{p}V^{h}P_{t}$	pat-	"wish"
$\underline{h}P_{t}V^{h}P_{p}$	dap-	"lay on the ground"
$\underline{h}P_{k}V^{h}P_{t}$	got-	"knit"
$\underline{h}P_{k}V^{h}P_{\underline{t}}$	ga:$\underline{t}$-	"waggle"
$^{h}P_{k}V\underline{h}P_{\underline{t}}$	ka$\underline{d}$-	"break"
$^{h}P_{k}V^{h}P_{p}$	kap-	"cut"

A three grade contrast, ŧ,∈ and α is required to described V systems and they are examined in relation to stem prosody all being w prosodic. Prosody of length may be short or long when V is α and otherwise it is short.

$C\text{ŧ}^{w}C$	pud-	"offer"
$C\in^{w}C$	got-	"knit"

$C\breve{a}^{w}C$	kap-	"cut"
$C\bar{a}^{w}C$	pa:g-	"trample"

The PVN pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the above pattern may be represented as follows: $^{h/\underline{h}}$PVN. The P system has three terms, p, t and k and the N system has two terms, p and t. There is a contrast of systems, P-N in the pattern and the contrast of terms is as follows: p-t, t-p and k-t.

e.g.	$^{h}P_{p}VN_{t}$	pi:n-	"swim"
	$^{\underline{h}}P_{t}VN_{p}$	dam-	"put in"
	$^{h}P_{t}VN_{p}$	tem-	"wet"
	$^{\underline{h}}P_{k}VN_{t}$	gen-	"cause to bring"

The V system may be $\imath$, ϵ or $\breve{a}$. $\imath$ and ϵ function in y prosodic stems and $\breve{a}$ functions in w prosodic stems. Length prosody may be short or long when V is $\imath$, otherwise it is short.

$C\imath^{y}C$	din-	"win"
$C\bar{\imath}^{y}C$	pi:n-	"swim"
$C\epsilon^{y}C$	tem-	"wet"
$C\breve{a}^{w}C$	dam-	"put in"

The PVS pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be represented as $^{h/\underline{h}}$PVS. The P system has two terms, p and k and the S system has one term, ?. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows: p-? and k-?.

e.g.	$^{h}P_{p}VS_{?}$	pah-	"cause to mature"
	$^{h}P_{k}VS_{?}$	kah-	"scratch"
	$^{\underline{h}}P_{k}VS_{?}$	gah-	"hit"

The V system is always $\breve{a}$ and it functions in w prosodic stems. Length prosody is short.

e.g.	$C\breve{a}^{w}C$	kah-	"scratch"

The PVL pattern:

The P system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as ʰ/h̲PVL. The P system has three terms, p, t and k and the L system has four terms, p, t, ṭ and č. There is a contrast of systems, P-L in the pattern and the contrast of the terms is as follows: p-t, p-ṭ, p-č, t-p, t-ṭ, t-č, k-p, k-t, k-ṭ and k-č.

e.g.	ʰPₚVLᵗ	pal-	"split"
	h̲PₚVLṭ	bur-	"bark"
	ʰPₚVLč	pa:j-	"become clear of the weather"
	ʰPₜVLₜ	tal-	"hammer"
	ʰPVLč	tij-[1]	"have"
	h̲PₜVLₚ	dov-	"to draw milk"
	h̲PₜVLṭ	dir-	"decay"
	ʰPₖVLč	kij-	"say"
	h̲PₖVLₚ	ga:v-	"cause to smear"
	h̲PₖVLₜ	gal-	"flow"
	h̲PₖVLṭ	gar-	"riddle"

The V system may be ɪ, ɛ or ɑ. ɪ functions in y and w prosodic stems, ɛ functions in w,y and ə prosodic stems and ɑ functions in w prosodic stems. Length prosody may be short or long.

e.g.	CɪʸC	dir-	"decay"
	CɪːʸC	pi:r-	"comb"
	CɪʷC	bur-	"bark"
	CɛʷC	pol-	"winnow"
	CɛːʷC	to:r-	"choose"
	CɛʸC	per-	"filter"
	Cɛᵊ C	kər- ɪ	"do"
	CɑʷC	gal-	"flow"
	CɑːʷC	pa:r-	"hurt"

[1] tij- and kər-are treated as irregular stems.

The PVM pattern:

This pattern is limited to one stem where the P system is described in relation to h prosody. Thus the pattern can be given as ^{h}PVM. The P system has the term p and the M system has the term k. There is a contrast of systems, P-M and the contrast of terms is p-k.

e.g. $^{h}P_{p}VM_{k}$ pog̃- "soak"

The V system is ϵ and it functions in a w prosodic stem. Length prosody is short.

$C\epsilon^{w}C$ pog̃- "soak"

The NVP pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $NV^{h/\underline{h}}P$. The N system has two terms p and t and the P system has three terms, t, $\dot{t}$ and k. There is a contrast of systems, N-P in the pattern and the contrast of the terms is as follows: p-t, p-k and t-$\dot{t}$.

e.g. $N_{p}V^{h}P_{k}$ mak- "erase"

$N_{p}V\underline{h}P_{t}$ mud- "cause to coagulate"

$N_{t}V^{h}P_{\dot{t}}$ nat̤- "dance"

The V system may be ɩ or α and the stem is w prosodic. Length prosody is short.

e.g. $C\iota^{w}C$ mud- "cause to coagulate"

$C\alpha^{w}C$ nat̤- "dance"

The NVN pattern:

The N initial and N final systems have two terms, p and t. There is no contrast of systems in the pattern and the contrast of terms is as follows: p-t and t-p.

e.g. $N_{p}VN_{t}$ ma:n- "aim at"

$N_{t}VN_{p}$ nam- "bend"

The V system is α and the stem is w prosodic. Length prosody may be short or long.

e.g. $C\bar{a}^{w}C$ ma:n- "aim at"
$Ca^{w}C$ nam- "bend"

The NVL pattern:

The N system has two terms, p and t and the L system has the terms t and ṭ. There is a contrast of systems, N-L in the pattern and the contrast of terms is as follows: p-ṭ and t-ṭ.

e.g. $N_{p}VL_{\dot{t}}$ mar- "kill"
$N_{t}VL_{t}$ nel- "pick out"
$N_{t}VL_{\dot{t}}$ ner- "bulge"

The V system may be ϵ or α. ϵ functions in y or w prosodic stems and α functions in w prosodic stems. Length prosody may be short or long when V is ϵ, otherwise it is short.

e.g. $C\epsilon^{y}C$ nel- "pick out"
$C\bar{\epsilon}^{w}C$ mo:r- "mature"
$Ca^{w}C$ mar- "kill"

The NVS pattern:

The pattern is limited to one stem where the N system has the term p and the S system has the term ʔ. Thus there is a contrast of systems, N-S in the pattern, and the contrast of terms is p-ʔ.

e.g. $N^{p}{}_{v}S_{\text{ʔ}}$ mah- "sew"

The V system is α and the stem is w prosodic. Length prosody is short.

e.g. $Ca^{w}C$ mah- "sew"

The SVP pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $SV^{h/\underline{h}}P$. The S system has one term, ʔ and the P system has two terms, p and t. There is a contrast of systems, S-P in the pattern and the contrast of terms is as follows: ʔ-p and ʔ-t.

e.g. $S_{\text{ʔ}}V^{h}P_{p}$ hap- "bite"

$S_{ɪ}V^{h}P_{t}$ had- "make"

$S_{ɪ}V^{h}P_{t}$ hit- "think"

The V systems may be ɪ ,ɛ or ɑ. ɪ functions in y prosodic syllables and ɛ and ɑ function in w prosodic syllables. Length prosody is long when V is ɛ, otherwise it is short.

e.g. $CɪʸC$ hit- "think"

$C\bar{ɛ}^{w}C$ ho:d- "wash"

$Cɑ^{w}C$ had- "make"

The SVN pattern:

The pattern is limited to one stem where the S system has the term ʔ and the N system has the term p. There is a contrast of systems, S-N in the pattern and the contrast of terms is as follows: p-ʔ.

e.g. $S_{ʔ}VN_{p}$ ham- "blow"

The V system is ɑ and the stem is w prosodic. Length prosody is short.

e.g. $Cɑ^{w}C$ ham- "blow"

The SVS pattern:

The pattern is limited to one stem where the S initial system has the term t and the S final system has the term ʔ. There is no contrast of systems in the pattern but there is a contrast of terms as follows: t-ʔ.

e.g. $S_{t}VS_{ʔ}$ sa:h- [2] "suffice"

The V system is ɑ and the stem is w prosodic. Length prosody is long.

e.g. $C\bar{ɑ}^{w}C$ sa:h- "suffice"

The SVL system:

The S system has two terms, t and ʔ and the L system has three terms, t, ṭ and č. There is a contrast of

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[2] In colloquial Sinhalese, only invol. form of this stem is used.

systems, S-L in the patterm and the contrast of terms is as follows: t-ṭ, ʔ-t, ʔ-t and ʔ-č̣.

e.g. $S_tVL_{\dot{t}}$ su:r- "scratch"
$S_ʔVL_{\check{c}}$ hoj- "find"
$S_ʔVL_t$ hal- "filter"
$S_ʔVL_{\dot{t}}$ ha:r- "dig"

The V system may be ɩ, ∈ or α. ∈ functions in y and w prosodic syllables and ɩ and α function in w prosodic syllables. Length prosody may be short when V is ∈ and otherwise it is long.

e.g. $C\bar{ɩ}^wC$ su:r- "scratch"
$C∈^yC$ hel- "drop"
$C∈^wC$ hoj- "find"
$C\bar{α}^wC$ ha:r- "dig"

The LVP pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus the pattern can be given as $LV^{h/\underline{h}}P$. The L system has four terms, p, t, ṭ and č̣ and the P final system has two terms, t and ṭ. There is a contrast of systems, L-P and the contrast of terms is as follows: p-t, p-ṭ, ṭ-t and č̣-t.

e.g. $L_pV^hP_{\dot{t}}$ vaṭ- "cause to drop"
$L_pV^{\underline{h}}P_t$ vad- "deliver a child"
$L_{\dot{t}}V^{\underline{h}}P_t$ rid- "cause to ache"
$L_{\dot{t}}V^hP_{\dot{t}}$ ru:ṭ- "slip"
$L_{\check{c}}V^{\underline{h}}P_t$ jod- "employ"

The V system may be ɩ, ∈ or α. ɩ functios in y and w prosodic stems and ∈ and α function in w prosodic stems. Length prosody may be short or long when V is ɩ, otherwise short.

e.g. $Cɩ^yC$ rid- "cause to ache"
$C\bar{ɩ}^wC$ ru:ṭ- "slip"
$C∈^wC$ jod- "employ"
$Cα^wC$ vad- "deliver a child"

The LVN pattern:

The pattern is limited to one stem where the L system has the term p and the N system has the term t. There is a contrast of systems, L-P in the pattern and the contrast of terms is p-t.

e.g. L_pVN_t van- "wave"

The V system is α and the stem is w prosodic. Length prosody is short.

e.g. $C\alpha^wC$ van- "wave"

The LVS pattern:

The L system has two terms, p and t and the S system has one term, ʔ. There is a contrast of systems, L-S in the pattern and the contrast of terms is as follows: p-ʔ and t-ʔ

.

e.g $L_pVS_ʔ$ vah- "close"

$L_tVS_ʔ$ leh- "untie"

The V system may be ∈ or α and they function in y and w prosodic stems respectively. Length prosody is short.

e.g. $C\alpha^wC$ vah- "close"

$C\epsilon^yC$ leh- "untie"

The LVL pattern:

The L initial system has three terms, p, t and ṭ and the L final system also has three terms, p, t and č. There is no contrast of systems in the pattern and the contrast of terms is as follows: p-t, p-č, t-č, t-p and ṭ-p.

e.g. L_pVL_p vav- "grow"

L_pVL_t ve:l- "dry"

$L_pVL_č$ vij- "weave"

$L_tVL_č$ lij- "write"

L_tVL_p lov- "lick"

$L_ṭVL_p$ rav- "frown"

The V systems may be ɩ , ∈ or α . ɩ functions in y prosodic stems, ∈ functions in y and w prosodic stems and α functions in w prosodic stems. Length prosody is short when V is ɩ,

otherwise it may be short or long.

e.g.	$C\iota^{\nu}C$	vij-	"weave"
	$C\bar{\epsilon}^{\nu}C$	ve:l-	"dry"
	$C\epsilon^{w}C$	lov-	"lick"
	$C\alpha^{w}C$	rav-	"frown"
	$C\bar{\alpha}^{w}C$	va:v-	"bear"

The LVM pattern:

The pattern is limited to one stem where the L system has the term $\underset{\cdot}{t}$ and the M system has the term t. There is a contrast of systems, L-M in the pattern and the contrast of terms is as follows: $\underset{\cdot}{t}$-t.

e.g. $L_{\underset{\cdot}{t}}VM_{t}$ rad- "remain"

The V system is α and the stem is w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C$ rad- "remain"

The CVCC structure:

This structure has the following patterns:

PVPP	PVNP	-	PVNN	PVSS	PVLL
SVPP	SVNP	SVPN	-	-	SVLL
LVPP	LVNP	-	-	LVSS	-

The C systems of the CC cluster may be either two homorganic C systems or a homorganic nasal plus plosive cluster except in the case of SVPN where the cluster is non-homorganic. In the first case they have the same systems and the same terms and in the second case they have the same terms. The third case is treated as an exception. Thus, compared with the patterns of the CVC structure given above, the patterns of the CVCC structure can be treated as combinations of those of the CVC structure. For example, the difference between the PVP and PVPP is that the latter has an additional P which is homorganic with the stem final P system. In the analysis, the terms of those CC clusters are described together as they are

homorganic.

The PVPP pattern:

The P systems are described in relation to h and h̲ prosodies. Thus the pattern can be given as $^{h}/_{\underline{h}}$PV$^{h}/_{\underline{h}}$PP. The P initial system has three terms, p, t and k and the P systems of the PP cluster have three terms, t, č and k. There is no contrast of systems in the pattern and the contrast of the terms is as follows: p-č, t-k and k-t.

e.g.	$^{h}P_{p}V^{h}PP_{č}$	pučč-	"burn"
	$^{\underline{h}}P_{t}V^{h}PP_{k}$	dakk-	"set forth"
	$^{h}P_{k}V^{\underline{h}}PP_{t}$	ku:dd-	"awaken"

The V systems may be ɩ or α and they function in w prosodic syllables. Length prosody may be short or long when V is ɩ, otherwise it is short.

e.g.	CɩʷCC	pučč-	"burn"
	C$\bar{\text{ɩ}}$ʷCC	ku:dd-	"awaken"
	CαʷCC	dakk-	"set forth"

The PVNP pattern:

The P initial and final systems are described in relation to h and h̲ prosodies respectively. Thus the pattern can be given as ^{h}PVN$^{\underline{h}}$P. The P initial system has three terms, p, t and k and the N and P systems of the NP cluster have two terms, p and t. There is a contrast of systems, P-N in the pattern and the contrast of terms is as follows: t-p and k-t.

e.g.	$^{h}P_{p}VN^{\underline{h}}P_{p}$	pumb-	"blow"
	$^{h}P_{t}VN^{\underline{h}}P_{p}$	tamb-	"seethe"
	$^{h}P_{k}VN^{\underline{h}}P_{t}$	kænd-	"call"

The V system may be ɩ or α. ɩ functions in w prosodic stems and α functions in y and w prosodic stems. Length prosody is short.

e.g.	CɩʷCC	pumb-	"blow"
	CαʷCC	tamb-	"seethe"
	CαʸCC	kænd-	"call"

The PVNN pattern:

The P system is described in relation to h prosody. Thus the pattern can be given as ^{h}PVNN. The P system has two terms, p and t. The N systems of the NN cluster have two terms, p and t. There is a contrast of systems, P-N in the pattern but there is no syntagmatic contrast of terms.

e.g. $^{h}P_{p}VNN_{p}$ bumm- "to be sullen"

$^{h}P_{t}VNN_{t}$ dann- "inform"

The V systems may be ɬ or α and they function in w prosodic stems. Length prosody is short.

e.g. $C\text{ɬ}^{w}CC$ bumm- "to be sullen"

$C\alpha^{w}CC$ dann- "inform"

The PVSS pattern:

The pattern is limited to one stem. The P system is described in relation to h prosody. Thus the pattern can be given as ^{h}PVSS. The P system has the term k and the S systems of the SS cluster have the term t. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows: k-t.

e.g. $^{h}P_{k}VSS_{t}$ gass- "spring"

The V system is α and the stem is w prosodic. Length prosody is short.

e.g. $C\alpha^{w}CC$ gass- "spring"

The PVLL pattern:

The P system is described in relation to h prosody. Thus the pattern can be given as ^{h}PVLL. The P system has the term t and the L systems of the LL cluster have two terms,t and č. There is a contrast of systems, P-L in the pattern and the contrast of terms is as follows: t-č.

e.g. $^{h}P_{t}VLL_{t}$ dall- "light"

$^{h}P_{t}VLL_{č}$ dojj- "sleep"

The V system may be ∈ or α and the stems are w prosodic.

Length prosody is short.

e.g. Cɑʷ CC dall- "light"

Cɛʷ CC dojj- "sleep"

The SVPP pattern:

The P systems are described in relation to h prosody. Thus the pattern can be given as SVʰPP. The P systems have the term p and the S system has the term ʔ. There is a contrast of systems, S-P in the pattern and the contrast of terms is: ʔ-p.

e.g. $S_{ʔ}V^{h}PP_{p}$ happ- "knock against"

The V system is ɑ and the stem is w prosodic. Length prosody is short.

e.g. Cɑʷ CC happ- "knock against"

The SVPN pattern:

The P system is described in relation to h prosody. Thus the pattern can be given as SVʰPN. The S system has the term ʔ, the P system and the N system of the PN cluster have the terms k and p respectively. There is a contrast of systems, S-P-N in the pattern and the contrast of terms is as follows: ʔ-k-p.

e.g. $S_{ʔ}V^{h}PN_{p}$ hikm- "cause to discipline"

The V system is ɩ and the stem is y prosodic. Length prosody is short.

e.g. Cɩʸ CC hikm- "cause to discipline"

The SVNP pattern:

The pattern is limited to one stem and the P system is described in relation to h prosody. Thus the pattern can be given as SVNʰP. The S system has the term ʔ and the N system and the P system of the NP cluster have the term k. There is a contrast of the systems, S-N-P in the pattern and the contrast of terms is ʔ-k.

e.g. $S_{ʔ}VN^{h}P_{k}$ hang- "hide"

The V system is ɑ and the stem is w prosodic. Length prosody is short.

e.g. CɑʷCC hang- "hide"

The SVLL pattern:

The S system has the term ʔ and the L systems of the LL cluster have the term t. There is a contrast of systems, S-L in the pattern and the contrast of terms is: ʔ-t.

e.g. SʔVLLt hu:ll- "sigh"

SʔVLLt holl- "shake"

The V system may be ɩ or ɛ and they function in w prosodic syllables. Length prosody is short when V is ɛ and long when V is ɩ.

e.g. CɩʷCC hu:ll- "sigh"

CɛʷCC holl- "shake"

The LVPP pattern:

The pattern is limited to one stem. The P systems are described in relation to h prosody. Thus the pattern can be given as LVhPP. The P systems have the term t the L system has the term p. There is a contrast of systems, L-P in the pattern and the contrast of terms is p-t.

e.g. LpvhPPt vadd- "fix"

The V system is ɑ and the stem is w prosodic. Length prosody is short.

e.g. CɑʷCC vadd- "fix"

The LVNP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus the pattern can be given as LVNhP. The L system has the term t and the N and P systems of the NP cluster have the term k. There is a contrast of systems, L-N-P in the pattern and the contrast of terms is t-k.

e.g. LtVNhPk ring- "creep"

The V system is ɬ and the stem is y prosodic. Length prosody is short.

e.g. Cɬʸ$_{y}$CC ring- "creep"

The LVSS pattern:

The pattern is limited to one stem where the L system as well as the S systems of the SS cluster have the term t. There is a contrast of systems, L-S in the pattern but there is no contrast of terms.

e.g. LtVSSt less- "slip"

The V system is ɛ and the stem is y prosodic. Length prosody is short.

e.g. Cɛʸ$_{y}$CC less- "slip"

The VC structure:

This structure has the following patterns: VP,VN,VS,VL and VM.

The VP pattern:

The P system is described in relation to h and h̲ prosodies. Thus the pattern can be given as Vʰ/ʰ̲P. The P system has two terms, p and t.

e.g. Vʰ̲P$_{p}$ ob- "press"

VʰP$_{t}$ ot- "fold"

Vʰ̲P$_{t}$ e:d- "prepare"

The V systems may be ɬ or ɛ. ɬ functions in y prosodic stems and ɛ functions in y and w prosodic stems. Length prosody may be short or long when V is ɛ, otherwise it is short.

e.g. ɛʷC ob- "press"

ɛʷC ot- "fold"

ɬʸC id- "ripen"

ɛ̄ʸC e:d- "prepare"

The VN pattern:

The N system has the term t.

e.g. VN_t an- "mix"
VN_t un- "spring"

The V systems may be ɪ or ɑ and they function in w prosodic stems. Length prosody is short.

e.g. $ɑ^wC$ an- "mix"
$ɪ^wC$ un- "spring"

The VS pattern:

The pattern is limited to one stem where the S system has the term ʔ.

e.g. $VS_ʔ$ ah- "ask"

The V system is ɑ and the stem is w prosodic. Length is short.

e.g. $ɛ^wC$ ah- "ask"

The VL pattern:

The L system has three terms, t, ṭ and č̣.

e.g. VL_t el- "lay"
$VL_ṭ$ ir- "tear"
$VL_{č̣}$ uj- "cook"

The V systems may be ɪ, ɛ or ɑ. ɪ functions in y and w prosodic stems, ɛ functions in y prosodic stems and ɑ functions in w prosodic stems. Length prosody is long when V is ɑ, otherwise it is short.

e.g. $ɪ^yC$ ir- "tear"
$ɪ^wC$ ur- "suck"
$ɛ^yC$ el- "lay"
$\bar{ɑ}^wC$ a:r- "become big"

The VM pattern:

The M system has four terms, p, t, ṭ and k.

e.g. VM_p ãb- "mould"
VM_t a:d̃- "join"
$VM_ṭ$ ãḍ- "cry"
VM_k ãg̃- "cause to indicate"

The V system is ɑ and the stem is w prosodic. Length prosody may be short or long.

e.g. ɑʷC ab̃- "mould"

ɑ̃ʷC a:d̃- "join"

The VCC structure:

The structure has the following patterns: VNP, VSS and VLL where the CC cluster can be either the homorganic N and P systems or the homorganic L or S systems. Thus, compared with the patterns of the VC structure, VN, VS, and VL, the patterns of the VCC, structure have an additional C which is homorganic. Otherswise, there is no difference between patterns of the VC and VCC in complexity.

The VNP pattern:

The pattern is limited to one stem where the P system is described in relation to h̲ prosody. Thus the pattern can be given as VNʰP. The N and P systems have the term t.

e.g. VNʰPₜ ind- "make stay"

The V system is ɩ and the stem is y prosodic. Length prosody is short.

e.g. ɩʸCC ind- "make stay"

The VSS pattern:

The pattern is limited to one stem where the S systems have the term t.

e.g. VSSₜ uss- "raise"

The V system is ɩ and the stem is w prosodic. Length prosody is short.

e.g. ɩʷCC uss- "raise"

The VLL pattern:

The L systems have the term t.

e.g. VLLₜ ill- "ask for"

VLLₜ ell- "hang"

The V system may be ɩ, ɛ or ɑ. ɩ and ɛ function in y prosodic stems and ɑ functions in w prosodic stems. Length prosody is short.

e.g.	ɩʸCC	ill-	"ask for"
	ɛʸCC	ell-	"hang"
	ɑʷCC	all-	"catch"

3.3.1.1.2 Disyllabic stems

The disyllabic stems have five structures, CVCVC CVCVCC, CVCCVC [3], VCVC and VCVCC. The patterns of the disyllabic stem structures can be treated as combinations of monosyllabic patterns in the sense that there is no difference between monosyllabic and disyllabic structures in complexity. For example, the disyllabic pattern PVNVP can be considered as a combination of the monosyllabic patterns, PV+NVP[4] and the disyllabic pattern PVLVPP can be considered as a combination of PV+LVPP and so forth.

The CVCVC structure:

This structure has the following patterns:

PVPVN	PVPVL	PVNVP
-	SVSVL	PVSVP
-	LVLVL	PVLVP

PVNVL	PVLVS	PVLVL	PVLVM
SVNVL	SVLVS	NVLVL	LVLVM

PVPVN	NVPVL	NVLVP	SVNVS	LVPVS
LVPVN	SVPVL	-	LVNVS	-
-	LVPVL	-	-	-

[3] This structure is limited to one stem which is basically a loan, and therefore treated as an exception. This is analyzed with native stems as this has completely conformed with the native pattern.

[4] Conjug.3 has PV type patterns.

SVPVP - - - -

The PVPVN pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus the pattern can be given as ^{h}PV^{h}PVN. The P initial system has the term t, the P system of the second syllable has the term ṭ and the N final system of the second syllable has the term p. There is a contrast of systems, P-N in the pattern and the contrast of terms is t-ṭ-p.

e.g. $^{h}P_{t}V^{h}P_{\dot{t}}VN_{p}$ taṭəm- "strain"

The contrast of the V systems and syllable prosodies is ɑ and ɛ and they function in w and ə prosodic syllables.

e.g. $C\alpha^{w}C\epsilon^{\ddot{a}}C$ taṭəm- "strain"

The PVPVL pattern:

The P systems are described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $^{h/\underline{h}}$PV$^{h/\underline{h}}$PVL. The P initial system has three terms, p, t and k, the P initial system of the second syllable has three terms t, ṭ and k and the L system of the second syllable has three terms, p, t and ṭ. There is a contrast of the systems, P-L in the pattern and the contrast of terms is as follows: p-t-ṭ, p-ṭ-p, p-t-ṭ, t-ṭ, t-ṭ-p and k-ṭ.

e.g.	$^{h}P_{p}V^{h}P_{t}VL_{\dot{t}}$	patur-	"spread"
	$^{h}P_{p}V^{h}P_{\dot{t}}VL_{t}$	paṭəl-	"twine"
	$^{h}P_{p}V^{h}P_{\dot{t}}VL_{p}$	paṭəv-	"load"
	$^{\underline{h}}P_{t}V^{\underline{h}}P_{t}VL_{\dot{t}}$	dedar-	"shake"
	$^{\underline{h}}P_{t}V^{\underline{h}}P_{\dot{t}}VL_{p}$	doḍav-	"jabber"
	$^{h}P_{k}V^{h}P_{k}VL_{\dot{t}}$	kakaːr-	"decoct"

The syntagmatic and paradigmatic contrast of the V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɛ	w-ə

ɑ-ɛ	w-ə
ɛ-ɛ	y-ə
ɑ-ɑ	

Length may be short or long when V is ɑ , otherwise it is always short.

e.g	CɛʸCɛᵊC	dedər-	"shake"
	CɛʷCɛᵊC	dodəv-	"jabber"
	CɛʷCɩʷC	patur-	"spread"
	CɑʷCɛᵊC	paṭəv-	"load"
	CɑʷCɑ̄ʷC	kaka:r-	"decoct"

The PVNVP pattern:

The pattern is limited to one stem where the P initial system is described in relation to h prosody and the P final system of the second syllable is described in relation to h̲ prosody. Thus the pattern can be given as ʰPVNVh̲P. The P initial system has the term k, the N system has the term p and the P final system of the second syllable has the term t. There is a contrast of the systems, P-N-P in the pattern and the contrast of terms is k-p-t.

e.g. ʰPₖVNₚVh̲Pₜ kumud- "cause to dive"

The V system is ɩ and the syllables are w prosodic. Length prosody is short.

e.g. CɩʷCɩʷC kumud- "cause to dive"

The PVSVP pattern:

The P initial system is described in relation to h prosody and the P final system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as ʰPVSVʰ/h̲P. The P initial system has one term p, the S system has one term ʔ and the P final system of the second syllable has two terms t and ṭ. There is a contrast of the systems, P-S-P in the pattern, and the contrast of terms is as follows: p-ʔ-t and p-ʔ-t.

e.g. ʰPₚVSʔVh̲Pₜ pahad- "make clear"

$^{h}P_{p}VS_{ʔ}V^{h}P_{t̤}$ pihit̤- "take hold"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
α-α	y- y-
ι-ι	w- w-

Length prosody is short.

e.g. CιʸCιʸC pihit̤- "take hold"

CαʷCαʷC pahad- "make clear"

The PVNVL pattern:

The pattern is limited to one stem where the P system is described in relation to h̲ prosody. Thus the pattern can be given as $^{h̲}$PVNVL. The P system has the term k, the N system has the term t and the L system has the term č. There is a contrast of systems, P-N-L in the pattern, and the contrast of terms is as follows: k-t-č.

e.g. $^{h̲}P_{k}VN_{t}VLč$ genij- "take"

The contrast of V systems is: ϵ-ι. The syllables are y prosodic and length prosody is short.

e.g. CϵʸCιʸC genij- "take"

The PVLVP pattern:

The initial P system is described in relation to h and h̲ prosodies and the P final system of the second syllable is described in relation to h prosody. Thus the pattern can be given as $^{h/h̲}$PVLV^{h}P. The P initial system has the term k, the L system has two terms t and t̤ and the P final system of the second syllable has two terms p and k. There is a contrast of systems, P-L-P in the pattern, and the contrast of terms is as follows: k-t-p and k-t̤-k.

e.g. $^{h}P_{k}VL_{t}V^{h}P_{p}$ galəp- "match"

$^{h}P_{k}VL_{t̤}V^{h}P_{k}$ karək- "cause to circle"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
α-ϵ	ẇ-ə

Length prosody is always short.

e.g.	$C\alpha^{w}C\epsilon^{\partial}C$	galəp-	"match"
	$C\alpha^{w}C\epsilon^{\partial}C$	karək-	"cause to circle"

The PVLVS pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus the pattern can be given as $^{h}/_{\underline{h}}$PVSVL. The P system has one term, k, the L system has three terms, p, t and $\underline{t}$ and the S system has two terms, t and ʔ. There is a contrast of the systems, P-L-S in the pattern, and the contrast of terms is as follows: k-p-t, k-t-t and k-$\underline{t}$-ʔ.

e.g.	$\underline{h}P_{k}VL_{p}VS_{t}$	gavəs-	"intersperse"
	$^{h}P_{k}VL_{t}VS_{t}$	keləs-	"pollute"
	$\underline{h}P_{k}VL_{\underline{t}}VS_{ʔ}$	garah-	"blame"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ϵ-ϵ	y-ə
α-ϵ	w-w

Length prosody is always short.

e.g.	$C\epsilon^{y}C\epsilon^{\partial}C$	keləs-	"pollute"
	$C\alpha^{w}C\epsilon^{\partial}C$	gavəs-	"intersperse"
	$C\alpha^{w}C\alpha^{w}C$	garah-	"blame"

The PVLVL pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $^{h}/_{\underline{h}}$PVLVL. The P initial system has three terms, p, t and k, the L initial and final systems of the second syllable have three terms, p, t and $\underline{t}$. There is a contrast of systems, P-L in the pattern and the contrast of terms is as follows: p-$\underline{t}$-t, p-$\underline{t}$, t-p-$\underline{t}$, t-$\underline{t}$-p, k-t-p and k-$\underline{t}$-p.

e.g.	$^{h}P_{p}VL_{\underline{t}}VL_{t}$	perəl-	"drop"
	$\underline{h}P_{p}VL_{\underline{t}}VL_{t}$	burəl-	"bark"
	$^{h}P_{p}VL_{p}VL_{\underline{t}}$	pavər-	"foist"
	$^{h}P_{t}VL_{p}VL_{\underline{t}}$	tavər-	"smear"

$\underline{^{h}}P_{t}VL_{\dot{t}}VL_{p}$	dirəv-	"digest"
$^{h}P_{k}VL_{t}VL_{p}$	keləv-	"attack"
$\underline{^{h}}P_{k}VL_{t}VL_{p}$	galəv-	"unfix"
$\underline{^{h}}P_{k}VL_{\dot{t}}VL_{p}$	gorəv-	"roar"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɛ	y-ə
ɛ-ɛ	w-ə
ɑ-ɛ	

Length prosody is always short.

e.g.	$Cɩ^{y}Cɛ^{ə}C$	dirəv-	"digest"
	$Cɩ^{w}Cɛ^{ə}C$	burəl-	"bark"
	$Cɛ^{y}Cɛ^{ə}C$	perəl-	"drop"
	$Cɛ^{w}Cɛ^{ə}C$	gorəv-	"roar"
	$Cɑ^{w}Cɛ^{ə}C$	galəv-	"unfix"

The PVLVM pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus the pattern can be given as ^{h}PVLVM. The P system has the term p, the L system has the term t and the M system has the term p. There is a contrast of the systems, P-L-M in the pattern and the contrast of terms is p-t-p.

e.g. $^{h}P_{p}VL_{\dot{t}}VM_{p}$ polə$\tilde{b}$- "persuade"

The V systems are ɛ and they function in w and ə prosodic syllables. Length prosody is short.

e.g. $Cɛ^{w}Cɛ^{ə}C$ polə$\tilde{b}$- "persuade"

The PVMVL pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $^{h/\underline{h}}$PVMVL. The P system has two terms, t and k,the M system has three terms, p, t and k and the L system has three terms, p, t and $\dot{t}$. There is a contrast of systems, P-M-L in the pattern and the contrast of terms is as follows: t-k-t, k-t-$\dot{t}$, k-p-$\dot{t}$ and k-t-p.

e.g.	$^{h}P_{t}VM_{k}VL_{t}$	dag̃əl-	"struggle"
	$^{h}P_{k}VM_{t}VL_{t}$	kod̃ur-	"whisper"
	$^{h}P_{k}VM_{p}VL_{t}$	kãbur-	"repay"
	$^{h}P_{k}VM_{t}VL_{p}$	kæd̃əv-	"call"

The contrast of V systems and prosodies is as follows:

V systems	prosodies
ϵ-ɩ	w-w
ɑ-ɩ	w-ə
ɑ-ϵ	y-ə

Length prosody is always short.

e.g.	$C\epsilon^{w}C\iota^{w}C$	kod̃ur-	"whisper"
	$C\alpha^{w}C\iota^{w}C$	kãbur-	"repay"
	$C\alpha^{y}C\epsilon^{ə}C$	kæd̃əv-	"call"
	$C\alpha^{w}C\epsilon^{ə}C$	dag̃əl-	"struggle"

The NVPVL pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus the pattern can be given as $NV^{h}PVL$. The N system has the term p, the P system has the term t and the L system has the term t. There is a contrast of systems, M-P-L in the pattern and the contrast of terms is p-t-t̤.

e.g. $N_{p}V^{h}P_{t}VL_{t}$ matur- "utter"

The contrast of V systems is ɑ-ɩ. Syllables are w prosodic and length prosody is short.

e.g. $C\alpha^{w}C\iota^{w}C$ matur- "utter"

The NVLVP pattern:

The P system is described in relation to h prosody. Thus the pattern can be given as $NVLV^{h}P$. The N system has two terms p and t the L system has the term t and the P system has two terms, p and k. There is a contrast of systems, N-L-P in the pattern and the contrast of terms is as follows: p-t-k and t-t̤-p.

e.g. $N_{p}VL_{t}V^{h}P_{k}$ mirik- "squeeze"

$N_tVL_{\underset{\bullet}{t}}V^hP_p$ nerəp- "expel"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɩ	y-y
ɛ-ɛ	y-ə

Length prosody is short.

e.g. $C_ɩ{}^vC_ɩ{}^vC$ mirik- "squeeze"

$C_ɛ{}^vC_ɛ{}^əC$ nerəp- "expel"

The NVLVL pattern:

The N system has two terms, p and t, the initial L system of the second syllable has two terms, t and č and the L final system of the second syllable has one term, p. There is a contrast of systems, N-L in the pattern and the contrast of the terms is as follows: p-t-p, and t-č-p.

e.g. $N_pVL_tVL_p$ maləv- "fry slightly"

$N_tVL_tVL_p$ naləv- "lull"

$N_tVL_{\check{c}}VL_p$ nijəv- "grin"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɛ	w-ə
ɛ-ɛ	y-ə
ɑ-ɛ	

Length prosody is short.

e.g. $C_ɩ{}^vC_ɛ{}^əC$ nijəv- "grin"

$C_ɛ{}^wC_ɛ{}^əC$ moləv- "kindle"

$C_ɑ{}^wC_ɛ{}^əC$ naləv- "lull"

The SVPVP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus the pattern can be given as SV^hPV^hP. The S system and the P initial system of the second syllable have the term t and the P final system of the second syllable has the term p. There is a contrast of systems, S-P in the pattern and the contrast of

terms is t-p.

e.g. $S^{t}V^{h}P_{t}V^{h}P_{p}$ satəp- "cause to sleep"

The contrast of V systems is ɑ-ɛ and they function in w and ə prosodic syllables respectively. Length prosody is short.

e.g. $C\alpha^{w}C\epsilon^{ə}C$ satəp- "cause to sleep"

The SVPVL pattern:

The P system is described in relation to h and h̲ prosodies. Thus the pattern can be given as $SV^{h/\underline{h}}PVL$. The S system has one term, ʔ, the P system has two terms, t and ṭ and the L system has one term p. Thus, there is a contrast of systems, S-P-L and the contrast of terms is as follows: ʔ-ṭ-p and ʔ-t-ṭ.

e.g. $S_{ʔ}V^{h}P_{ṭ}VL_{p}$ hiṭəv- "make stay"

$S_{ʔ}V^{\underline{h}}P_{t}VL_{ṭ}$ hada:r- "study"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɪ-ɛ	y-ə
ɑ-ɑ	w-w

Length prosody is short when V is or ɛ, otherwise it may be short or long.

e.g. $C\imath^{v}C\epsilon^{ə}C$ hiṭəv- "make stay"

$C\alpha^{w}C\bar{\alpha}^{w}C$ hada:r- "study"

The SVNVS pattern:

The S initial system has two terms, t and ʔ, the N system has the term t and the S final system of the second syllable has two terms ʔ and t. There is a contrast of systems, S-N-S in the pattern and the contrast of terms is ʔ-t-ʔ.

e.g. $S^{t}{}_{v}N_{t}VS_{t}$ sanəs- "console"

$S_{ʔ}VN_{t}VS_{ʔ}$ hinəh- "cause to laugh"

The contrast of V systems and prosodies is as follows:

V systems	prosodies
ɑ-ɛ	y-ə

ɩ-ϵ w-ə

Length prosody is short.

e.g. CɑʷCϵᵊC sanəs- "console"

CɩʷCɑʷC hinəh- "laugh"

The SVNVL pattern:

The pattern is limited to one stem where the S system has the term t, the N system has the term p and the L system has the term t. There is a contrast of systems, S-N-L in the pattern and the contrast of terms is t-p-ṭ.

e.g. $S_tVN_pVL_{ṭ}$ samər- "commemorate"

The contrast of V systems is ɑ-ϵ and they function in w and ə prosodic syllables. Length prosody is short.

e.g. CɑʷCϵᵊC samər- "commemorate"

The SVSVL pattern:

The pattern is limited to one stem where the S initial system has the term ʔ, the S initial system of the second syllable has the term t and the L system has the term ṭ. There is a contrast of systems, S-L in the pattern and the contrast of terms is ʔ-t-ṭ.

e.g. $S_ʔVS_tVL_{ṭ}$ hasur- "control"

The contrast of V systems is ɑ-ɩ. Syllables are w prosodic and length prosody is short.

e.g. CɑʷCɩʷC hasur- "control"

The SVLVS pattern:

The pattern is limited to one stem where the S initial system and the S final system of the second syllable have the term t and the L system has the term ṭ. There is a contrast of systems, S-L-S in the pattern and the contrast of terms is t-ṭ-t.

e.g. $S_tVL_{ṭ}VS_t$ sarəs- "decorate"

The contrast of V systems is ɑ-ϵ and they function in w and ə prosodic syllables. Length prosody is short.

e.g. $C\alpha^{w}C\epsilon^{\ddot{\text{ə}}}C$ sarəs- "decorate"

The LVPVS pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $LV^{h}PVS$. The L system has the term p, the P system has the term t and the S system has the term ʔ. There is a contrast of systems, L-P-S in the pattern and the contrast of terms is p-ṭ-ʔ.

e.g. $L_{p}V^{h}P_{ṭ}VS_{ʔ}$ vaṭəh- "make understand"

The contrast of V systems is α-ϵ and of syllable prosodies is w-ə. Length prosody is short.

e.g. $C\alpha^{w}C\alpha^{w}C$ vaṭəh- "make understand"

The LVPVN pattern:

The pattern is limited to one stem where the P system is described in relation to $\underline{h}$ prosody. Thus the pattern can be given as $LV^{\underline{h}}PVN$. The L system and the N system have the term p and the P system has the term t. There is a contrast of systems, L-P-N in the pattern and the contrast of terms is p-t-p.

e.g. $L_{p}V^{\underline{h}}P_{t}VN_{p}$ vadam- "accompany"

The Contrast of V systems is α-ϵ and of prosodies is w-ə. Length prosody is always short.

e.g. $C\alpha^{w}C\epsilon^{ə}C$ vadam- "accompany"

The LVPVL pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $LV^{h/\underline{h}}PVL$. The L initial system has one term p, the P system has four terms, p, t, ṭ and k and the L final system has two terms, t and ṭ. Thus, there is a contrast of systems, L-P-L and the contrast of terms is as follows: p-ṭ, p-t-ṭ, p-ṭ-t and p-k-ṭ.

e.g. $L_{p}V^{h}P_{p}VL_{ṭ}$ vapur- "sow"

$L_{p}V^{\underline{h}}P_{t}VL_{ṭ}$ vada:r- "preach"

$L_pV^hP_{\underline{t}}VL_t$ vaṭəl- "raid"

$L_pV^hP_kVL_{\underline{t}}$ vagur- "pour"

The contrast of V systems and syllable prosodies is as follows.

V systems	prosodies
α-ϵ	w-ə
α-ι	w-w
α-α	

Length prosody may be short or long when V is α, otherwise it is short.

e.g. $C\alpha^wC\epsilon^əC$ vaṭəl- "raid"

$C\alpha^wC\iota^wC$ vagur- "pour"

$C\alpha^wC\bar{\alpha}^wC$ vada:r- "preach"

The LVNVS pattern:

The pattern is limited to one stem where the L system and the N system have the term p and the S system has the term t. There is a contrast of systems, L-N-S in the pattern and the contrast of terms is: p-t.

e.g. $L_pVN_pVS_t$ viməs- "ask"

The contrast of V systems is ι-ϵ and of syllable prosodies is y-ə. Length prosody is short.

e.g. $C\iota^yC\epsilon^əC$ viməs- "ask"

The LVNVL pattern:

The pattern is limited to one stem where the L initial system and the N initial system of the second syllable have the term p and the L final system of the second syllable has the term ṭ. There is a contrast of systems, L-N-L and the contrast of terms is p-ṭ.

e.g. $L_pVN_pVL_{\underline{t}}$ vama:r- "vomit"

The V system is α and the syllables are w prosodic. Length prosody is short.

e.g. $C\alpha^wC\bar{\alpha}^wC$ vama:r- "vomit"

The LVLVM pattern:

The pattern is limited to one stem where the L initial system has the term p, and the L initial system of the second syllable and the M system have the term t. There is a contrast of systems, L-M in the pattern and the contrast of terms is p-t.

e.g. $L_pVL_tVM_t$ valəd̃- "eat"

The contrast of V systems is ɑ-ɛ and of syllable prosodies is w-ə. Length prosody is short.

e.g. $Cɑ^wCɛ^əC$ valəd̃- "eat"

The LVLVL pattern:

The L initial system has two terms, p and t, the L initial system of the second syllable has two terms, p and č and the L final system of the second syllable has the t. There is no contrast of systems in the pattern and the contrast of terms is as follows: p-t and t-č-t.

e.g. $L_pVL_pVL_t$ vevul- "tremble"

$L_tVL_čVL_t$ lijəl- "bud"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɛ-ɪ	y-w
ɪ-ɛ	y-ə

Length prosody is short.

e.g. $Cɛ^yCɪ^wC$ vevul- "tremble"

$Cɪ^yCɛ^əC$ lijəl- "bud"

To summarize, according to the analysis given above the following prosodic contrasts are possible in the CVCVC structures: the first syllable may be y or w prosodic. The second syllable may be y, w or ə prosodic. When the second syllable is not ə prosodic, it may harmonise with the first syllable prosodically. The second syllable is always ə prosodic when the C initial or final system of the second syllable is the L system with p or t terms. Thus, prosodic relationships like those given below are possible:

w- w-

y- y-

w- ə-

and y- ə- .

The contrast y-w is only possible in one stem, namely, vevul-. This is the only stem where the L initial systems of the first and the second syllables have the term p and where the second syllable is w prosodic. It can thus be considered as an exception.

The CVCVCC structure:

In this structure, systems of the CC cluster are always homorganic. The structure has the following patterns:

PVNVPP	SVPVSS	SVLVLL
PVLVPP	SVLVSS	LVPVLL
NVLVPP	-	-
LVLVPP	-	-

The PVNVPP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as ^{h}PVNV^{h}PP. The P initial system has the term k, the N system and the P systems of the PP cluster have the term t. There is a contrast of systems, P-N-P and the contrast of terms is k-t.

e.g. $^{h}P_{k}VN_{t}V^{h}PP_{t}$ konitt- "pinch"

The contrast of V systems is ɛ-ɩ and of syllable prosodies is w-y. Length prosody is long.

e.g. CɛʷCɩʸCC konitt- "pinch"

The PVLVPP pattern:

The P initial system is described in relation to h prosody and the P systems of the PP cluster are described

in relation to h and h̲ prosodies. Thus, the pattern can be given as ^{h}PVLV^{h}/h̲PP. The P initial system has two terms, p and k, the L system has two terms, t and ṭ and the P systems of the PP cluster have the term t. There is a contrast of systems, P-L-P and the contrast of terms is as follows: p-ṭ-t and k-t.

e.g. $^{h}P_{p}VL_{\dot{t}}V^{h}PP_{t}$ purudd- "splice"

$^{h}P_{k}VL_{t}V^{h}PP_{t}$ kalatt- "shake"

The contrast of V systems and syllable prosdies is as follows:

V systems	prosodies
ι-ι	w-w
α-α	

Length prosody is short.

e.g. $C\iota^{w}C\iota^{w}CC$ purudd- "splice"

$C\alpha^{w}C\alpha^{w}CC$ kalatt- "shake"

The NVLVPP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. The N system and the P systems of the PP cluster have the term t, and the L system has the term p. There is a contrast of systems, N-L-P in the pattern, and the contrast of terms is t-p-t.

e.g. $N_{t}VL_{p}V^{h}PP_{t}$ navatt- "stop"

The V system is α and syllables are w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C\alpha^{w}CC$ navatt- "stop"

The SVPVSS pattern:

The pattern is limited to one stem where the P system is described in relation to h̲ prosody. Thus the pattern can be given as SVh̲PVSS. The S initial system has the term ʔ, the P system has the term k and the S systems of the SS cluster have the term t. There is a contrast of systems, S-P-S and the contrast of terms is ʔ-k-t.

e.g. $S_{ʔ}V\underline{h}P_{k}VSS_{t}$ hagiss- "convince"

The contrast of V systems is α-ι and of syllable prosodies is

w-y. Length prosody is short.
e.g. $C\alpha^{w}C\iota^{y}CC$ hagiss- "convince"

The SVLVSS pattern:

The pattern is limited to one stem where all systems of the pattern have the term t. There is a contrast of systems, S-L-S in the pattern but there is no contrast of terms.
e.g. $S_{t}VL_{t}VSS_{t}$ salass- "make arrangements"
The V system is α and the syllables are w prosodic. Length prosody is short.
e.g. $C\alpha^{w}C\alpha^{w}CC$ salass- "make arrangements"

The SVLVLL pattern:

The pattern is limited to one stem where the S system has the term ʔ, the L initial system of the second syllable has the term p and the L systems of the second syllable have the term t. There is a contrast of systems, S-L and the contrast of terms is ʔ-p-t.
e.g. $S_{ʔ}VL_{p}VLL_{t}$ hevill- "tile"
The contrast of V systems is ϵ-ι. Syllables are y prosodic and length prosody is short.
e.g. $C\epsilon^{y}C\iota^{y}\overset{\frown}{}CC$ hevill- "tile"

The LVPVLL pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus the pattern can be given as $LV^{h}PVLL$. The L initial system has the term č and the P system and the L systems of the LL cluster have the term t. There is a contrast of systems, L-P-L in the pattern and the contrast of terms is č-t.
e.g. $L_{č}V^{h}P_{t}VLL_{t}$ jatull- "lock"
The contrast of V systems is α-ι. Syllables are w prosodic and length prosody is short.
e.g. $C\alpha^{w}C\iota^{w}CC$ jatull- "lock"

The LVLVPP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus the pattern can be given as LVLV^{h}PP. The L initial system has the term p, the L initial system of the second syllable has the term t and the P systems of the PP cluster have the term t. There is a contrast of systems, L-P in the pattern and the contrast of terms is p-ṭ-t.

e.g. $L_{p}VL_{ṭ}V^{h}PP_{t}$ viritt- "grin"

The V system is ɪ and the syllables are y prosodic. Length prosody is short.

e.g. $C\iota^{y}C\iota^{y}CC$ viritt- "grin"

To summarize the prosodic contrasts in CVCVCC structures, the second syllable harmonises with the initial syllable in terms of prosodies except in two stems, namely, konitt- and hagiss-. Therefore, the usual prosodic relationship is as follows:

y- y-

w- w-

ə prosodic syllables do not occur in this structure.

The CVCCVC structure:

This structure is limited to one stem of which the pattern is LVPPVL. The P systems are described in relation to h prosody. Thus the pattern can be given as LV^{h}PPVL. The L initial system has the term p, the P final system of the initial syllable and the P initial system of the second syllable have the term k and the L final system of the second syllable has the term ṭ. There is a contrast of systems, L-P-L in the pattern and the contrast of terms is p-k-ṭ.

e.g. $L_{p}V^{h}PP_{k}VL_{ṭ}$ vakkər- "pour"

The contrast of V systems is w-ɛ and of syllable prosodies is w-ə. Length prosody is short.

e.g. $C\alpha^{w}CC\epsilon^{ə}C$ vakkər- "pour"

The VCVC structure:

This structure has the following patterns:

VPVN	VPVL	VPVS
VNVN	VSVL	-
-	VLVL	-
-	VLVM	-

The VPVN pattern:

The pattern is limited to one stem where the P system is described in relation to h̲ prosody. Thus the pattern can be given as V$_{\underline{h}}$PVN. The P system has the term t and the N system the term p. There is a contrast of systems, P-N in the pattern and the contrast of terms is t-p.

e.g. V$_{\underline{h}}$P$_{t}$VN$_{p}$ idim- "cause to swell"

The V systems are ɩ and the syllables are y prosodic. Length prosody is short.

e.g. ɩ^{y}CɩyC idim- "cause to swell"

The VPVL pattern:

The P system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as V^{h}/$_{\underline{h}}$PVL. The P system has three terms, t, ṭ and k and the L system has three terms, p, t and ṭ. There is a contrast of systems, P-L in the pattern and the contrast of terms is as follows: ṭ-p, t-ṭ and k-t.

e.g.	V^{h}P$_{t}$VL$_{ṭ}$	atur-	"place"
	V$_{\underline{h}}$P$_{t}$VL$_{ṭ}$	udur-	"uproot"
	V^{h}P$_{ṭ}$VL$_{p}$	aṭəv-	"set a trap"
	V^{h}P$_{k}$VL$_{t}$	akul-	"fold"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɩ	w-w
ɑ-ɩ	w-ə
ɑ-ɛ	

Length prosody is short.

e.g. $\iota^{w}C\iota^{w}C$ udur- "uproot"
$\alpha^{w}C\epsilon^{a}C$ aṭəv- "set a trap"
$\alpha^{w}C\iota^{w}C$ akul- "fold"

The VPVS pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $V_{h}PVS$. The P system has the term t and the S system has the term ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is t-ʔ.

e.g. $V_{h}P_{t}VS_{ʔ}$ adah- "believe"

The V systems are α and syllables are w prosodic. Length prosody is short.

e.g. $\alpha^{w}C\alpha^{w}C$ adah- "believe"

The VNVN pattern:

The pattern is limited to one stem where the N initial system has the term p and the N final system of the second syllable has the term t. There is no contrast of systems in the pattern but there is a contrast of terms, namely, p-t.

e.g. $VN_{p}VN_{t}$ amun- "knit"

The contrast of V systems is α-ι. Syllables are w prosodic and length prosody is short.

e.g. $\alpha^{w}C\iota^{w}C$ amun- "knit"

The VSVL pattern:

The S system has one term, ʔ and the L system has two terms, t and ṭ. There is a contrast of systems, S-L in the pattern and the contrast of terms is as follows: ʔ-t and ʔ-ṭ.

e.g. $VS_{ʔ}VL_{t}$ uhul- "bear"
$VS_{ʔ}VL_{ṭ}$ ihir- "spill"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɩ	y-y
ɩ-ɛ	y-ə
ɑ-ɩ	w-w

Length prosody is short.

e.g.	ɩʸCɩʸC	ihir-	"spill"
	ɩʷCɩʷC	uhul-	"bear"
	ɩʸCɛəC	ihəl-	"hold umbrellas etc."
	ɑʷCɩw	ahul-	"pick up"

The VLVL pattern:

The L initial system of the second syllable has three terms, p, t, and ṭ and the L final system of the second syllable has two terms, p and t. There is no contrast of systems in the pattern and the contrast of terms is as follows: p-t, t-p, ṭ-p and ṭ-t.

e.g.	VLpVLt	avul-	"kindle"
	VLtVLp	aləv-	"stick"
	VLṭVLp	orəv-	"stare"
	VLṭVLt	ærəl-	"accompany"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɛ-ɛ	w-ə
ɑ-ɛ	y-ə
ɑ-ɩ	w-w

Length prosody is short.

e.g.	ɛʷCɛəC	orəv-	"stare"
	ɑʸCɛəC	ærəl-	"accompany"
	ɑʷCɩʷC	avul-	"pick up"

The VMVL pattern:

The M system has three terms, p, t and k and the L system has two terms, p and ṭ. There is a contrast of systems, M-L in the pattern and the contrast of terms is as follows: p-ṭ, t-ṭ and k-p.

e.g. VM_pVL_t abə̃r- "grind"
VM_tVL_t adũr- "recognise"
VM_kVL_t agə̃v- "indicate"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɛ	w-ə
ɑ-ɪ	w-w

Length prosody is short.

e.g. $ɑ^wCɛ^əC$ abɔ̃r- "grind"
$ɑ^wCɪ^wC$ adũr- "recognise"

To summarize, possible contrasts in the VCVC structure is as follows: the second sylable may be y, w or ə prosodic and the first sylaable may be y or w prosodic. When the second syllable is not ə prosodic it may harmonize with the first syllable prosodically.

e.g. y- y-
w- w-
y- ə-
and w- ə-.

The VCVCC struture:

This structure has the following patterns in which the C systems of the CC cluster are homorganic. The structure has the following patterns:

VPVNN	VPVLL	VLVPP	VLVSS
VMVNN	-	-	-

The VPVNN pattern:

The pattern is limited to one stem where the P system is described in relation to h̲ prosody. Thus the pattern can be given as VhPVNN. The P system has the term k and the N systems of the NN cluster have the term t. There is a contrast of systems, P-N in the pattern and the contrast of terms is k-t.

terms is k-t.

e.g. $V\underline{h}P_kVNN_t$ ugann- "teach"

The contrast of V systems is ɩ-ɑ. Syllables are w prosodic and length is short.

e.g. $ɩ^wCɑ^wCC$ ugann- "teach"

The VPVLL pattern:

The P system is described in relation to h and h prosodies. Thus, the pattern can be given as $V^{h/\underline{h}}PVLL$. The P system has three terms, p, t and k and the L systems of the LL cluster have one term, t. There is a contrast of systems, P-L in the pattern and the contrast of terms is as follows: p-t and k-t.

e.g. $V^hP_pVLL_t$ apull- "beat clothes"

$V^hP_tVLL^t$ atull- "rub"

$V\underline{h}P_kVLL_t$ agull- "lock"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɩ	y-y
ɑ-ɩ	w-w

Length prosody is short.

e.g. $ɩ^wCɩ^wCC$ ugull- "uproot"

$ɑ^wCɩ^wCC$ atull- "rub"

The VLVPP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus the pattern can be given as VLV^hPP. The L system has the term t and the P systems of the PP cluster have the term p. There is a contrast of systems, L-P, and the contrast of terms is t-p.

e.g. $VL_tV^hPP_p$ ulupp- "strip off"

The V systems are ɩ and syllables are w prosodic. Length prosody is short.

e.g. $ɩ^wCɩ^wCC$ ulupp- "strip off"

The VLVSS pattern:

The pattern is limited to one stem where the L system has the term p and the S systems of the SS cluster have the term t. There is a contrast of systems, L-S in the pattern and the contrast of terms is p-t.

e.g. VL_pVSS_t avuss- "provoke"

The contrast of V systems is as follows: ɑ-ɩ. syllables are w prosodic and length prosody is short.

e.g. $ɑ^wCɩ^wCC$ avuss- "provoke"

The VMVNN pattern:

The pattern is limited to one stem where the M system and the N systems of the NN cluster have the term t. There is a contrast of systems, M-N in the pattern but there is no contrast of terms.

e.g. VM_tVNN_t ad̰unn- "introduce"

The contrast of V systems is ɑ-ɩ. Syllables are w prosodic and length prosody is short.

e.g. $ɑ^wCɩ^wCC$ adunn- "introduce"

In patterns of the VCVCC structure, the second syllable harmonizes with the initial syllable in terms of prosodies, all stems being w prosodic.

As far as the prosodic structure of the disyllabic stems are concerned, the second syllable when it has the CC cluster harmonizes with the initial syllable prosodically. (It is important to note that a syllable with the CC cluster in the syllable final position can never be ə prosodic). In all other cases the second syllable is either ə prosodic, depending on the context given above, or harmonizes with the initial syllable prosodically.

3.3.1.2 Stems of conjug. 2

Stems belonging to conjug. 2 may be monosyllabic or disyllabic.

3.3.1.2.1 Monosyllabic stems

These have two types of structure, CVC and VC

The CVC structure:

This structure has the following patterns:

PVP	PVN	PVS	PVL	PVM
NVP	NVN	NVS	-	-
SVP	-	-	-	SVM
LVP	-	LVL	-	LVM

The PVP pattern:

The P systems are described in relation to h and h̲ prosodies. Thus the pattern can be given as $^{h/\underline{h}}$PV$^{h/\underline{h}}$P. The P initial system has three terms, p, t and k and the P final system has four terms, p, t, ṭ and k. There is no contrast of systems in the pattern but there is a contrast of terms as follows: p-t, t-p, k-ṭ and t-k.

e.g. $^{h}P_{p}V\underline{h}P_{t}$ pad- "ride"

$\underline{h}P_{p}V\underline{h}P_{t}$ bad- "fry"

$^{h}P_{t}V^{h}P_{p}$ tap- "warm one's self"

$\underline{h}P_{t}V^{h}P_{k}$ dak- "see"

$^{h}P_{k}V^{h}P_{\dot{t}}$ kaṭ- "knit"

The V systems are ɩ or ɑ and they function in w prosodic stems. Length prosody is long when V is ɩ, otherwise short.

e.g. $C\bar{\iota}^{w}C$ pu:d- "blossom"

$C\alpha^{w}C$ pad- "ride"

The PVN pattern:

The P system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as $^{h/\underline{h}}$PVN. The P system has two terms, p and k and the N system has one term, t. There is a contrast of systems, P-N in the pattern and the contrast of terms is as follows: p-t and k-t.

e.g. $^{h}P_{p}VN_{t}$ pan- "jump"

$\underline{h}P_pVN_t$	ban-	"blame"
$^hP_kVN_t$	kan-	"excavate"
$\underline{h}P_kVN_t$	gan-	"count"

The V system is α and stems are w prosodic. Length prosody is short.

e.g.	$C\alpha^wC$	ban-	"blame"
	$C\alpha^wC$	pan-	"jump"

The PVS pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $^h/\underline{h}$PVS. The P system has two terms, p and k and the S final system has one term ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows: p-ʔ and k-ʔ.

e.g.	$^hP_pVS_ʔ$	pa:h-	"winnow"
	$\underline{h}P_pVS_ʔ$	bah-	"descend"
	$^hP_kVS_ʔ$	kah-	"cough"

The V system may be ɩ or α. ɩ functions in y prosodic stems and α functions in w prosodic stems. Length prosody is short when V is ɩ and otherwise it may be short or long.

e.g.	$CɩʸC$	pih-	"wipe"
	$C\alpha^wC$	kah-	"cough"
	$C\tilde{\alpha}^wC$	pa:h-	"winnow"

The PVL pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $^h/\underline{h}$PVL. The P system has the term k and the L system has the term t. There is a contrast of systems, P-L in the pattern and the contrast of terms is t-k.

e.g.	$^hP_kVL_t$	kel-	"attack"
	$\underline{h}P_kVL_t$	gil-	"swallow"

The V system may be ɩ or ϵ and they function in y prosodic stems. Length prosody is short.

e.g.	$CϵʸC$	kel-	"attack"

CɩʸC gil- "swallow"

The PVM pattern:

The P system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as $^{h}/_{\underline{h}}$PVM. The P system has the term p and the M system has two terms, p and t. There is a contrast of systems, P-M in the pattern and the contrast of terms is p-t.

e.g. $^{h}P_{p}VM_{p}$ pi$\overset{N}{b}$- "blow"
$_{\underline{h}}P_{p}VM_{t}$ bi$\overset{N}{d}$- "break"

The V system is ɩ and stems are y prosodic. Length prosody is short.

e.g. CɩʸC pi$\overset{N}{b}$- "blow"
CɩʸC bi$\overset{N}{d}$- "break"

The NVP pattern:

The P system is described in relation to h̲ prosody. Thus, the pattern can be given as NVP. The N system has two terms, p and t and the P system has three terms, t, ṭ and k. There is a contrast of systems, N-P in the pattern and the contrast of terms is as follows: p-t, p-ṭ and t-k.

e.g. $N_{p}V_{\underline{h}}P_{t}$ mad- "polish"
$N_{p}V_{\underline{h}}P_{\dot{t}}$ maḍ- "press out"
$N_{t}V_{\underline{h}}P_{t}$ nag- "climb"

The V system is ɑ and it functions in w prosodic stems. Length prosody is short.

e.g. CɑʷC mad- "polish"
CɑʷC maḍ- "press out"

The NVN pattern:

The pattern is limited to one stem where the N initial system has the term p and the N final system has the term t. There is no contrast of systems in the pattern but there is a contrast of terms: p-t.

e.g. $N_{p}VN_{t}$ man- "measure"

The V system is α and the stem is w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C$ man- "measure"

The NVS pattern:

The pattern is limited to one stem where the N system has the term t and the S system has the term ʔ. There is a contrast of systems, N-S in the pattern and the contrast of terms is t-ʔ.

e.g. $N_{t}VS_{ʔ}$ nah- "exhaust"

The V system is α and the stem is w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C$ nah- "exhaust"

The SVP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $SV^{h}P$. The S system has the term ʔ and the P system has the term t. There is a contrast of systems, S-P in the pattern and the contrast of terms is ʔ-ṭ.

e.g. $S_{ʔ}V^{h}P_{ṭ}$ hiṭ- "stay"

The V system is ι and the stem is y prosodic. Length prosody is short.

e.g. $C\iota^{y}C$ hiṭ- "stay"

The SVM pattern:

The pattern is limited to one stem where the S system has the term ʔ and the M system has the term t. There is a contrast of systems, S-M in the pattern and the contrast of terms is ʔ-t.

e.g. $S_{ʔ}VM_{t}$ hid^{N}- "evaporate"

The V system is ι and the stem is y prosodic. Length prosody is short.

e.g. $C\iota^{y}C$ hid^{N}- "evaporate"

The LVP pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $LV^{h/\underline{h}}P$. The L system has four terms, p, t, $\underline{t}$, and $\check{c}$ and the P system has three terms, t, $\underline{t}$ and k. There is a contrast of systems, L-P in the pattern and the contrast of terms is as follows: p-$\underline{t}$, p-t, $\check{c}$-t, $\underline{t}$-k and t-k.

e.g.	$L_pV^{\underline{h}}P_t$	vad-	"strike"
	$L_pV^{h}P_{\underline{t}}$	va$\underline{t}$-	"be worth"
	$L_pV^{\underline{h}}P_t$	vad-	"come"
	$L_{\check{c}}V^{\underline{h}}P_t$	jad-	"pray"
	$L_{\underline{t}}V^{h}P_k$	rak-	"save"
	$L_tV^{\underline{h}}P_k$	lag-	"lodge

The V systems may be ι or α. ι functions in y prosodic stems and α functions in w prosodic stems. Length prosody is short.

e.g.	$C\iota^{y}C$	vid-	"shoot an arrow"
	$C\alpha^{w}C$	rak-	"save"

The LVS pattern:

The L system has two terms, p and $\underline{t}$ and the S system has one term ʔ. There is a contrast of systems, L-S in the pattern and the contrast of terms is as follows: p-ʔ and $\underline{t}$-ʔ.

e.g.	$L_pVS_{ʔ}$	vah-	"rain"
	$L_{\underline{t}}VS_{ʔ}$	rah-	"peel"

The V system is α and the stem is w prosodic. Length prosody is short.

e.g.	$C\alpha^{w}C$	rah-	"peel"

The LVM pattern:

The L system has the term p and the M system has the term t. There is a contrast of systems, L-M in the pattern and the contrast of terms is p-t.

e.g.	L_pVM_t	$\overset{N}{\text{vad}}$-	"worship"
	L_pVM_t	$\overset{N}{\text{vid}}$-	"experience"

The V system may be ι or α. ι functions in y prosodic stems and α functions in w prosodic stems. Length prosody is short.

e.g. $C\iota^{y}C$ vid- "experience"

$C\alpha^{w}C$ vad- "worship"

The VC structure:

This structure has the following patterns: VP, VN, VS, VL and VM. Length prosody of all patterns is short.

The VP pattern:

The P system is described in relation to h prosody. Thus, the pattern can be given as $V\underline{h}P$. It has two terms, p and t.

e.g. $V\underline{h}P_{p}$ ob- "suit"

$V\underline{h}P_{t}$ ad- "pull"

The V system may be ϵ or α and they function in w prosodic stems.

e.g. $\epsilon^{w}C$ ob- "suit"

$\alpha^{w}C$ ad- "pull"

The VN pattern:

The pattern is limited to one stem where the N system has the term t.

e.g. VN_{t} an- "prick"

The V system is α and the stem is w prosodic.

e.g. $\alpha^{w}C$ an- "prick"

The VS pattern:

The pattern is limited to one stem where the S system has the term ʔ.

e.g. $VS_{ʔ}$ ih- "sprinkle"

The V system is ι and the stem is y prosodic.

e.g. $\iota^{y}C$ ih- "sprinkle"

The VL pattern:

The pattern is limited to one stem where the L system has the term t̤.

e.g. $VL_{\underset{\cdot}{t}}$ ar- "send"

The V system is α and the stem is w prosodic.

e.g. $\alpha^{w}C$ ar- "send"

The VM pattern:

The M system has two terms, p and t.

e.g. VM_{p} $\overset{N}{ib}$- "kiss"

VM_{t} $\overset{N}{ad}$- "draw"

The V system may be ι or α. ι functions in y prosodic stems and α functions in w prosodic stems.

e.g. $\iota^{y}C$ $\overset{N}{ib}$- "kiss"

$\alpha^{w}C$ $\overset{N}{ad}$- "draw"

3.3.1.2.2 Disyllabic stems

The disyllabic stems have two structures, CVCVC and VCVC.

The CVCVC structure:

This structure has the following patterns: PVLVP, NVPVP, NVLVP and LVLVP. Length prosody of all patterns of this structure is short.

The PVLVP pattern:

The P initial system is described in relation to h prosody and the P final system of the second syllable is described in relation to h and h̲ prosodies. Thus, the pattern can be given as $^{h}PVLV^{h/\underline{h}}P$. The P initial system has one term p and the L system has two terms, p and t. There is a contrast of systems, P-L-P in the pattern and the contrast of terms is as follows: p-t and p-t̤-t.

e.g. $^{h}P_{p}VL_{p}V^{h}P_{t}$ pavət- "last"

$^{h}P_{p}VL_{p}V^{\underline{h}}P_{t}$ parəd- "defeat"

The contrast of V systems is α-ϵ and of syllable prosodies is w-ə.

e.g. $C\alpha^{w}C\epsilon^{\ni}C$ pavət- "last"
$C\alpha^{w}C\epsilon^{\ni}C$ parəd- "defeat"

The NVPVP pattern:

The pattern is limited to one stem where the P initial and final systems of the second syllable are described in relation to h and $\underline{h}$ prosodies respectively. The N system has the term t, the P initial system of the second syllable has the term k and the P final system of the second syllable has the term $\dot{t}$. There is a contrast of systems, N-P in the pattern and the contrast of terms is t-k-$\dot{t}$.

e.g. $N_tV\underline{h}P_kV^hP_{\dot{t}}$ nægi$\dot{t}$- "stand up"

The contrast of V systems is as follows: α-ι. Syllables are y prosodic.

e.g. $C\alpha^{w}C\iota^{y}C$ nægi$\dot{t}$- "stand up"

The NVLVP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $NVLV^hP$. The N system has the term t, the L system has the term p and the P system has the term t. There is a contrast of systems, N-L-P in the pattern and the contrast of terms is t-p-t.

e.g. $N_tVL_pV^hP_t$ navət- "stop"

The contrast of V systems is α-ϵ. α functions in a w prosodic syllable and ϵ functions in a ə prosodic syllable.

e.g. $C\alpha^{w}C\epsilon^{\ni}C$ navət- "stop"

The LVLVP pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $LVLV^{h/\underline{h}}P$. The L initial system has one term, p, the L initial system of the second syllable has two terms, t and $\dot{t}$ and the P system has two terms, k and t. There is a contrast of systems, L-P in the pattern and the contrast of terms is as follows: p-t-k and p-$\dot{t}$-t.

e.g. $L_pVL_tV^hP_k$ valək- "refrain from"

$L_pVL_{\underline{t}}V\underline{h}P_t$ varəd- "mistake"

The contrast of V systems is α-ϵ and of syllable prosodies is w-ə.

e.g. $C\alpha^wC\epsilon^əC$ valək- "refrain from"

$C\alpha^wC\epsilon^əC$ varəd- "mistake"

The VCVC structure:

This structure has the following patterns:

VPVP	VSVM	VLVP
VLVP	-	-

Length prosody of all patterns of this structure is short.

The VPVP pattern:

The pattern is limited to one stem where the P initial and final systems of the second syllable are described in relation to h and $\underline{h}$ prosodies respectively. Thus, the pattern can be given as VPVP. The P initial and final systems of the second syllable have p and t terms respectively. There is no contrast of systems in the pattern but there is a contrast of terms: p-t.

e.g. $V^hP_pV\underline{h}P_t$ upəd- "be born"

The contrast of V systems is ι-ϵ and of syllable prosodies is w-ə.

e.g. $^wC\epsilon^əC$ upəd- "be born"

The VSVM pattern:

The pattern is limited to one stem where the S system and the M system have terms ʔ and t respectively. There is a contrast of systems, S-M in the pattern and the contrast of terms is ʔ-t.

e.g. $VS_ʔVM_t$ æhi$\tilde{d}$- "pick"

The contrast of V systems is α-ι. They function in y prosodic syllables.

e.g. $\alpha^{y}C\iota^{y}C$ æhid- "pick"

The VLVP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. The L system and the P system have the terms p and t respectively. There is a contrast of systems, L-P in the pattern and the contrast of terms is as follows: p-t.

e.g. $VL_{p}V^{h}P_{t}$ ævid- "walk"

The contrast of V systems is α-ι and syllables are y prosodic.

e.g. $\alpha^{y}C\iota^{y}C$ ævid- "walk"

In the disyllabic stems of conjug.2 the prosodic relationship is as follows: the second syllable is ə prosodic when the initial syllable is w prosodic and the second syllable is y prosodic when the initial syllable is y prosodic. Thus, the possible prosodic structures can be given as follows:

w- ə-
y- y-

3.3.1.3 Stems of conjug. 3

Conjug.3 has only monosyllabic stems. These have two structures [5], CV and V.

The CV structure:

This structure has four patterns, PV, NV, SV and LV.

The PV pattern:

The P system is described in relation to h and h prosodies. Thus, the pattern can be given as $^{h}/_{h}$PV. The P system has three terms, p, t and k.

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[5] de-, bo-, ve-, re-, ja- and e- are treated as irregular stems.

e.g.	$^{h}P_{p}V$	pa:-	"exhibit"
	$\underline{h}P_{p}V$	bo-	"drink"
	$\underline{h}P_{t}V$	da-	"burn"
	$^{h}P_{k}V$	ka-	"eat"
	$\underline{h}P_{k}V$	ga:-	"apply oil etc."

The V system may be ∈ or α. ∈ functions in y and w prosodic stems and α functions in w prosodic stems. Length prosody may be short or long when V is α but otherwise is short.

e.g.	$C\epsilon^{y}$	de-	"give"
	$C\epsilon^{w}$	bo-	"drink"
	$C\alpha^{w}$	da-	"burn"
	$C\bar{\alpha}^{w}$	ba:-	"draw"

The NV pattern:

The pattern is limited to one stem where the N system has the term t.

e.g.	$N_{t}V$	na:-	"bathe"

The V system is α and the stem is w prosodic. Length prosody is long.

e.g.	$C\bar{\alpha}^{w}$	na:-	"bathe"

The SV pattern:

The pattern is limited to one stem where the S system has the term ʔ.

e.g.	$S_{ʔ}V$	ha:-	"plough"

The V system is α and the stem is w prosodic. Length prosody is long.

e.g.	$C\bar{\alpha}^{w}$	ha:-	"plough"

The LV pattern:

The L system has four terms, p, t, t, and č.

e.g.	$L_{p}V$	ve-	"happen"
	$L_{t}V$	la-	"eat"
	$L_{\underline{t}}V$	re-	"evacuate the bowels"
	$L_{\check{c}}V$	ja-	"go"

The V system may be ϵ or α. ϵ functions in y prosodic stems and α functions in w prosodic stems. Length prosody is short.

e.g.	$C\epsilon^{y}$	ve-	"happen"
	$C\alpha^{w}$	ja-	"go"

The V structure:

This structure is limited to one stem where V is ϵ and the stem is y prosodic. Length prosody is short.

e.g.	ϵ^{y}	e-	"come"

3.3.1.4 Stems of conjug. 4

Conjug.4 has only monosyllabic stems. They have two structures, CVC and VC. The CVC structure is limited to two stems in which the final C harmonizes with the initial C of the following suffix. For example, when suffix C system is N with the term t the stem final C is N_t and when the following C is P with the term t it is P_t.

e.g.	$\underline{^{h}P_tVN_t}$-N_t	dannəva	"know"
	$\underline{^{h}P_tVN_t}$-V	dænə	"having known"
	$\underline{^{h}P_kVN_t}$-N_t	gannəva	"take"
	$\underline{^{h}P_kVN_t}$-V	ganə	"having taking"
	$\underline{^{h}P_kVN_p}$-N_p	gammu	"let us take"
	$\underline{^{h}P_kV^{h}P_t}$-$^{h}P_t$	gattot	"if...take"

When these stems are followed by a suffix beginning with a V the final C is N with the term t as they are in the given examples.

(It may be noted that dan- occurs only in non-past general and perfective forms).

The V system is α and the stems are w prosodic. Length prosody is short.

e.g.	$C\alpha^{w}C$	dannəva	"know"
	$C\alpha^{w}C$	gannəva	"take"

The VC structure:

This structure is limited to one stem where the

stem final C harmonizes with the initial C of the following suffix. Thus, when the initial C system of the suffix is N_t, the stem final $\overset{C}{\wedge}$ is N_t and when the suffix initial C is N_p the stem final C is N_p. However, when it occurs before the conjug. marker which is a vowel it is M_t.

e.g. VM_t-V idəla "has/have stayed"

VN_p-N_p immu "let us stay"

e.g. VN_t-N_t innəva "stay"

The V system is ι and the stem is y prosodic. Length prosody is short.

e.g. ιyC innəva "live"

3.3.1.5 Summary of the structures

According to the analysis given above conjug. 1 and 2 have monosyllabic and disyllabic stems and conjug. 3 and 4 have only monosyllabic stems. Monosyllabic stems of conjug.1 have four structures, CVC, CVCC, VC and VCC. Monosyllabic stems of conjug.2 and 4 have two structures, CVC and VC. Monosyllabic stems of conjug.3 have two structures, CV and V. Disyllabic stems of conjug.1 have four structures, CVCVC, CVCVCC, VCVC and VCVCC and disyllabic stems of conjug.2 have two structures, CVCVC and VCVC. These structures are given along with the number of patterns they have in the tables that follow.

	Conjug.1	Conjug.2	Conjug.3	Conjug.4
CVC	18	13	-	1
CVCC	12	-	-	-
VC	5	5	-	1
VCC	3	-	-	-
CV	-	-	4	-
V	-	-	1	-

Table 2. Monosyllabic structures

	Conjug.1	Conjug.2	Conjug.3	Cnjug. 4
CVCVC	25	4	-	-
CVCVCC	8	-	-	-
VCVC	7	3	-	-
VCVCC	5	-	-	-

Table 3. Disyllabic structures

It is important to note that only conjug.1 has consonant clusters and only conjug.3 has V final stems.

3.3.1.6 There is another point to be mentioned here. According to the above analysis, on the one hand, complex structures have few patterns and simple structures have many patterns and, on the other hand, complex patterns have few stems and simple patterns have many stems.

The prosodic structures of disyllabic stems of conjug.s 1 and 2 are given in table 2

Conjug. 1	Conjug. 2
CVCVC	CVCVC
w- w-	-
y- y-	y- y-
w- ə-	w- ə-
y- ə-	-

CVCVCC	-
y- y-	-
w- w-	-
VCVC	VCVC
w- w-	-
y- y-	y- y-
w- ə-	w- ə-
y- ə-	-
VCVCC	-
w- w-	-

Table 4. Prosodic contrasts of disyllabic stems of conjug.s 1 and 2.

3.3.2. Invol. stems

It is not necessary to analyze invol. stems here as the difference between vol. and invol. can be described in terms of prosodies. The relationship between vol. and invol. stems is discussed in Chapter 6.

In conclusion, paradigmatic and syntagmatic contrasts and functions of prosodies and C and V units of verb stems have been discussed in this chapter. Verb stems were divided according to the four conjugation classes, followed by the structures of each conjugation class. The patterns of each structure were described in order to show the contrasts and functions of elements within each pattern. The prosodic relationships between the first and the second syllables of disyllabic stem structures was also demonstrated. Finally, the structures and number of patterns of each conjugation class were given in tables showing that the conjug. classes have different phonological characteristics.

CHAPTER 4

4.0 PHRASAL VERB STEMS

4.1 This chapter deals with phrasal verb stems. Phrasal verbs are a group of special verbs of which the phonological structure is different from that of others. Even though phrasal verbs are frequent in colloquial Sinhalese, to date to the writer's knowledge they have not been subjected to a phonological analysis.

4.2 Gair (1970) describes phrasal verbs as follows: " A phrasal verb is a composite form with a verb as final element and privileges of occurrence like those of a single stem verb" (Gair, 1970: 46).

According to him, a phrasal verb may include a stem plus a simple verb where the simple verb may be one of kərə͡nəva, venə va or gannə͡va.[1] The first element could be one of the following:

1) Noun stem

e.g. sellaŋkerənəva "play"
"game" "do"
kata:karənəva "talk"
"talk" "do"

2) An adjective

e.g. narakvenava "spoil"
"bad" "happen"
podivenəva "make small or
"small" "happen" destroy"

---

[1] However, janəva, kanəva, damənəva, gahanəva, badinəva, kijənə va and ga:nəva also occur in phrasal verbs given here.

3) A morpheme which does not occur outside such combinations (non-free morpheme).

e.g.	paṭangannəva	"begin"
	ahukərənəva	"entrap"

Wickramasinghe (1972), who puts the phrasal verbs given by Gair into one group, recognises another group. She says: "We may observe that some stems are lexically complex. A distinction between compound and conjunct verbs is been made here so as to relate the V+V sequences to the former and the N+V and Adj+V to the latter" (1972:46). According to Wickramasinghe, the phrasal verbs given by Gair are conjunct verbs. However, when the new group given by Wickramasinghe is added to Gair's group, the phrasal verb may be described as follows:

1. Conjunct verbs
   a) Noun+verb
   b) Adj.+verb
   c) Non-free-morpheme+verb

2. Compound verbs
   Verb+verb

As stated above, composite forms that consist of two verbal sequences are treated as compound verbs. The final element of compound verbs is usually a form of damənəva or gannəva.

e.g. ta:tta parənəge: kaḍəla dæmma
father old house destroyed
"Father destroyed the old house"
eja: bat uja: gatta
he rice cooked
"He cooked rice"

However, damənəva is restricted in occurrence to some particular verbs and gannava occurs with certain others. I am not going into detail about this as it is not relevant to my

analysis. The first element of compound verbs is a non-past perfective form.

4.2.1 According to the above discussion , Gair does not deal with compound verbs on the one hand and on the other hand Wickramasinghe does not deal with the third group of phrasal verb, the non-free-morpheme+verb given by Gair. According to my data, however, the conjunct verb can be divided into five groups as follows:

1) Noun stem+verb
2) Adj. stem+verb
3) Non-free-morpheme+verb
4) Loan stem+verb

and

5) Onomatopoeic stem+verb

The compound verb is covered by the definition given by Wickamasinghe.

4.2.2 A phonological analysis of compound verbs is not given here as all stems of simple verbs have been analyzed in chapter 3: all stems involved in compound verbs are simple.

In conjunct verbs, native nominal and adjectival stems as well as loan stems that occur in nouns and adjectives are also not analyzed as they have already been analyzed by Woodhouse (1884-1886), Coomaraswamy (1923), Silva (1961), Kekulawala (1964) and Hettiaratchi (1965). However, the following groups of conjunct verbs are analyzed here as a phonological analysis of those stems has not yet been given in any other thesis:[2]

1) Non-free morphemes
2) Loan stems which do not occur outside conjunct verbs and
3) Onomatopoeic stems

---

[2] In the analysis, these are underlined.

4.3 Non-free morpheme

4.3.1 Syllable structure

Stems may be monosyllabic, disyllabic trisyllabic, quadrisyllabic or penta-syllabic. They may be C or V initial and C or V or final.

4.3.1.1 Monosyllabic stems

C initial and V final

CV̄	bo:ve-	"drink"
CV̄	ja:ve-	"join"

C initial and C final

CVC	ratve-	"warm"
CVC	rəskər-	"collect"

V initial and V final

V̄	a:vaḍ-	"support"

4.3.1.2 Disyllabic stems

C initial and V final

CVCV	pahuve-	"go after"
CVCCV	hambəve-	"meet"

C initial and C final

CVCVC	paṭangan-	"begin"
CVCCVC	vattankər-	"uphold"

V initial and V final

VCV	ahuve-	"capture"
VCV	usigan-	"make dogs go"

V initial and C final

VCVC	arakgan-	"save"
VCVC	ulukve-	"sprain"

4.3.1.3 Trisyllabic stems

C initial and V final

CVCVCV pahuruga:- "scratch"

4.3.1.4 Quadrisyllabic stems

V initial and V final

VCVCVCV atupatuga:- "sweep"

4.3.1.5 Pentasyllabic stems

V initial and C final

VCVCVCVCVC aturudahanve- "disappear"

4.3.2 Monosyllabic stems

Monosyllabic stems have three structures, CV, CVC and V.

The CV structure:

This structure has the following patterns: PV, SV and LV.

The PV pattern:

The P system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as $^{h/\underline{h}}$PV. The P system has two terms, p and k.

e.g. $^{h}P_{p}V$ pa:ve- "float"

$^{\underline{h}}P_{p}V$ bo:ve- "breed"

$^{h}P_{k}V$ kæ:gah- "shout"

$^{\underline{h}}P_{k}V$ gæ:ve- "touch"

The V systems may be ɨ, ɛ or ɑ. ɨ and ɛ function in w prosodic stems and ɑ functions in w and y prosodic stems. Length prosody is long.

e.g. $C\bar{\imath}^{w}$ bu:ga:- "shave"

$C\bar{\varepsilon}^{w}$ bo:ve- "breed"

$C\tilde{a}^{y}$	gæ:ve-	"touch"
$C\tilde{a}^{w}$	pa:ve-	"float"

The SV pattern:

The S system has one term ʔ.

e.g.	$S_{ʔ}V$	ha:ve-	"join"
	$S_{ʔ}V$	he:ja-	"dry"

The V systems may be ϵ or α and they unction in y and w prosodic stems respectively. Length prosody is long.

e.g.	$C\tilde{ɛ}^{y}$	he:ja-	"dry"
	$C\tilde{a}^{w}$	ha:ve-	"join"

The LV pattern:

The pattern is limited to one stem where the L system has the term č.

e.g.	$L_{č}V$	ja:kər-	"join"

The V system is α and the stem is w prosodic. Length prosody is long.

e.g.	$C\tilde{a}^{w}$	ja:kər-	"join"

The CVC struture:

The CVC structure has the following patterns: SVN, LVP, LVS and LVN.

The SVN pattern:

The pattern is limited to one stem where the S system has the term t and the N system has the term k. There is a contrast of systems, S-N in the pattern and the contrast of terms is t-k.

e.g.	$S_{t}VN_{k}$	sungve-	"destroy"

The V system is ɩ and the stem is w prosodic. Length prosody is short.

e.g.	$C_{ɩ}{}^{w}C$	sungve-	"destroy"

The LVP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $LV^{h}P$. The L system has the term $\underset{\cdot}{t}$ and the P system has the term t. There is a contrast of systems, L-P in the pattern and the contrast of terms is $\underset{\cdot}{t}$-t.

e.g. $L_{\underset{\cdot}{t}}V^{h}P_{t}$ ratve- "warm"

The V system is ɑ and the stem is w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C$ ratve- "warm"

The LVS pattern:

The pattern is limited to one stem where the L system has the term $\underset{\cdot}{t}$ and the S system has the term t. There is a contrast of systems, L-S in the pattern and the contrast of terms is $\underset{\cdot}{t}$-t.

e.g. $L_{t}VS_{\underset{\cdot}{t}}$ ræskər- "collect"

The V system is ɑ and the stem is y prosodic. Length prosody is short.

e.g. $C\alpha^{y}C$ ræskər- "collect"

The LVN pattern:

The L system has two terms, p and t and the N system has one term, k. There is a contrast of systems, L-N in the pattern and the contrast of terms is as follows: p-k and t-k.

e.g. $L_{p}VN_{k}$ venve- "separate"

$L_{t}VN_{k}$ lanve- "come close"

The V systems may be ɛ or ɑ and they function in y and w prosodic stems respectively. Length prosody is short.

e.g. $C\epsilon^{y}C$ venve- "separate"

$C\alpha^{w}C$ lanve- "come close"

The V structure:

The V structure is limited to one stem where the V is ɑ and the stem is w prosodic. Length prosody is short.

e.g. ā^{w} a:vad- "support"

4.3.3 Disyllabic stems

Disyllabic stems have the following structures: CVCV, CVCVC, CVCCVC, CVCCV, VCV, VCVC and VCCVC.

The CVCV structure:

This structure has the following patterns:

PVPV	PVSV	PVLV	SVNV
NVPV	NVSV	NVLV	-
LVPV	-	SVLV	-

The PVPV pattern:

The P systems are described in relation to h and h̲ prosodies. Thus, the pattern can be given as ^{h}/h̲P^{h}/h̲PV. The P initial system has three terms, p, t and k and the P initial system of the second syllable has three terms, t, ṭ and k. There is no contrast of systems in the pattern but there is a contrast of terms as follows: p-ṭ, p-t and t-ṭ.

e.g. $^{h}P_{p}V^{h}P_{ṭ}V$ paṭəbad̃- "conferring a title"
$h̲P_{p}Vh̲P_{t}V$ budijə- "sleep"
$^{h}P_{t}Vh̲P_{ṭ}V$ tuḍude- "cause"
$^{h}P_{k}V^{h}P_{k}V$ kakijə- "ache"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɩ	w-y
ɑ-ɛ	w-w
ɩ-ɩ	w-ə

Length prosody is short.

e.g. CɩwCɩy budijə- "sleep"
CɩwCɩw tuḍude- "cause"
CɑwCɛ paṭəbad̃- "conferring a title"
CɑwCɩy kakijə- "ache"

The PVSV pattern:

The P system is described in relation to h and h̲ prosody. Thus, the pattern can be given as ʰ/h̲PVSV. The P system has two terms,p and ṭ and the S system has two terms, t and ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows: p-ʔ, p-t and ṭ-ʔ.

e.g.	$^{h}P_{p}VS_{ʔ}V$	pahukər-	"over take"
	$^{h}P_{p}VS_{ʔ}V$	pasa:kar-	"pass through"
	$^{h̲}P_{p}VS_{ʔ}V$	bihive-	"be born"
	$^{h̲}P_{ṭ}VS_{ʔ}V$	dæhægan-	"grab"

The contrast of the V systems and syllable prosodies is as follows:

V systems	prosodies
ɪ - ɪ	y-y
ɑ-ɪ	w-w
ɑ-ɑ	

Length Prosody may be short or long when V is ɑ, otherwise it is short.

e.g.	$Cɪ^{y}Cɪ^{y}$	bihive-	"be born"
	$Cɑ^{w}Cɪ^{w}$	pahukər-	"over take"
	$Cɑ^{y}Cɑ^{y}$	dæhægan-	"grab"
	$Cɑ^{w}C\bar{ɑ}^{w}$	pasa:kər-	"pass through"

The PVLV pattern:

The P system is described in relation to h̲ prosody. Thus, the pattern can be given as h̲PVLV. The P system has one term, p and the L system has two terms t and ṭ. There is a contrast of systems, P-L in the pattern and the contrast of terms is as follows: p-t and p-ṭ.

e.g.	$^{h}P_{p}VL_{t}V$	balijə-	"cry loudly"
	$^{h}P_{p}VL_{ṭ}V$	barugah-	"break into parts"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɪ	w-y
	w-w

Length prosody is short.

e.g.	$Cɑ^{w}Cɪ^{y}$	balijə-	"cry loudly"

$C\alpha^{w}C\iota^{w}$ barugah- "break into parts"

The NVPV pattern:

The P system is described in relation to h prosody. Thus, the pattern can be given as NV$\underline{h}$PV. The N system has two terms, p and t and the P system has one term t. There is a contrast of systems, N-P in the pattern and the only contrast of terms is p-t.

e.g. $N_pV^hP_tV$ mo:duve- "spring up"

$N_tV^hP_tV$ nidijə- "sleep"

The contrast of the V systems and syllable prosodies is as follows:

V systems	prosodies
∈-ι	w-w
ι-ι	y-y

Length prosody of the initial syllable is long when V is ∈ and otherwise it is short.

e.g. $C\iota^{y}C\iota^{y}$ nidijə- "sleep"

$C\bar{\epsilon}^{w}C\iota^{w}$ mo:duve- "spring up"

The NVSV pattern:

The pattern is limited to one stem where the N system has the term p and the S system has the term ʔ. There is a contrast of systems, N-S in the pattern and the contrast of terms is p-ʔ.

e.g. $N_pVS_{ʔ}V$ muhuve- "mix"

The V systems are ι and the syllables are w prosodic. Length prosody is short.

e.g. $C\iota^{w}C\iota^{w}$ muhuve- "mix"

The NVLV pattern:

Both systems of the pattern have two terms, p and t. There is a contrast of systems, N-L in the pattern and the contrast of terms is as follows: p-t.

e.g. N_pVL_pV muvave- "be screened"

N_pVL_tV mælive- "laze"

NtVLtV nalijə- "wiggle"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɩ	y-y
ɩ-ɑ	w-y
	w-w

Length prosody may be short or long when V is ɑ, otherwise it is short.

e.g. CɑʸCɩʸ mælive- "laze"
CɩʷCɑ̄ʷ muva:ve- "be screened"
CɑʷCɩʸ nalijə- "wiggle"

The SVNV pattern:

The pattern is limited to one stem where the S system has the term t and the N system has the term p. There is a contrast of systems, S-N in the pattern and the contrast of terms is t-p.

e.g. StVNpV samugan- "bye"

The contrast of V systems is ɑ-ɩ. The syllables are w prosodic and length prosody is short.

e.g. CɑʷCɩʷ samugan- "bye"

The SVLV pattern:

The pattern is limited to one stem where the S system has the term t and the L system has the term ṭ. There is a contrast of systems, S-L in the pattern and the contrast of terms is t-ṭ.

e.g. StVLṭV særisar- "walk around"

The contrast of V systems is ɑ-ɩ. The syllables are y prosodic and length prosody is short.

e.g. CɑʸCɩʸ særisar- "walk around"

The LVPV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the

pattern can be given as LVʰPV. Both systems of the pattern have the term t. There is a contrast of systems, L-P in the pattern but there is no contrast of terms.

e.g. $L_tV^hP_tV$ latəve- "worry"

The contrast of V systems is α-ϵ and of syllable prosodies is w-ə.

e.g. $C\alpha^wC\epsilon$ latəve- "worry"

The CVCVC structure:

This structure has the following patterns:

PVPVP	PVPVN	PVLVP	PVLVN	-	-
NVLVP	-	-	-	-	-
-	SVLVN	-	-	SVPVS	SVLVL
-	LVSVN	_	_	_	_

The PVPVP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as ʰPVʰPVʰP. The P initial system has the term p and the P initial and final systems of the second syllable have the terms t̤ and t respectively. There is no contrast of systems in the pattern but there is a contrast of terms as follows: p-t̤-t.

e.g. $^hP_pV^hP_{\underline{t}}V^hP_t$ pitatve- "depart"

The contrast of V systems is ɪ-α and of syllable prosodies is y - w. Length prosody is short.

e.g. $C\imath^yC\alpha^wC$ pitatve- "depart"

The PVPVN pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as ʰPVʰPVN. The P initial system has the

term p and the P initial and N final systems of the second syllable have the terms t and k respectively. There is a contrast of systems, P-N in the pattern and the contrast of terms is p-ṭ-k.

e.g. $^{h}P_{p}VP_{t}VN_{k}$ paṭangan- "begin"

The V systems are α and the syllables are w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C\alpha^{w}C$ paṭangan- "begin"

The PVLVP pattern:

The pattern is limited to one stem where the P initial system of the initial syllable and the P final system of the second syllable are described in relation to h̲ and h prosodies respectively. Thus the pattern can be given as ^{h}PVLV^{h}P. The P initial system has the term t, the N initial and the P final systems of the second syllable have the terms č and t respectively. There is a contrast of systems, P-L-P in the pattern and the contrast of terms is t-č-t.

e.g. $^{h}P_{t}VL_{č}VP_{t}$ dijatve- "launch"

The contrast of V systems is ι-α and of syllable prosodies is y-w. Length prosody is short.

e.g. $C\iota^{y}C\alpha^{w}C$ dijatve- "launch"

The PVLVN pattern:

The P system is described in relation to h and h prosodies. Thus, the pattern can be given as $^{h/h}$PVLVN. The P system has two terms p and č, the L system has two terms, p and ṭ and the N system has one term k. There is a contrast of systems, P-L-N in the pattern and the contrast of terms is as follows: p-ṭ-k and č-p-k.

e.g. $^{h}P_{p}VL_{ṭ}VN_{k}$ peranga:- "scrape off"

$^{h}P_{č}VL_{p}VN_{k}$ ji:vankər- "vitalize..by charms"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ϵ-α	y-w

ι-α

Length prosody is long when V is ι, otherwise it is short.

e.g. $C\epsilon^{v}C\alpha^{w}C$ peranga:- "scrape off"

$C\bar{\iota}^{v}C\alpha^{w}C$ ji:vankər- "vitalize...by charms"

The NVLVP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $NVLV^{h}P$. The N system has the term t and the L and P systems have the terms ṭ and k respectively. There is a contrast of systems, N-L-P in the pattern and the contrast of terms is t-ṭ-k.

e.g. $N_{t}VL_{\dot{t}}V^{h}P_{k}$ norokve- "confront"

The V systems are ϵ and the syllables are w prosodic. Length prosody is short.

e.g. $C\epsilon^{w}C\epsilon^{w}C$ norokve- "confront"

The SVPVS pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $SV^{h}PVS$. The S initial system has the term t and the P system and the S final system of the second syllable have the terms k and t respectively. There is a contrast of systems, S-P-S in the pattern and the contrast of terms is t-k-t.

e.g. $S_{t}V^{h}P_{k}VS_{t}$ sakaskər- "adjust"

The V systems are α and the syllables are w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C\alpha^{w}C$ sakaskar- "adjust"

The SVLVN pattern:

The pattern is limited to one stem where the S system has the term t and the L and N systems have terms p and k respectively. There is a contrast of systems, S-L-N in the pattern and the contrast of terms is as follows: t-p-k.

e.g. $S_tVL_pVN_k$ so:va:ŋve- "attain to Sovan"
The contrast of V systems is ϵ-ɑ. The syllables are w prosodic and length prosody is long.
e.g. $C\bar{\epsilon}^wC\bar{\alpha}^wC$ so:va:ŋve- "attain to Sovan"

The SVLVL pattern:

The pattern is limited to one stem where the S system has the term ʔ and the L initial and L final systems of the second syllable have the terms t and p respectively. There is a contrast of systems, S-L in the pattern and the contrast of terms is ʔ-t-p.
e.g. $S_ʔVL_tVL_k$ hilavkər- "recoup"
The contrast of V systems is ɪ-ɑ and of syllable prosodies is y-w. Length prosody is short.
e.g. $Cɪ^yC\alpha^wC$ hilavkər- "recoup"

The LVSVN pattern:

The pattern is limited to one stem where the L system has the term p and the S and N systems have the terms t and k respectively. There is a contrast of systems, L-S-N in the pattern and the contrast of terms is p-t-k.
e.g. $L_pVS_tVN_k$ vasaŋkər- "hide"
The V systems are ɑ and the syllables are w prosodic. Length prosody is short.
e.g. $C\alpha^wC\alpha^wC$ vasaŋkər- "hide"

The CVCCVC structure:

This structure has the following patterns:
PVNNVN LVPPVN LVLNVP

The PVNNVN pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as ^hPVNNVN. The P system has the term p, the N final system of the initial syllable and the N initial

system of the second syllable have the term t and the N final system of the second syllable has the term k. There is a contrast of systems, P-N in the pattern and the contrast of terms is p-t-k.

e.g. $^{h}P_{p}VNN_{t}VN_{k}$ pennuŋkər- "show"

The contrast of V systems is ϵ-ι and of syllable prosodies is y-w. Length prosody is short.

e.g. $C\epsilon^{y}CC\iota^{w}C$ pennuŋkər- "show"

The LVPPVN pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as $LV^{h}PPVN$. The L system has the term p, the P final system of the initial syllable and the P initial system of the second syllable have the term t and the N system has the term k. There is a contrast of systems, L-P-N in the pattern and the contrast of terms is p-t-k.

e.g. $L_{p}V^{h}PP_{t}VN_{k}$ vattaŋkər- "uphold"

The V systems are α and the syllables are w prosodic. Length prosody is short.

e.g. $C\alpha^{w}CC\alpha^{w}C$ vattaŋkər- "uphold"

The LVLNVP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $LVLNV^{h}P$. The L initial and L final systems of the first syllable have the terms p and t respectively and the N and P systems have the terms p and t respectively. There is a contrast of systems, L-N-P in the pattern and the contrast of terms is p-t-p-t.

e.g. $L_{p}VL_{t}N_{p}V^{h}P_{t}$ valmatve- "lose the way"

The V systems is and the syllables are w prosodic.
Length prosody is short.

e.g. $C\alpha^{w}CC\alpha^{w}C$ valmatve- "lose the way"

The CVCCV structure:

This structure is limited to one stem where the pattern is SVNPV. The P system is described in relation to h prosody. Thus, the pattern can be given as SVNʰPV. The S system has the term ʔ and the N system and the P system have the term p. There is a contrast of systems, S-N-P in the pattern and the contrast of terms is as follows: ʔ-p.

e.g. $S_{ʔ}VN^{h}P_{p}V$ hambəve- "meet"

The contrast of V systems is α-ɛ and of syllable prosodies is w-ə. Length prosody is short.

e.g. $Cα^{w}CCɛ^{ə}$ hambəve- "meet"

The VCVC structure:

This structure has the following patterns: VPVN and VLVP.

The VPVN pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as VʰPVN. The P system has the term t and the N system has the term k. There is a contrast of systems, P-N in the pattern and the contrast of terms is t-k.

e.g. $V^{h}P_{t}VN_{k}$ udaŋan- "elevate"

The contrast of the V systems is ɪ-α. The syllables are w prosodic and length is short.

e.g. $Cɪ^{w}Cα^{w}C$ udaŋan- "elevate"

The VLVP pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as VLVʰP. The L system has the term t and the P system has the term k. There is a contrast of systems, L-P in the pattern and the contrast of terms is t-k.

e.g. $VL_{t}V^{h}P_{k}$ ulukve- "sprain"

The V systems are ɪ and the syllables are w prosodic. Length

prosody is short.

e.g. ɬʷCɬʷC ulukve- "sprain"

The VCV structure:

This structure is limited to one stem where the pattern is VSV. The S system has two terms, t and ʔ.

e.g. VSₜV usigan- "make dogs go"

VSʔV ahuve- "capture"

The contrast of the V systems and syllable prosodies is as follows:

V systems	prosodies
ɬ-ɬ	w-y
ɑ-ɬ	w-w

Length prosody is short.

e.g. ɬʷCɬʸ usigan- "make dogs go"

ɑʷCɬʷ ahuve- "capture"

The VCCVC structure:

This structure is limited to one stem where the pattern is VNPVN. The P system is described in relation to h prosody. Thus, the pattern can be given as VNʰPVN. The N final system of the initial syllable and the P system have the term p and the N final system of the second syllable has the term k. There is a contrast of systems, N-P-N in the pattern and the contrast of terms is as follows: p-k.

e.g. VNʰPₚVNₖ a:mbaŋkər- "subdue"

The V systems are ɑ and the syllables are w prosodic. Length prosody of the initial syllable is long and that of the second syllable is short.

e.g. ɑ̄ʷCCɑʷC a:mbaŋkər- "subdue"

4.3.4 Trisyllabic stems

Trisyllabic stems have the following structures: CVCVCV, CVCVCVC, CVCCVCV, CVCVCCV, CVCCVCVC, CVCVCCVC, VCVCV, VCCVCV, VCVCCV and VCVCVC.

The CVCVCV structure:

This structure has the following patterns:

PVPVLV	NVPVLV	PVLVLV	-	-
NVPVLV	-	-	NVNVSV	-
-	-	SVLVLV	-	-
-	-	-	-	LVMVLV

The PVPVLV pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as ^{h}PV^{h}PVLV. The P initial systems of the first and second syllables have the terms p and t̪ respectively and the L system has the term ɾ̪. There is a contrast of systems, P-L in the pattern and the contrast of terms is p-ɾ̪.

e.g. $^{h}P_{p}{}^{h}P_{t̪}VL_{ɾ̪}V$ pit̪a:reja- "over flow"

The contrast of V systems is ɪ-ɑ-ɛ and of syllable prosodies is y-w-y. Length of the second syllable is long and that of the other syllables is short.

e.g. CɪʸCɑ̃ʷCɛʸ pit̪a:reja- "over flow"

The PVNVLV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as ^{h}PVNVLV. The P system has the term k and the N system and the L system have the terms p and t̪ respectively. There is a contrast of systems, P-N-L in the pattern and the contrast of terms is k-p-t̪.

e.g. $^{h}P_{k}VN_{p}VL_{t̪}V$ kæ:morəde- "shout"

The contrast of V systems is ɑ-ɛ and of prosodies is y-w-ə. Length prosody of the initial syllable is long and that of the other syllables is short.

e.g. Cɑ̃ʸCɛʷCɛᵊ kæ:morəde- "shout"

The PVLVLV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as ^{h}PVLVLV. The P system has the term p, the L initial system of the second has the term ṭ and the L initial system of the third syllable has the term t. There is a contrast of systems, P-L in the pattern and the contrast of terms is p-ṭ-t.

e.g. $^{h}P_{p}VL_{ṭ}VL_{t}V$ paraləve- "become subject to a trance by a charm"

The contrast of V systems is α-ϵ and of syllable prosodies is w-ə. Length prosody is short.

e.g. $C\alpha^{w}C\epsilon^{ə}C\epsilon^{ə}$ paraləve- "become subject to a trance by a charm"

The NVPVLV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as NV^{h}PVLV. The N system has the term p, the P system has the term t and the L system has the term ṭ. There is a contrast of systems, N-P-L in the pattern and the contrast of terms is t-ṭ.

e.g. $N_{t}V^{h}P_{t}VL_{ṭ}V$ natərəve- "stop"

The contrast of V systems is α-ϵ and of syllable prosodies is w-ə. Length prosody is short.

e.g. $C\alpha^{w}C\alpha^{w}C\epsilon^{ə}$ natərəve- "stop"

The NVNVSV pattern:

The pattern is limited to one stem where the N initial system has the term p, the N initial system of the second syllable has the term t and the S system has the term ʔ. There is a contrast of systems, N-S in the pattern and the contrast of terms is p-t-ʔ.

e.g. $N_{p}VN_{t}VS_{ʔ}V$ menehikər- "muse"

The contrast of V systems is ϵ-ɪ. The syllables are y prosodic and length prosody is short.

e.g. $C_{\epsilon}{}^{\vee}C_{\epsilon}{}^{\vee}C_{\iota}{}^{\vee}$ menehikər- "muse"

The SVLVLV pattern:

The pattern is limited to one stem where the S system has the term ʔ, the L initial systems of the second and third syllables have the terms p and t respectively. There is a contrast of systems, S-L in the pattern and the contrast of terms is ʔ-p-t.

e.g. $S_{ʔ}VL_{p}VL_{t}V$ hevilikər- "cover a roof"

The contrast of V systems is ϵ-ι. The syllables are y prosodic and length is short.

e.g. $C_{\epsilon}{}^{\vee}C_{\iota}{}^{\vee}C_{\iota}{}^{\vee}$ hevilikər- "cover a roof"

The LVMVPV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as follows: $LVMV^{h}PV$. The L system has the term $\underset{\cdot}{t}$, the M system has the term p and the P system has the term $\underset{\cdot}{t}$. There is a contrast of systems, L-M-P in the pattern and the contrast of terms is $\underset{\cdot}{t}$-p-$\underset{\cdot}{t}$.

e.g. $L_{\underset{\cdot}{t}}VM_{p}V^{h}P_{\underset{\cdot}{t}}V$ r$\overset{N}{\text{æ}}$b$\underset{\cdot}{\text{i}}t\underset{\cdot}{\text{i}}$gæh- "wrinkle"

The contrast of V systems is α-ι. The syllables are y prosodic and length prosody is short.

e.g. $C\alpha^{w}C_{\iota}{}^{\vee}C_{\iota}{}^{\vee}$ ræb$\underset{\cdot}{\text{i}}t\underset{\cdot}{\text{i}}$gæh- "wrinkle"

The CVCVCVC structure:

This structure has the following patterns:

PVPVNVN	PVLVPVP	PVLVSVN	SVNVPVN
PVPVSVN	SVLVPVP	-	-
-	SVLVPVP	-	-

The PVPVNVN pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as $^{h}PV^{h}PVNVN$. The P initial systems of

the first and the second syllables have the terms p and ṭ respectively and the N initial and final systems of the third syllable have the terms p and k respectively. There is a contrast of systems, P-N in the pattern and the contrast of terms is p-ṭ-p-k.

e.g. $^{h}P_{p}V^{h}P_{ṭ}VN_{p}VN_{k}$ piṭəmaŋkər- "expel"

The contrast of V systems is ɩ-ɛ-ɑ and of syllable prosodies is y-ə-w. Length prosody is short.

e.g. $CɩᵛCɛ^{ə}CɑʷC$ piṭəmaŋkər- "expel"

The PVPVSVN pattern:

The P systems are described in relation to h prosody. Thus, the pattern can be given as $^{h}PV^{h}PVSVN$. The P initial systems of the first and second syllables have the terms p and t respectively and the S and N systems have the terms t and ṭ respectively. There is a contrast of systems, P-S-N in the pattern and the contrast of terms is p-ṭ-t-k.

e.g. $^{h}P_{p}V^{h}P_{ṭ}VS_{t}VN_{ṭ}$ paṭisande- "result"

The contrast of V systems is ɑ-ɩ-ɑ and of syllable prosodies is w-y-w. Length prosody is short.

e.g. $CɑʷCɩᵛCɑʷC$ paṭisande- "result"

The PVLVPVP pattern:

The pattern is limited to one stem where the P initial system is described in relation to h prosody and the P initial and final systems of the third syllable are described in relation to h prosody. Thus, the pattern can be given as $^{h}PVLV^{h}PV^{h}P$. The P initial system has the term t and the P initial and final systems of the third syllable have the terms p and t respectively. The L system has the term ṭ. There is a contrast of systems, P-L-P in the pattern and the contrast of terms is t-ṭ-p-t.

e.g. $^{h}P_{t}VL_{ṭ}V^{h}P_{p}V^{h}P_{t}$ dira:patve- "decay"

The contrast of V systems is ɩ-ɑ and of syllable prosodies is y-w. Length prosody of the second syllable is long and that of

the others is short.
e.g. $C\iota^{y}C\bar{a}^{w}Ca^{w}C$ dira:patve- "decay"

The SVNVPVN pattern:

The P system is described in relation to h prosody. Thus, the pattern can be given as SVNVhPVN. The S system and the N initial system of the second syllables have the terms t and p respectively, and the P and N systems of the second syllable have the terms t and k respectively. There is a contrast of systems, S-N-P-N in the pattern and the contrast of terms is t-p-t-k.
e.g. $S_tVN_pV^hP_tVN_k$ sama:danve- "observe"
The V system is a and the syllables are w prosodic. Length prosody of the second syllable is long and that of the other syllables is short.
e.g. $Ca^{w}C\bar{a}^{w}Ca^{w}C$ sama:danve- "observe"

The SVSVPVP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as SVSVhPVhP. The S initial systems of the first and the second syllables have the terms t and ʔ respectively and the P initial and final systems of the third syllable have the terms p and t respectively. There is a contrast of systems, S-P in the pattern and the contrast of terms is t-ʔ-p-t.
e.g. $S_tVS_{ʔ}V^hP_pV^hP_t$ sihipatve- "become conscious"
The contrast of V systems is ι-a and of syllable prosodies is y-w. Length prosody is short.
e.g. $C\iota^{y}C\iota^{y}Ca^{w}C$ sihipatve- "become conscious"

The SVLVPVP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as SVLVhPVhP. The S system has the term

t, the L system and the P initial system of the third syllable have the term p, and the P final system of the third syllable has the term t. There is a contrast of systems, S-L-P in the pattern and the contrast of terms is t-p-t.

e.g. $S_tVL_pV^hP_pV^hP_t$ suvəpatve- "recover"

The contrast of V systems is ɪ-ɛ-ɑ and of syllable prosodies is w-ə-w. Length prosody is short.

e.g. $Cɪ^wCɛ^əCɑ^wC$ suvəpatve- "recover"

The SVSVSVN pattern:

The pattern is limited to one stem where the S initial systems of the first, second and third syllables have the terms t, ʔ and t respectively and the N system has the term k. There is a contrast of systems, S-N in the pattern and the contrast of terms is p-ʔ-t-k.

e.g. $S_tVS_ʔVS_tVN_k$ sihisaŋve- "become conscious"

The contrast of V systems is ɪ-ɑ and of syllable prosodies is y-w. Length prosody is short.

e.g. $Cɪ^yCɪ^yCɑ^wC$ sihisaŋve- "become conscious"

The LVPVPVP pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as $LV^hPV^hPV^hP$. The L system has the term č, the P initial system of the second syllable has the term ṭ and the P initial and final systems of the third syllable have terms p and t respectively. There is a contrast of systems, L-P in the pattern and the contrast of terms is č-ṭ-p-t.

e.g. $Lč^yV^hP_tV^hP_pV^hP_t$ jaṭəpatve- "set aside"

The contrast of V systems is ɑ-ɛ-ɑ and of syllable prosodies is w-ə-w. Length prosody is short.

e.g. $Cɑ^wCɛ^əCɑ^wC$ jaṭəpat͡ve- "set aside"

The CVCCVCV structure:

This structure is limited to one stem where

the pattern is PVPNVPV. The P initial system is described in relation to $\underline{h}$ prosody and the P systems of the other syllables are described in relation to h prosody. Thus the pattern can be given as $\underline{h}$PV^{h}PNV^{h}PV. The P initial systems of the first and the second syllables have the term t, the N system has the term p and the P initial system of the third syllable has the term $\underline{t}$. There is a contrast of systems, P-N-P in the pattern and the contrast of terms is t-p-$\underline{t}$.

e.g. $\underline{h}$P$_{t}$V^{h}P$_{t}$N$_{p}$V^{h}P$_{\underline{t}}$V datmitika- "grind the teeth"

The contrast of V systems is α-ι and of syllable prosodies is w-y. Length prosody is short.

e.g. Cα^{w}CCι^{y}Cι^{y} datmitika- "grind the teeth"

The CVCCVCVC structure:

The structure is limited to one stem where the pattern is SVPPVLVN. The P systems are described in relation to h prosody. Thus, the pattern can be given as SV^{h}PPVLVN. The S system has the term t, the P final system of the first syllable and the P initial system of the second syllable have the term p and the L system and the N system have the terms č and k respectively. There is a contrast of systems, S-P-L-N in the pattern and the contrast of terms is t-p-č-k.

e.g. S$_{t}$V^{h}PP$_{p}$VL$_{\check{c}}$VN$_{k}$ sappa:jaŋve- "partake of food"

The V systems are α and the syllables are w prosodic. Length prosody of the second syllable is long and that of the other syllables is short.

e.g. Cα^{w}CC$\bar{\alpha}^{w}$Cα^{w}C sappa:jaŋve- "partake of food"

The CVCVCCVC structure:

The structure is limited to one stem where the pattern is NVPVNPVP. The P initial system of the second syllable is described in relation to h prosody and the P systems of the third syllable are described in relation to h prosody. Thus, the pattern can be given as NV$\underline{h}$PVN^{h}PV^{h}P. The N

initial system has the term p, the P initial system of the second syllable has the term t, the N final system of the second syllable and the P initial system of the third syllable have the term p and the P final system of the third syllable has the term t. There is a contrast of systems, N-P-N-P in the pattern and the contrast of terms is p-t-p-t.

e.g. $N_pV\underline{h}P_tVN^hP_pV^hP_t$ mudumpatve- "attain the utmost"

The contrast of V systems is ɪ-ɑ. The syllables are w prosodic and length prosody is short.

e.g. $CɪwCɪwCCɑwC$ mudumpatve- "attain the utmost"

The VCVCV structure:

This structure has the following patterns: VPVPV, VLVNV and VLVLV.

The VPVPV pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as V^hPV^hPV. The P initial systems of the second and the third syllables have the terms p and t respectively. There is no contrast of systems in the pattern but there is a contrast of terms: p-t.

e.g. $V^hP_pV^hP_tV$ apəteja- "waste"

The contrast of V systems is ɑ-ɛ and of syllable prosodies is w-ə-y. Length prosody is short.

e.g. $ɑ^wCɛ^əCɛ^y$ apəteja- "waste"

The VLVNV pattern:

The pattern is limited to one stem where the L system has the term ṭ and the N system has the term t. There is a contrast of systems, L-N in the pattern and the contrast of terms is ṭ-t.

e.g. $VL_ṭVN_tV$ urənəve- "get angry"

The contrast of V systems is ɪ-ɛ and of syllable prosodies is w-ə. Length prosody is short.

e.g. $^{w}C\epsilon^{\partial}C\epsilon$ urənave- "get angry"

The VLVLV pattern:

The pattern is limited to one stem where the L initial system of the second syllable has the term p and that of the third syllable has the term t̤. There is no contrast of systems in the pattern but there is a contrast of terms: p-t̤.

e.g. $VL_{p}VL_{\underline{t}}V$ ivərave- "finish"

The contrast of V systems is ɩ-ϵ and of syllable prosodies is y-ə. Length prosody is short.

e.g. $^{y}C\epsilon^{\partial}C\epsilon^{\partial}$ ivərave- "finish"

The VCVCCV structure:

The structure is limited to one stem where the pattern is VNVPPV. The P systems are described in relation to h prosody. Thus, the pattern can be given as $VNV^{h}PPV$. The N system has the term p and the P final system of the second syllable and the P initial system of the third syllable have the term t̤. There is a contrast of systems, N-P in the pattern and the contrast of terms is p-t.

e.g. $VN_{p}V^{h}PP_{\underline{t}}V$ æmætt̤ive- "wrench"

The contrast of V systems is ɑ-ɩ. The syllables are y prosodic and length prosody is short.

e.g. $\alpha^{y}C\alpha^{y}CC\iota^{y}$ æmætt̤ive- "wrench"

The VCCVCV structure:

The structure is limited to one pattern, VPPVSV where the P systems are described in relation to h and h̲ prosodies. Thus, the pattern can be given as $V^{h/\underline{h}}PPVSV$. The P final system of the initial syllable and the P initial system of the second syllable have two terms, p and k and the S system of the third syllable has two terms, t and ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows: p-ʔ and k-t.

e.g. $V_{h}PP_{p}VS_{ʔ}V$ æbbæhive- "accustom"

$VhPP_{k}VS_{t}V$ ekka:sukər- "collect"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɑ-	y-y-y
ɛ-ɑ-	y-w-w

Length prosody is long when V is ɑ where the syllable is w prosodic and otherwise it is short.

e.g. $ɛ^{y}CCɑ^{w}Cı^{w}$ ekka:sukər- "collect"

$ɛ^{y}CCɑ^{y}Cı^{y}$ æbbæhive- "accustom"

The VCVCVC structure:

This structure has two patterns, VPVSVS and VPVLVL.

The VPVSVS pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $V_{h}PVSVS$. The P system has the term t and the S initial systems of the second and third syllables have the terms ʔ and t respectively. There is a contrast of systems, P-S in the pattern and the contrast of terms is t-ʔ-t.

e.g. $V_{h}P_{t}VS_{ʔ}VS_{t}$ udahasve- "get angry"

The contrast of V systems is ı-ɑ. The syllables are w prosodic and length prosody is short.

e.g. $^{w}Cɑ^{w}Cɑ^{w}C$ udahasve- "get angry"

The VPVLVL pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $V_{h}PVLVL$. The P system has the term ṭ and the L initial and final systems of the third syllable have the terms p and t respectively. There is a contrast of systems, P-L in the pattern and the contrast of terms is ṭ-p-t.

e.g. $V_{h}P_{ṭ}VL_{p}VL_{t}$ aḍəvalkər- "close a little"

The contrast of V systems is ɑ-ɛ-ɑ and of syllable prosodies is w-ə-w. Length prosody is short.
e.g. ɑʷCɛᵊCɑʷC ad̤əvəlkər- "close a little"

4.3.5 Quadrisyllabic stems

Quadri-syllabic stems have the following structures, CVCVCVCV, CVCVCVCVC, CVCCVCCVCV, CVCVCVCCVC, VCVCVCV, VCCVCVCV and VCVCVCVC.

The CVCVCVCV structure:

This structure has two patterns, PVPVPVNV and PVSVLVLV.

The PVPVPVNV pattern:

The pattern is limited to one stem where the P system of the second syllable is described in relation to h prosody and the P systems of the other syllables are described in relation to h prosody. Thus, the pattern can be given as ʰPVhPVʰPVNV. The P initial systems of the first, second and third syllables have the terms p, t and k respectively and the N system has the term t. There is a contrast of systems, P-N in the pattern and the contrast of terms is p-t-k-t.
e.g. ʰPₚVhPₜVʰPₖVNₜV pædəkunukər- "circumambulate"
The contrast of V systems is ɑ-ɛ- and of syllable prosodies is y-ə-w. Length prosody is short.
e.g. CɑʸCɛᵊCɩʷCɩʷ pædəkunukər- "circumambulate"

The PVSVPVPV pattern:

The pattern is limited to one stem where the P system of the third syllable is described in relation to h prosody and those of others are described in relation to h prosody. Thus, the pattern can be given as ʰPVSVhPVʰPV. The P initial systems of the first and the second syllables have the term p and the S system and the P initial system of the fourth

syllable have the terms p and ṭ respectively. There is a contrast of systems, P-S-P in the pattern and the contrast of terms is p-t-p-ṭ.

e.g. $^{h}P_{p}VS_{t}V^{h}P_{p}V^{h}P_{ṭ}V$ pasubaṭəve- "discourage"

The contrast of V systems is α-ɪ-α. The syllables are w-ə prosodic and length is short.

e.g. $C\alpha^{w}C\imath^{w}C\alpha^{w}C\epsilon$ pasubaṭəve- "discourage"

The PVSVLVLV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. The P system has the term t, the S system has the term ʔ and the L initial systems of the third and fourth syllables have the terms p and t respectively. There is a contrast of systems, P-S-L in the pattern and the contrast of terms is t-ʔ-p-t.

e.g. $^{h}P_{t}VS_{ʔ}VL_{p}VL_{t}V$ tahavurukər- "confirm"

The contrast of V systems is α-ɪ. The syllables are w prosodic and length prosody is short.

e.g. $C\alpha^{w}C\alpha^{w}C\imath^{w}C\imath^{w}$ tahavurukər- "confirm"

The CVCVCVCVC structure:

The structure is limited to one stem where the pattern is PVPVLVSVL. The P systems are described in relation to h prosody. Thus, the pattern can be given as $^{h}PV^{h}PVLVSVL$. The P initial systems of the initial and second syllables have the terms p and ṭ respectively, the L initial system of the third syllable has the term p and the S system and the L final system of the fourth syllable have the terms ʔ and t respectively. There is a contrast of systems, P-L-S-L in the pattern and the contrast of terms is p-ṭ-p-ʔ-t.

e.g. $^{h}P_{p}V^{h}P_{ṭ}VL_{p}VS_{ʔ}VL_{t}$ piṭuvahalkər- "expel"

The contrast of V systems is ɪ-α and of syllable prosodies is y-w. Length prosody is short.

e.g. $C\imath^{y}C\imath^{w}C\alpha^{w}C\alpha^{w}C$ piṭuvahalkər- "expel"

The CVCVCVCCVC structure:

The structure is limited to one stem where the P system of the second syllable is described in relation to h̲ prosody and those of others are described in relation to h prosody. Thus, the pattern can be given as ʰPVh̲PVʰPVʰPPVN. The P initial systems of the first, second and third syllables have the terms k, ṭ and p respectively, the P final system of the third syllable and the P initial system of the fourth syllable have the term ṭ, and the N system has the term k. There is a contrast of systems, P-N in the pattern and the contrast of terms is k-ṭ-p-ṭ-k.

e.g. PVPVPVPPVN kuḍupaṭṭaŋkər- "destroy"

The contrast of V systems is ɩ-ɑ. The syllables are w prosodic and length prosody is short.

e.g. CɩʷCɩʷCɑʷCCɑʷC kuḍupaṭṭaŋkər- "destroy"

The CVCCVCCVCV structure:

The structure is limited to one stem where the pattern is PVSNVNPVPV. The P system of the third syllable is described in relation to h̲ prosody and those of others are described in relation to h prosody. Thus, the pattern can be given as ʰPVSNVNh̲PVʰPV. The P initial systems of the first and fourth syllables as well as the S system and the N initial system of the second syllable have the term t and the N final system of the second syllable and the P initial system of third syllable have the term p. There is a contrast of systems, P-S-N-P in the pattern and the contrast of terms is t-p-t.

e.g. ʰPₜVSNₜVNh̲Pₚ Vʰ Pₜ V tusni:mbu:təve- "silence"

The contrast of V systems is ɩ-ϵ and of syllable prosodies is w-y-w-ə. Length prosody of the first and the fourth syllables is short and that of the others is long.

e.g. CɩʷCCɪ̄ʸCCɪ̄ʷCϵə tusni:mbu:təve- "silence"

The VCVCVCV structure:

This structure has three patterns, VPVPVPV, VPVPVNV and VPVPVSV.

The VPVPVPV pattern:

The pattern is limited to one stem where the P initial system of the second syllable is described in relation to h prosody and those of others are described in relation to h and h̲ prosodies. Thus, the pattern can be given as VʰPVʰPVʰPV. The P initial system of the second syllable has the term t, the P initial system of the third syllable has two terms p and t and the P initial system of the fourth syllable has two terms, t and t̤. There is no contrast of systems in the pattern but there is a contrast of terms: t-p-t and t-t̤.

e.g. VʰPₜVʰPₚVʰPₜV atupatuga:- "sweep"

VʰPₜVʰ̲PₜVʰ̲P̤ₜV ætidædikər- "bring up"

The contrast of V systems is ɑ-ɩ-ɑ- and they function in y and w prosodic syllables. Length prosody is short.

e.g. ɑʷCɩʷCɑwCɩʷ atupatuga:- "sweep"

ɑʸCɩʸCɑʸCɩʸ ætidædikər- "bring up"

The VPVPVNV pattern:

The pattern is limited to one stem where the P initial systems of the second and third syllables are described in relation to h and h̲ prosodies respectively. Thus, the pattern can be given as VʰPVʰPVNV. The P initial systems of the second and third syllables have the terms t̤ and p respectively and the N system has the term t. There is a contrast of systems, P-N in the pattern and the contrast of terms is t̤-p-t.

e.g. VʰPₜVʰPₚVNₜV ad̤əpanəve- "stun"

The contrast of V systens is ɑ-ϵ-ɑ-ϵ and of syllable prosodies is w-ə-w-ə. Length prosody is short.

e.g. ɑʷCϵəCɑʷCϵ ad̤əpənəve- "stun"

VPVPVS:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as V^hPV^hPVSV. The P initial systems of the second and third syllables have the terms t and p respectively and the S system has the term ʔ . There is a contrast of systems, P-S in the pattern and the contrast of terms is p-t-ʔ.

e.g. $V^hP_tV^hP_pVS_ʔV$ atəpahukər- "forget"

The contrast of V systems is ɑ-ɛ-ɑ- and of syllable prosodies is w-ə-w. Length prosody is short.

e.g. $ɑ^wCɛ^əCɑ^wCɩ^w$ atəpahukər- "forget"

The VCVCVCCVC structure:

This structure has two patterns, VPVLVNVN and VNVNVPVN.

The VPVLVNVN pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $V^hPVLVNVN$. The P and L systems have the terms t and ṭ respectively and the N initial and final systems of the third syllable have the terms p and k respectively. There is a contrast of systems, P-L-N in the pattern and the contrast of terms is t-ṭ-p-k.

e.g. $V^hP_tVL_ṭVN_pVN_k$ atərəmaŋve- "lose the way"

The contrast of V systems is ɑ-ɛ-ɑ and of syllable prosodies is w-ə -w. Length prosody is short.

e.g. $ɑ^wCɛ^əCɛ^əCɑ^wC$ atərəmaŋve- "lose the way"

The VNVNVPVN pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $VNVNV\underline{h}PVN$. The N initial systems of the second and third syllables have the terms t and p respectively and the P system and the N final system of the

fourth syllable have the terms t and k respectively. There is a contrast of systems, N-P-N in the pattern and the contrast of terms is t-p-t-k.

e.g. $VN_tVN_pV^hP_tVN_k$ anumo:danve- "observe"

The contrast of V systems is α-ɪ-ɛ-α. The syllables are w prosodic and length prosody of the third syllable is long and that of the others is short.

e.g. $\alpha^wC\imath^wC\tilde{\varepsilon}^wC\alpha^wC$ anumo:danve- "observe"

The VCCVCVCV structure:

The structure is limited to one stem where the pattern is VPPVPVNV. The P systems are described in relation to h prosody. Thus, the pattern can be given as V^hPPV^hPVNV. The P final system of the initial syllable and the P initial system of the second syllable have the term t̤, the P initial system of the third syllable has the term k and the N system of the fourth syllable has the term t. There is a contrast of systems, P-N in the pattern and the contrast of terms is t̤-k-t.

e.g. $V^hPP_{\underset{\cdot}{t}}V^hP_kVN_tV$ æt̤t̤əkuna:ve- "spoil"

The contrast of V systems is α-ɛ-ɪ-α and of syllable prosodies is y-ə-w. Length prosody of the fourth syllable is long and that of the others is short.

e.g. $\alpha^yCC\varepsilon^{\partial}C\imath^wC\bar{\alpha}^w$ æt̤t̤əkuna:ve- "spoil"

4.3.6 Pentasyllabic stems

The penta-syllabic stems have three strutures, CVCVCVCVCV, VCVCVCVCV and VCVCVCVCVC.

The CVCVCVCVCV structure:

The structure is limited to one stem where the pattern is SVNVLVSVNV. The S initial systems of the first and the fourth syllables as well as the N initial systems of the second and fifth syllables have the term t and the L system has the term p. There is a contrast of systems,

S-N-L-S-N in the pattern and the contrast of terms is t-p-t.
e.g. $S_tVN_tVL_pVS_tVN_tV$ sunuvisunuve- "destroy"
The V system is ɩ and it funtions in y and w prosodic syllables. Length prosody is short.
e.g. $CɩwCɩwCɩyCɩwCɩw$ sunuvisunuve- "destroy"

The VCVCVCVCV structure:

The structure is limited to one stem where the pattern is VPVPVPVPV. The P initial system of the fifth syllable is described in relation to h̲ prosody and those of the other syllables are described in relation to h prosody. Thus, the pattern can be given as $V^hPV^hPV^hPV^{h̲}PV$. The P initial systems of the third, fourth and fifth syllables have the terms k,t,p and t respectively. There is no contrast of systems in the pattern but there is a contrast of terms as follows: k-t-p-t.
e.g. $V^hP_kV^hP_tV^hP_pV^{h̲}P_tV$ ekətu͡pa:da:ve- "assemble"
The contrast of V systems is ɛ-ɩ-ɑ and of syllable prosodies is y-ə-w. Length prosody of the fourth and the fifth syllables is long and that of the other syllables is short.
e.g. $ɛyCɛəCɩwCāwCāw$ ekətu͡pa:da:ve- "assemble"

The VCVCVCVCVC structure:

The structure is limited to one stem where the pattern is VPVLVPVSVN. The P initial systems of the second and the fourth syllables are described in relation to h and h̲ prosodies respectively. Thus, the pattern can be given as $V^hPVLV^{h̲}PVSVN$. The P initial systems of the second and the fourth syllable have the term t, the L system has the term t and the S system and the N system have the terms ʔ and k respectively. There is a contrast of systems, P-L-P-S-N in the pattern and the contrast of terms is t-t̤-t-ʔ-k.
e.g. $V^hP_tVL_{t̤}V^{h̲}P_tVS_ʔVN_k$ aturudahanve- "disappear"
The contrast of V systems is ɑ-ɩ-ɑ. The syllables are w prosodic and length prosody is short.

e.g. $\alpha^{w}C\iota^{w}C\iota^{w}C\alpha^{w}C\alpha^{w}C$ aturudahanve- "disappear"

According to the above analysis, the phonological structure of the given stems differs from those of simple verb stems in several ways; i) the M system which occurs in simple stems does not occur in the stems given above, ii) length prosody of CV type stem structures is always long in non-free morphemes whereas CV stem structures can be short or long in simple verb stems iii) there is no systematic prosodic relationship in the polysyllabic stems given above whereas there is such a relationship in disyllabic stems of simple verbs and iv) simple verb stems are either monosyllabic or disyllabic but the stems given above can be monosyllabic, disyllabic, trisyllabic, quadrisyllabic or pentasyllabic. All structures along with the patterns they have are given in Table 5.

	Structures	Number of patterns
Monosyll. stems	CV	3
	CVC	4
	V	1
Disyll. stems	CVCV	9
	CVCVC	10
	CVCCVC	3
	CVCCV	1
	VCVC	2
	VCCVC	1
Trisyll. stems	CVCVCV	8
	CVCVCVC	7
	CVCCVCV	1
	CVCVCCV	1
	CVCCVCVC	1

	CVCVCCVC	1
	VCVCV	3
	VCCVCV	1
	VCVCCV	1
	VCVCVC	2
Quadrisyll. stems	CVCVCVCV	2
	CVCVCVCVC	1
	CVCCVCCVCV	1
	CVCVCVCCVC	1
	VCVCVCV	1
	VCVCVCVC	2
Pentasyll. stems	CVCVCVCVCV	1
	VCVCVCVCV	1
	VCVCVCVCVC	1

Table 5. Phrasal verb stems (Non-free morphemes)

4.4 Loan stems

Loan stems may be Tamil, Sankrit, Pali or English.[3]

4.4.1 Tamil stems

There are a large number of Tamil loans in Sinhalese, but there are a few stems that occur only in phrasal verbs[1]. They are given below. Tamil stems may be disyllabic or trisyllabic.

4.4.1.1 Disyllabic stems

Disyllabic stems have four structures, CVCV, CVCCV, CVCVC, and CVCCVC.

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[3] As there are very few loan stems the syllable structure of them is not discussed separately.

The CVCV structure:

This structure is limited to one stem where the pattern is LVSV. The L system has the term p and the S system has the term t. There is a contrast of systems, L-S in the pattern and the contrast of terms is p-t.

e.g. L_pVS_tV visikər- "throw out"

The V systems are ɩ and the syllables are y prosodic. Length prosody is short.

e.g. $Cɩ^yC_{ɩy}$ visikər- "throw out"

The CVCCV structure:

This structure has the following patterns:

PVPPV	PVNPV	PVLLV
LVPPV	SVNPV	NVLLV
NVPPV	-	-

The PVPPV pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as $^hPV^hPPV$. The P initial system has the term p and the P final system of the first syllable and the P initial system of the second syllable have the term t. There is no contrast of systems in the patterns but there is a contrast of terms: p-t.

e.g. $^hP_pV^hPP_tV$ pattukər- "light"

The contrast of V systems is α-ɩ. The syllable are w prosodic and length prosody is short.

e.g. $Cα^wCCɩ^w$ pattukər- "light"

The PVNPV pattern:

The pattern is limited to one stem where the P initial system is described in relation to h prosody and the P initial system of the second syllable is described in relation to h prosody. Thus, the pattern can be given as $^hPVN\underline{h}PV$. The P initial system has the term k and the N system and the P

initial system of the second syllable have the term t. There is a contrast of systems, P-N-P in the pattern and the contrast of terms is k-t.

e.g. $^{h}P_{k}VN^{h}P_{t}V$ ka:nduve- "leak"

The contrast of V systems is α-ι . The syllables are w prosodic. Length prosody of the first syllable is long and that of the second syllables is short.

e.g. $C\bar{a}^{w}CC\iota^{w}$ ka:nduve- "leak"

The PVLLV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as ^{h}PVLLV. The P system has the term k and the L final system of the first syllable and the L initial system of the second syllable have the term t. There is a contrast of systems, P-L in the pattern and the contrast of terms is k-t.

e.g. $^{h}P_{k}VLL_{t}V$ kollaka- "plunder"

The contrast of V systems is ϵ-α. The syllables are w prosodic and lenth prosody is short.

e.g. $C\epsilon^{w}CC\alpha^{w}$ kollaka- "plunder"

The NVPPV pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as NV^{h}PPV. The N system has the term p and the P final system of the first syllable and the P initial system of the second syllable have the term ṭ. There is a contrast of systems, N-P in the pattern and the contrast of terms is p-ṭ.

e.g. $N_{p}V^{h}PP_{\dot{t}}V$ mattukər- "chastise"

The contrast of V systems is α-ι. The syllables are w prosodic and length prosody is short.

e.g. $C\alpha^{w}CC\iota^{w}$ mattukər- "chastise"

The NVLLV pattern:

The pattern is limited to one stem where the N system has the term p and the L final system of the first syllable and the L initial system of the second syllable have the term t. There is a contrast of systems, N-L in the pattern and the contrast of terms is p-t.

e.g. N_pVLL_tV mellәkәr- "subdue"

The V system is ϵ and it functions in y and ə prosodic syllables. Length prosody is short.

e.g. $C\epsilon^{y}CC\epsilon$ mellәkәr- "subdue"

The SVNPV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as $SVN_{\underline{h}}PV$. All systems of the pattern have the term t. There is a contrast of systems, S-N-P in the pattern but there is no contrast of terms.

e.g. $S_tVN_{\underline{h}}P_tV$ se:nduve- "arrive"

The contrast of V systems is ϵ-ι and of syllable prosodies is y-w. Length prosody of the first and second syllables is long and short respectively.

e.g. $C\tilde{\epsilon}^{y}CC\iota^{w}$ se:nduve- "arrive"

The LVPPV pattern:

The pattern is limited to one stem where the P systems are described in relation to h prosody. Thus, the pattern can be given as $LV^{h}PPV$. The L system has the term p and the P final system of the first syllable and the P initial system of the second syllable have the term t. There is a contrast of systems, L-P in the pattern and the contrast of terms is p-t.

e.g. $L_pV^{h}PP_tV$ va:ttukәr- "cast metal in mould"

The contrast of V systems is α-ι . The syllables are w prosodic, and length prosody of the first syllable is long and that of the second syllable is short.

e.g. $C\bar{a}^{w}CC\imath^{w}$ va:ttukər- "cast metal in mould"

The CVCVC structure:

The structure is limited to one stem where the pattern is PVLVL. The P system is described in relation to h prosody. Thus, the pattern can be given as ^{h}PVLVL. The P system has the term k and the L initial and final systems of the second syllable have the terms p and t respectively. There is a contrast of systems, P-L in the pattern and the contrast of terms is k-p-t.

e.g. $^{h}P_{k}VL_{p}VL_{t}$ ke:velkər- "cheat"

The V system is ϵ and the syllables are y prosodic. Length prosody of the initial syllable is long and that of the second syllable is short.

e.g. $C\bar{\epsilon}^{y}C\epsilon^{y}C$ ke:velkər- "cheat"

The CVCCVC structure:

The structure is limited to one stem where the pattern is NVPPVL. The P systems are described in relation to h prosody. Thus, the pattern can be given as NV^{h}PPVL. The N system has the term p, the P final system of the first syllable and the P initial system of the second syllable have the term č and the L system has the term t. There is a contrast of systems, N-P-L in the pattern and the contrast of terms is p-č-t.

e.g. $N_{p}V^{h}PP_{\check{c}}VL_{t}$ me:ččalkər- "subdue"

The contrast of V systems is ϵ-α and of syllable prosodies is y-w. Length prosody of the first syllable is long and that of the second syllable is short.

e.g. $C\bar{\epsilon}^{y}CC\alpha^{w}C$ me:ččalkər- "subdue"

4.4.1.2 Trisyllabic stems

Trisyllabic stems have two structures, CVCVCCV and VCVCCV.

The CVCVCCV struture:

The structure is limited to one stem where the pattern is NVPVNPV. The P systems are described in relation to h prosody. Thus, the pattern can be given as NVʰPVNʰPV. The N initial system has the term p, the P initial system of the second syllable has the term ṭ and the N final system of the second syllable and the P initial system of the third syllable have the term k. There is a contrast of systems, N-P-N-P in the pattern and the contrast of terms is p-ṭ-k.

e.g. $N_pV^hP_tVN^hP_kV$ midanguve- "spend time"

The contrast of V systems is ɪ-ɑ-ɪ and of syllable prosodies is y-w. Length prosody is short.

e.g. $Cɪ^yC\alpha^wCCɪ^w$ midanguve- "spend time"

The VCVCCV structure:

This structure has three patterns, VPVPPV, VPVNPV and VLVPPV.

The VPVPPV pattern:

The P initial system of the second syllable is described in relation to h prosody and the P systems of the other syllables are described in relation to h prosody. Thus, the pattern can be given as VʰPVʰPPV. The P initial system of the second syllable has the term ṭ and the P final system of the second syllable and the P initial system of the third syllable have the term k. There is no contrast of systems in the pattern but there is a contrast of terms: ṭ-k.

e.g. $VP_tV^hPP_kV$ adukkukar- "pile"

The contrast of V systems is ɑ-ɪ. The syllables are w prosodic and length prosody is short.

e.g. $\alpha^wCɪ^wCC$ adukkukər- "pile"

The VPVNPV pattern:

The P systems are described in relation to h prosody. Thus, the pattern can be given as VʰPVNʰPV. The P

initial system of the second syllable has the term ṭ and the N final system of the second syllable and the P initial system of the third syllable have the term k. There is a contrast of systems, P-N-P in the pattern and contrast of terms is ṭ-k.

e.g. VʰPṭVNʰPₖV adaṇguve- "contain"

The contrast of V systems is α-ι. The syllables are w prosodic and length prosody is short.

e.g. αʷCαʷCCιʷ adaṇguve- "contain"

The VLVPPV pattern:

The P systems are described in relation to h prosody. Thus, the pattern can be given as VLVPPV. The L system has two terms t and ṭ and the P final system of the second syllable and the P initial system of the third syllable have two terms k and č̆. There is a contrast of systems, L-P in the pattern and the contrast of terms is as follows: t-k and ṭ-č̆.

e.g. VLₜVʰPPₖV ulukkuve- "sprain"

VLₜVʰPPč̆V urač̆č̆ikər- "rub"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ι-ι	w-w
ι-α	w-y

Length prosody is short.

e.g. ιʷCιʷCCιʷ ulukkuve- "sprain"

ιʷCαʷCCιʷ urač̆č̆ikər- "rub"

4.4.1.3 According to the analysis given above, the phonological structures of Tamil stems differ in several ways from those native stems discussed earlier in this chapter: i) there are no monosyllabic, quadrisyllabic and penta-syllabic Tamil stems, ii) double consonants which can be homorganic nasal+plosive or two homorganic consonants are very common in Tamil stems and iii) among double consonants , č̆č̆ and ṭṭ are possible: these do not occur in native stems discussed in the

chapter.

4.4.2. Pali and Sanskrit stems

There are many Pali and Sanskrit loans in colloquial Sinhalese. However, one Sanskrit and three Pali stems occur only in phrasal verbs. The structure of the Sanskrit stem is CVCVCCV and the structures of the Pali stems are as follows: CVCVCV and VCVCV.

The CVCVCCV structure:

The structure is limited to one stem where the patterns is LVLVLPV. The P system is described in relation to h prosdy. Thus, the pattern can be given as LVLVL^{h}PV. The L initial systems of the first and second syllables have the term p, the L final system of the second syllable has the term ṭ and the P system has the term t. There is a contrast of systems, L-P in the pattern and the contrast of terms is p-ṭ-t.
e.g. L$_{p}$VL^{p}VL$_{ṭ}$^{h}P$_{t}$V vivurtəve- "open"
The contrast of V systems is ɩ-ɛ and of syllable prosodies is y-w-ə. Length prosody is short.
e.g. Cɩ^{y}Cɩ^{w}CCɛ^{ə} vivurtəve- "open"

The CVCVCV structure:

The structure has two patterns, PVPVPV and SVNVPV.

The PVPVPV pattern:

The P systems are described in relation to h prosody. Thus, the pattern can be given as ^{h}PV^{h}PV^{h}PV. The P initial systems of the first, second and third syllables have the terms k, p and t respectively. There is no contrast of systems in the pattern but there is a contrast of terms: k-t-p.
e.g. ^{h}P$_{k}$V^{h}P$_{p}$V^{h}P$_{t}$V kupitəve- "get angry"
The contrast of V systems is ɩ-ɛ and of syllable prosodies is w-y-ə. Length prosody is short.

e.g. $C\iota^{w}C\iota^{\gamma}C\epsilon^{\partial}$ kupitəve- "get angry"

The SVNVPV pattern:

The P system is described in relation to h prosody. Thus, the pattern can be given as $SVNV^{h}PV$. All systems of the pattern have the term t . There is a contrast of systems, S-N-P in the pattern but there is no contrast of terms.

e.g. $S_{t}VN_{t}V^{h}P_{t}V$ sana:təkər- "prove"

The V system is α and the syllables are w prosodic. Length prosody of the first syllable is short and that of the second syllable is long.

e.g. $C\alpha^{w}C\bar{\alpha}^{w}C\epsilon^{\partial}$ sana:təkər- "prove"

The VCVCV structure:

The structure is limited to one stem where the pattern is VLVPV. The P system is described in relation to h prosody. Thus, the pattern can be given as $VLV^{h}PV$. All systems of the pattern have the term ṭ. There is a contrast of systems, L-P in the pattern but there is no contrast of terms .

e.g. $VL_{\dot{t}}V^{h}P_{\dot{t}}V$ a:ru:ḍəve- "impute"

The contrast of V systems is α-ι-ϵ and of syllable prosodies is w-ə. Length prosody is long.

e.g. $\bar{\alpha}^{w}C\bar{\iota}^{w}C\epsilon^{\partial}$ a:ru:ḍəve- "impute"

4.4.3 English stems

There are a few English stems which occur only in phrasal verbs. They can be monosyllabic and disyllabic.

4.4.3.1 Monosyllabic stems

Monosyllabic stems have two structures: CVC and VC.

The CVC structure:

This structure has the following patterns: PVP, PVS, PVL and LVS.

The PVP pattern:

The pattern is limited to one stem where the P initial and final systems are described in relation to h and h̲ prosodies respectively. Thus, the pattern can be given as ʰPVh̲P. The P systems have the term č. There is no contrast of systems or terms in the pattern.

e.g. ʰPčVh̲Pč č̲a:ǰkər- "charge"

The V system is α and the stem is w prosodic. Length prosody is long.

e.g. Cᾱʷ C č̲a:ǰkər- "charge"

The PVS pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as ʰPVS. The P initial system has the term p and the S final system has the term t. There is a contrast of systems, P-S in the pattern and the contrast of terms is p-t.

e.g. $^{h}P_{p}VS_{t}$ p̲a:s̲ve- "pass"

The V system is α and the stem is w prosodic. Length prosody is long.

e.g. Cᾱʷ C p̲a:s̲ve- "pass"

The PVL pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as ʰPVL. The P initial system has the term p and the L final system has the term t. There is a contrast of systems, P-L in the pattern and the contrast of terms is p-t.

e.g. $^{h}P_{p}VL_{t}$ p̲e:l̲ve- "fail"

The V system is ϵ and the stem is y prosodic. Length prosody is long.

e.g. Cε̄ʸC p̲e:l̲ve- "fail"

The LVS pattern:

The pattern is limited to one stem where the L system has the term t and the S system has the term t.

e.g. $L_{t}VS_{t}$ ro:skər- "roast"

The V system is ∈ and the stem is w prosodic. Length prosody is long.

e.g. $C\bar{\epsilon}^{w}C$ ro:skər- "roast"

The VC structure:

This structure has two patterns, VN and VS.

The VN pattern:

The pattern is limited to one stem where the N system has the term t.

e.g. VN_{t} o:nve- "be on"

The V system is ∈ and the stem is w prosodic. Length prosody is long.

e.g. $\bar{\epsilon}^{w}C$ o:nve- "be on"

The VS pattern:

The pattern is limited to one stem where the S system has the term p.

e.g. VS_{p} o:ɸve- "be off"

The V system is ∈ and the stem is w prosodic. Length prosody is long.

e.g. $\bar{\epsilon}^{w}C$ o:ɸve- "be off"

4.4.3.2 Disyllabic stems

There is only one disyllabic stem of which the structure is CVCVC. The pattern is LVLVS. The L initial systems of the first and second syllables have the terms t and p respectively and the S final system of the second syllable has the term t. There is a contrast of systems, L-S in the pattern and the contrast of terms is t-p-t.

e.g. $L_tVL_pVS_t$ riyə:skər- "reverse"

The contrast of V systems is ɪ-ɛ and of syllable prosodies is y-ə. Length prosody of the first syllable is short and that of the second syllable is long.

e.g. $C\iota_yC\bar{\varepsilon}^{\partial}C$ riyə:skər- "reverse"

4.4.3.4 According to the analysis of Sanskrit, Pali and English double consonants like [rt] are possible in loans, which do not occur in native stems. As far as English stems are concerned $\bar{\varepsilon}^{\partial}$ type syllables are possible which do not occur in the native stems at all. All structures of loan stems along with the number of patterns are given in Table 6.

	Structures	English	Pali	Sans.	Tamil
Monosyll. stems.	CVC	4	-	-	-
	VC	2	-	-	-
Disyll. stems.	CVCV	-	-	-	4
	CVCVC	1	-	-	1
	CVCCV	-	-	-	7
	CVCCVC	-	-	-	1
Trisyll. stems.	CVCVCV	-	1	1	-
	CVCVCCV	-	-	-	1
	VCVCV	-	1	-	-
	VCVCCV	-	-	-	1

Table 6. Loan stem structures

4.5 Onomatopoeic stems

In Sinhalese, phrasal verbs with onomatopoeic stems are usually used for direct imitation of various sounds. The

onomatopoeic stems can be classed as either animate or inanimate. Phrasal verbs with animate stems signal sounds that are produced by animals or human beings by mouth and they are calling or crying sounds. Inanimate sounds come from human or animal actions or inanimate functions. Animate stems occur in phrasal verbs where the simple verb stem is either ga:- or kij- and inanimate stems occur in phrasal verbs where the simple verb stem is ga:-. As the majority of the onomatopoeic stems are inanimate, they will be taken first.

4.5.1 Inanimate onomatopoeic stems

Inanimate onomatopoeic stems can be divided into six groups depending on the length of the noise. Each group can further be divided depending on the degree of the noise. For instance, stems such as

dado:riiangga:- "the sound of a heavy fall"
gidi:riiangga:- "the sound of thunder"
and dadi:riiangga:- "the sound of a heavy fall"

signal huge noises which last for a longer period than

tigga:- "the Tick of a pendulum" clock"
tugga:- "the cracking sound"
tahga:- "the fall on to wet ground"
and danga:- "the metallic banging noise"

which last for a short period and signal simple non-reverbating sounds. The groups are given below with the degrees of overall length and noise marked from 1 to 6, 1 being the shortest and least noisy.

Group 1 Length(L): 1 Noise (N): 1
tigga:- "the Tick of a pendulum clock"
dahga:- "the sound of a fall onto wet ground
Group 2 L: 2 N: 3
do:nga:- "the noise of a gun shot"

ḍiːŋgaː- "the noise of a gun shot"
Group 3 L: 3 N: 2
čiriːsgaː- "the squelching sound"
paṭasgaː- "the noise of a small explosion or crack"
Group 4 L: 4 N: 3
daḍoːrijaŋgaː- "the sound of a heavy fall"
paṭoːrijaŋgaː- "the sound of a huge explosion"
Group 5 L: 5 N: 2
barəbaraːsgaː- "the sound of tearing cloth"
čarəčaraːsgaː- "the sound of tearing paper"
Group 6 L: 6 N: 2
i)
barəbaraəgaː- "the sound which arises when a tree becomes uprooted"
paṭəpaṭəgaː- "the sound of continuous explosions"
ii)) N: 1
čuːgaː- "the sound of some machines"
suːgaː- "the sound of curries cooking"
hoːgaː- "the sound of heavy rain"

Even within a given group, stems with retroflex consonants signal noisier sounds than those with other consonants. For example, paṭoːrijaŋgaː- is noisier than daboːrijaŋgaː-.

4.5.1.1 Inanimate onomatopoeic stems may be monosyllabic, disyllabic or quadrisyllabic.

4.5.1.2 Monosyllabic stems

Monosyllabic stems have two structures, CV and CVC.

The CV structure:

This structure has two patterns: PV and SV.

The PV pattern:

The pattern is limited to one stem where the P system is described in relation to h prosody. Thus, the pattern can be given as ^{h}PV. The P system has the term č.

e.g. ^{h}P$_{č}$V ču:ga:- "the sound of some machines"

The V system is ɩ and the stem is w prosodic. Length prosody is long.

e.g. C$\bar{ɩ}^{w}$ ču:ga:- "the sound of some machines"

The SV pattern:

The pattern is limited to one stem where the S system has three terms t, č and ʔ.

e.g. S$_{t}$V su:ga:- "the sound of curries cooking"
S$_{č}$V ʃo:ga:- "the sound of gales"
S$_{ʔ}$V ho:ga:- "the sound of heavy rains"

The V systems may be ɩ or ɛ and they function in w prosodic stems. Length prosody is long.

e.g. C$\bar{ɩ}^{w}$ su:ga:- "a sound of curries cooking"
C$\bar{ɛ}^{w}$ ho:ga:- "a sound of heavy rains"

The CVC structure:

This structure has three patterns, PVP, PVS and PVS.

The PVP pattern:

The P systems are described in relation to h and h̲ prosodies. Thus, the pattern can be given as ^{h}/$_{h̲}$PV^{h}/$_{h̲}$P. The P initial system has three terms, p, ṭ and č and the P final system has two terms, p and k. There is no contrast of systems in the pattern but there is a contrast of terms as follows: ṭ-k and č-k.

e.g. ^{h}P$_{p}$V^{h}P$_{p}$ pi:pga:- "the sound of a vehicle horn"
^{h}P$_{ṭ}$V$_{h̲}$P$_{k}$ ṭigga:- "the sound of a pendulum clock"
$_{h̲}$P$_{ṭ}$V$_{h̲}$P$_{k}$ ḍagga:- "the banging noise"
^{h}P$_{č}$V$_{h̲}$P$_{k}$ čagga:- "a chopping noise"

The V system may be ɩ, ɛ or ɑ. ɩ functions in y and w prosodic stems and ɛ and ɑ function in w prosodic stems. Length prosody is long when V is ɩ where the syllable is y prosodic, otherwise it is short.

e.g.	CɩʸC	ṯigga:-	"the Tick of a pendulam clock"
	CɩːʸC	pi:pga:-	"the sound of a vehicle horn"
	CɩʷC	ṯugga:-	"the noise of a small crack"
	CɛʷC	ḍogga:-	"a banging noise"
	CɑʷC	ṯagga:-	"the sound of a tap"

The PVN pattern:

The P system is described in relation to h and ẖ prosodies. Thus, the pattern can be given as ʰ/ẖPVN. The P system has three terms, t, ṯ and k and the N system has one term k. There is a contrast of systems, P-N in the pattern and the contrast of terms is t-k and ṯ-k.

e.g.	ẖPₜVNₖ	ḍaŋga:-	"the sound of a drum"
	ʰPₜVNₖ	ṯaŋga:-	"the metallic banging noise"
	ẖPₜVNₖ	ḍoŋga:-	"the sound of a drum"
	ʰPₖVNₖ	ki:ŋga:-	"the noise which is sometimes produced in the ear"

The V system may be ɩ, ɛ or ɑ. ɩ functions in y and w prosodic stems, ɛ and ɑ function in w prosodic stems. Length prosody may be short or long.

CɩːʸC	ki:ŋga:-	"the noise which is sometimes produced in the ear"
CɩʷC	ḍuŋga:-	"the sound of a drum"
CɛʷC	ḍoŋga:-	"the sound of a drum"
CɛːʷC	do:ŋga:-	"the noise of an explosion"
CɑʷC	ṯaŋga:-	"the mettalic banging noise"
CɑːʷC	ṯa:ŋga:-	"a noise of a large bell"

The PVS pattern:

The P system is described in relation to h and ẖ prosodies. Thus, the pattern can be given as ʰ/ẖPVS. The P

system has three terms, p, t, and č and the S system has two terms t and ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows: p-ʔ, t-ʔ, č-t, and c-t.

e.g. $^{h}P_{p}VS_{ʔ}$ puhga:- "the sound of a blow pipe"

$^{h}P_{p}VS_{ʔ}$ bahga:- "the sound which arises when lids of bottles are removed suddenly"

$^{h}P_{t}VS_{ʔ}$ tahga:- "a small fall onto wet ground"

$^{h}P_{t}VS_{ʔ}$ dahga:- "a big fall onto wet ground"

$^{h}P_{č}VS_{t}$ čuːsga:- "the sound of an unsuccessful fire cracker"

The V system may be ι, ϵ or α. ι functions in y and w prosodic stems and ϵ and α function in w prosodic stems. Length prosody is long when V is ι where the stem is w prosodic, otherwise it is short.

e.g. $C\iota^{y}C$ dihga:- "a beating sound"

$C\iota^{w}C$ puhga:- "the sound of a the blow pipe"

$C\bar{\iota}^{w}C$ čuːsga:- "the sound of an unsuccessful fire cracker"

$C\epsilon^{w}C$ dohga:- "the sound of a fall onto ground"

$C\alpha^{w}C$ dahga:- "a sound of a fall onto wet ground"

4.5.1.3 Disyllabic stems

Disyllabic stems have two structures, CVCV and CVCVC.

The CVCV structure:

This structure has the following patterns:

PVPV	PVSV	PVLV
-	-	SVLV
-	-	NVLV

The PVPV pattern:

The P systems are described in relation to h and

h prosodies. Thus, the pattern can be given as ʰ/ʰPVʰ/ʰPV. The P initial system has four terms p, t, ṭ and k and the P final system has two terms, ṭ and k. There is no contrast of C systems in the pattern but there is a contrast of terms: p-t, t-ṭ, ṭ-k and k-ṭ.

e.g.	ʰPₚVʰPṭV	paṭaga:-	"the continuous crackling sound of the forest fire"
	ʰPtVʰPṭV	didiga:-	"a beating sound"
	ʰPṭVʰPₖV	ṭakaga:-	"the sound of the bell called Take"
	ʰPṭVʰPₖV	ḍakaga:-	"the sound of a bullock cart"
	ʰPₖVʰPtV	gidiga:-	"a running sound"
	ʰPₖVʰPṭV	kaṭaga:-	"a sound of shivering"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɩ	y-y
ɑ-ɛ	w-w
	w-ə

Length prosody is short.

e.g.	CɩʸCɩʸ	gidiga:-	"a running sound"
	CɩʷCɩʷ	guduga:-	"a swallowing sound of gruel"
	CɑʷCɛᵊ	paṭaga:-	"the continuous crackling sound of the forest fire"

The PVSV pattern:

The P system is described in relation to h and ʰ prosodies. Thus, the pattern can be given as ʰ/ʰPVSV. The P system has two terms, p and k and the S system has one term, t. There is a contrast of systems, P-S in the pattern and the contrast of terms is p-t and k-t.

e.g.	ʰPₚVStV	busuga:-	"the sound of a big fan"
	ʰPₖVStV	kasaga:-	"the sound of a circling weal"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɪ-ɪ	y-y
ɑ-ɛ	w-w
	w-ə

Length prosody is short.

e.g. CɪʸCɪʸ kisiga:- "the sound of a circling wheel"
CɪʷCɪʷ busuga:- "the sound of a big fan"
CɑʷCɛᵊ basəga:- "the sound of pouring grain into bags"

The PVLV pattern:

The P system is described in relation to h and ẖ prosodies. Thus, the pattern can be given as ʰ/ẖPVLV. The P system has three terms, p, č and k and the L system has one term, t. There is a contrast of systems, P-L in the pattern and the contrast of terms is p-ṭ, č-ṭ and k-ṭ.

e.g. ẖPₚVLₜV barəga:- "the sound of a breaking tree branch"
ʰPᶜVLₜV čarəga:- "an eating sound of animals"
ẖPᶜVLₜV ǰarəga:- "the sound of a tree being uprooted"
ʰPₖVLₜV kiriga:- "the sound of scraping of hard articles"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɪ-ɪ	y-y
ɑ-ɛ	w-w
ɛ-ɛ	w-ə

Length prosody is short.

e.g. CɪʸCɪʸ kiriga:- "the scraping sound of hard articles"
CɪʷCɪʷ čuruga- "the splashing sound of small fountains"
CɛʷCɛᵊ čorəga:- "the pouring sound of water etc."
CɑʷCɛᵊ barəga:- "the sound of a breaking tree branch"

The SVLV pattern:

The S system has one term, t and the L system has two terms, t and ṭ. There is a contrast of systems, S-L in the pattern and the contrast of terms is t-ṭ.

e.g. $S_tVL_{\dot{t}}V$ sarəga:- "a rustling sound"
S_tVL_tV siliga:- "the sound of a small stream"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ʊ	y-y
ɑ-ɛ	w-w
	w-ə

Length prosody is short.

e.g. $C\alpha^wC\epsilon^ə$ sarəga:- "a rustling sound"
$C\iota^yC\iota^y$ siliga:- "the sound of a small stream"
$C\iota^wC\iota^w$ suruga:- "the swallowing sound of gruel"

The NVLV pattern:

The pattern is limited to one stem where the N system has the term č and the L system has the term ṭ. Thus, there is a contrast of systems, N-L in the pattern and the contrast of terms is č-t.

e.g. $N\check{c}VL_{\dot{t}}V$ paṛəga:- "the sound of animals crunching raw potatoes"

The contrast of V systems is ɑ-ɛ and of syllables prosodies is w-ə. Length prosody is short.

e.g. $C\alpha^wC\epsilon^ə$ paṛəga:- "the sound of animals crunching raw potatoes"

In the PVPV pattern of the CVCV structure, as far as h and h prosodies are concerned, both syllables are either h prosodic or h̲ prosodic. Patterns where the first syllable is h prosodic

and the second syllable is h̲ prosodic do not occur. Thus, the patterns like ʰPVʰPV

and ʰ̲PVʰ̲PV are possible.

But patterns like ʰPVʰ̲PV

or h̲PVʰPV are not found.

In the CVCV structure The L system does not occur at the C initial place at all. It occurs only in the second syllable. Thus, patterns like PVLV

NVLV

and SVLV are possible.

But the patterms like LVPV

LVNV

and LVSV are not found.

As far as the V systems and syllable prosodies are concerned the following phonological structures are possible:

V systems	prosodies
ɩ-ɩ	y-y, w-w
ɛ-ɛ	w-ə
ɑ-ɛ	w-ə

The CVCVC structure:

This structure has the following patterns:

PVPVN	PVLVS	SVLVN
PVPVS	SVLVS	-

The PVPVN pattern:

The P systems are described in relation to h and h̲ prosodies. Thus, the pattern can be given as ʰ/ʰ̲PVʰ/ʰ̲PVN. The P initial system has three terms p, t and k, the P initial system of the second syllable has two terms, t and t and the N system has one term, k. There is a contrast of systems, P-N in the pattern and the contrast of terms is as follows: p-t̤-k, t-t̤-k, t-p-k and k-t̤-k.

e.g. ʰP$_{p}$VʰP$_{t̤}$VN$_{k}$ pat̤o:ŋ̤ga:- "the sound of an explosion"

$\underline{h}P_tV\underline{h}P_pVN_k$ dabo:ŋga:- "the heavy fall on to water"

$\underline{h}P_tV\underline{h}P_pVN_k$ dado:ŋga:- "a sound of an explosion"

$\underline{h}P_kV\underline{h}P_{\dot{t}}VN_k$ gidi:ŋga:- "a sound of a huge explosion"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɪ-ɪ	y-y
ɑ-ɛ	w-w

Length prosody of the first syllable is short and that of the second syllable is long.

e.g. $C\text{ɪ}^{y}C\bar{\text{ɪ}}^{y}C$ gidi:ŋga:- "a sound of a huge explosion"

$C\text{ɑ}^{w}C\bar{\text{ɛ}}^{w}C$ dabo:ŋga:- "a sound of an explosion"

The PVPVS pattern:

The P systems are described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $h/\underline{h}PV^{h}/\underline{h}PVS$. The P initial system has four terms, p, t , $\dot{t}$ and k, the P initial system of the second syllable has three terms, p, $\dot{t}$ and k and the S system has two terms t and ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows:p-$\dot{t}$-t, t-p-ʔ, $\dot{t}$-k-t, t-$\dot{t}$-t and k-$\dot{t}$-t.

e.g. $^{h}P_pV^{h}P_{\dot{t}}VS_t$ patasga:- "the sound of a small explosion"

$\underline{h}P_tV\underline{h}P_pVS_ʔ$ dabahga:- a fall on to the wet ground"

$^{h}P_{\dot{t}}V^{h}P_kVS_t$ ṭakasga:- the sound of the snap of a hard article"

$\underline{h}P_tV\underline{h}P_{\dot{t}}VS_t$ didisga:- "the rustling of footsteps"

$^{h}P_kV^{h}P_{\dot{t}}VS_t$ kaṭasga:- "the sound of breaking articles"

$\underline{h}P_kV\underline{h}P_{\dot{t}}VS_t$ gudusga:- "a sound of swallowing"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɪ-ɪ	y-y
ɑ-ɑ	w-w

length prosody is short..

e.g. CɩʸCɩʸC dḍisga:- "rutling sound of foot steps"
CɩʷCɩʷC gudusga:- "a sound of swallowing"
CɑʷCɑʷC ṭakasga:- "a sound of the snap of a hard article"

The PVLVS pattern:

The P system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as ʰ/h̲PVLVS. The P system has one term č and the L system and the S system have the terms ṭ and t respectively. There is a contrast of systems, P-L-S in the pattern and the contrast of terms is č-ṭ-t.

e.g. ʰPčVLṭVSt čirisga:- "the squelching sound of water"
h̲PčVLṭVSt ǰurusga:- "the squelching sound of mud"

The contrast of V systems and syllable prosodies is as follows:

V system	prosodies
ɩ-ɩ	y-y
ɑ-ɑ	w-w

Length prosody is short.

e.g. CɩʸCɩʸC čirisga:- "the squelching sound of water"
CɩʷCɩʷC ǰurusga:- "the squelching sound of mud"
CɑʷCɑʷC čarasga:- "the tearing sound of paper etc."

The SVLVS pattern:

The pattern is limited to one stem where the S initial system has the term t and the L system and the S final system of the second syllable have the terms ṭ and t respectively. There is contrast of systems, S-L-S in the pattern and the contrast of terms is t-ṭ-t.

e.g. StVLṭVSt surusga:- "the sound of a dying fire"

The V system is ɩ and the syllables are w prosodic. Length prosody is short.

e.g. CɩʷCɩʷC surusga:- "the sound of dying fire"

The SVLVN pattern:

The S system and the L system have the term t and the N system has the term k. There is a contrast of systems, S-L-N in the pattern and the contrast of terms is t-k.

e.g. $S_tVL_tVN_k$ silinga:- "the sound of a waving chain"

The contrast of the V systems and syllable prosodies is as follows:

V systems	prosodies
ɩ-ɩ	y-y
ɑ-ɑ	w-w

Length prosody is short in the first syllable but either short or long in the second syllable.

e.g. $C\iota_yC\iota_yC$ silinga:- "the sound of a chain clattering"

$C\alpha^wC\bar{\alpha}^wC$ sala:nga:- "the falling sound of metallic plates, etc."

According to the analysis given above the P system does not occur at the C final place; there only the S system with t and ʔ terms and the N system with k term occur. In the patterns where the initial systems of the first and second syllables are P, both syllables are either h prosodic or h̲ prosodic. In other words both syllables harmonize in terms of h and h̲ prosodies.

As far as V systems and syllable prosodies are concerned the following syntagmatic relations are possible.

V systems	prosodies
ɩ-ɩ	y-y
ɑ-ɑ	w-w

4.5.1.4 Quadrisyllabic stems

Quadrisyllabic stems have two types of structure, non-reduplicated and reduplicated.

4.5.1.4.1 Non-reduplicated structure

This has one pattern, PVPVLVLVN where the P systems

are described in relation to h and h̲ prosodies. Thus, the pattern can be given as $^{h}/_{\underline{h}}$PV^{h}/$_{\underline{h}}$PVLVLVN. The P initial system has three terms, p, t and k and the P initial system of the second syllable has two terms, p and ṭ. The L initial systems of the third and fourth syllables and the N system have the terms, ṭ, č and k respectively. Thus, there is a contrast of systems, P-L-N in the pattern and the contrast of terms is as follows:p-ṭ-ṭ-č-k, t-p-ṭ-c-k,t-ṭ-č-k and k-ṭ-ṭ-c-k. It may be noted that there is no paradigmatic contrast of systems and terms of the third and fourth syllables.

e.g. $^{h}P_{p}V^{h}P_{t}VL_{t}VL_{č}VN_{k}$ pa̲ṭo:rijaŋga:- "the noise of a huge explosion"

$_{\underline{h}}P_{t}V_{\underline{h}}P_{p}VL_{t}VL_{č}VN_{k}$ da̲bo:rijaŋga:- "the sound of a heavy fall onto the water"

$_{\underline{h}}P_{t}V_{\underline{h}}P_{t}VL_{t}VL_{č}VN_{k}$ da̲ḍi:rijaŋga:- "the noise of the thunder"

$_{\underline{h}}P_{k}V_{\underline{h}}P_{t}VL_{t}VL_{č}VN_{k}$ ga̲ḍi:rijaŋga:- "the noise of the thunder"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɛ-ɩ-ɑ	w-w-y-w
ɑ-ɩ-ɩ-ɑ	w-y-y-w
ɩ-ɩ-ɩ-ɑ	y-y-y-w

Length prosody of the second syllable is long and that of the others is short.

e.g. $C_{\alpha^{w}}C\tilde{\varepsilon}^{w}C\,\iota^{y}C_{\alpha^{w}}C$ pa̲ṭo:rijaŋga:- "the sound of a huge explosion"

$C_{\alpha^{w}}C\bar{\iota}^{y}C\iota^{y}C_{\alpha^{w}}C$ da̲ḍi:rijaŋga:- "the sound of the thunder"

$C\iota^{y}C\,\bar{\iota}^{y}C\iota^{y}C_{\alpha^{w}}C$ ga̲ḍi:rijaŋga:- "the sound of the thunder"

4.5.1.4.2 Reduplicated structure

These are of two types: CVCVCVCV and CVCVCVCVC.

The CVCVCVCV structure:

This can be considered as the reduplicated structure of the CVCV structure discussed earlier in this chapter. Therefore it is not necessary to analyse it here.

The CVCVCVCVC structure:

This can also be considered as the reduplicated structure of the CVCV structure plus a C. The C final system of this structure is always S with the term t.

e.g. PVPVPVPVS$_t$ gudugudusga:- "the sound of swallowing gruel etc."

PVLVPVLVS$_t$ čiričirisga:- "the squelching sound of water"

SVLVSVLVS$_t$ surusurusga:- "the sound of dying fire"

It was said earlier that in some patterns of the CVCV structure the V system of the second syllable can be ϵ where the syllable is ə prosodic. In the CVCVCVCVC structure that V system is α where the syllable is w prosodic.

e.g. Cα^{w}Cϵ^{ə}Cα^{w}Cα^{w}C patapatasga:- "a cracking sound"

Cα^{w}Cϵ^{ə}Cα^{w}Cα^{w}C satəsatasga: "a pouring sound of drops"

4.5.2 Animate onomatopoeic stems

Animate onomatopoeic stems may be monosyllabic, disyllabic, trisyllabic, quadrisyllabic or pentasyllabic.

4.5.2.1 Monosyllabic stems

Monosyllabic stems have the following structures: CCC, CV, CVC, VC, and V.

The CCC structure:

This structure has two patterns, PLL and SNN.

The PLL pattern:

This pattern is limited to one stem where the P

system is described in relation to h prosody. Thus, the pattern can be given as ʰPLL. The P system has the term k and the L systems have the term t̪. There is a contrast of systems, P-L in the pattern and the contrast of terms is as follows: k-t̪.

e.g. $^{h}P_{k}LL_{\underline{t}}$ grrga:- "the leopard's growl"

The SNN pattern:

The pattern is limited to one stem where the S system has the term ʔ and the N systems have the term p. There is a contrast of systems, S-N in the pattern and the contrast of terms is as follows: ʔ-p.

e.g. $S_{ʔ}NN_{p}$ hmmga:- "the owl's hoot"

The CV structure:

This structure is limited to one stem where the pattern is SV. The S system has the term ʔ.

e.g. $S_{ʔ}V$ hu:kijə- "a calling sound"

The V system is ɪ and the stem is w prosodic. Length prosody is long.

e.g. $C\bar{ɪ}^{w}$ hu:kijə- "a calling sound"

The CVC structure:

The CVC structure has the following patterns: PVP, PVN, PVS and NVL.

The PVP pattern:

The P systems are described in relation to h prosody. Thus, the pattern can be given as ʰPVʰP. The P initial system has two terms, č and k and the P final system has two terms, p and k. There is no contrast of systems in the pattern but there is a contrast of terms: č-p or no contrast.

e.g. $^{h}P_{\check{c}}V^{h}P_{p}$ čipkijə- "the sound which is made to drive away dogs"

$^{h}P_{k}V^{h}P_{k}$ ka:kkijə- "the caw of crows"

The V system may be ɩ or ɑ. ɩ functions in y prosodic stems where length prosody is short and ɑ functions in w prosodic stems where length prosody is long.

e.g. $C\iota^{y}C$ čipkijə- "the sound which is made to drive away dogs"

$C\bar{\alpha}^{w}C$ ka:kkijə- "the caw of crows"

The PVN pattern:

The P system is described in relation to h prosody. Thus, the pattern can be given as ^{h}PVN. The P system has the term ṭ and the N system has the term k. There is a contrast of systems, P-N in the pattern and the contrast of terms is as follows: ṭ-k.

e.g. $^{h}P_{t}VN_{k}$ ṭiŋga:- "the squirrel's chatter"

$^{h}P_{t}VN_{k}$ ṭaŋga:- "the elk's bark"

The V system may be ɩ or ɑ and they function in y and w prosodic stems respectively. Length prosody is short.

e.g. $C\iota^{y}C$ ṭiŋga:- "the squirrel's chatter"

$C\alpha^{w}C$ ṭaŋga:- "the elk's bark"

The PVS pattern:

The P system is described in relation to h and $\underline{h}$ prosodies. Thus, the pattern can be given as $^{h/\underline{h}}$PVS. The P system has three terms, p, č and k and the S system has two terms, t and ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is as follows: p-ʔ, č-ʔ, k-ʔ and č-t.

e.g. $^{\underline{h}}P_{p}VS$ buhga:- "the dog's bark"

$^{h}P_{\check{c}}VS$ čehga:- "a sound which people make when they are disappointed"

$^{h}P_{k}VS$ kahga:- "the sound of coughing"

$^{h}P_{\check{c}}VS$ či:sga:- "mouse's squeak"

The V system may be ɩ, ∈ or ɑ. ɩ functions in y and w prosodic stems, ∈ functions in y prosodic stems and ɑ functions in w

prosodic stems. Length prosody may be short or long when V is ɪ, otherwise it is short.

e.g.	$C\bar{\imath}^{\vee}C$	čiːsga:-	"mouse's squeak"
	$C\imath^{w}C$	buhga:-	"a barking sound"
	$C\epsilon^{\vee}C$	čehga:-	"a sound which people make when they are disappointed"
	$C\alpha^{w}C$	kahga:-	"the sound of coughing"

The NVL pattern:

The pattern is limited to one stem where the N system has the term č and the L system has the term p. There is a contrast of systems, N-L in the pattern and the contrast of terms is č-p.

e.g. $N_{\check{c}}VL_{p}$ ŋaːvkijə- "cat's meow"

The V system is α and the stem is w prosodic. Length prosody is long.

e.g. $C\bar{\alpha}^{w}C$ ŋaːvkij - "cat's meow"

The SVS pattern:

The S initial system has two terms, č and ʔ and the S final system has one term ʔ . There is no contrast of systems in the pattern but there is a contrast of terms: $_{\check{c}}$-$_{ʔ}$.

e.g.	$S_{\check{c}}VS_{ʔ}$	ʃahga:-	"a sound which is made when one is surprised or disappointed"
	$S_{ʔ}VS_{ʔ}$	hahga:-	"a laughing sound"

The V system is α and the stems are w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C$ hahga:- "a laughing sound"

The LVN pattern:

The pattern is limited to one stem where the L system has the term ʈ and the N system has the term k. There is a contrast of systems, L-N in the pattern and the contrast of terms is ʈ-k.

e.g. $L_{ʈ}VN_{k}$ ruːŋga:- "the buzzing of bees"

The V system is ι and the stem is w prosodic. Length prosody is long.

e.g. $C\bar{\iota}^{w}C$ ru:ngga:- "the buzzing of bees"

The VC structure:

This structure has only one pattern, VS where the S system has one term, ʔ.

e.g. $VS_{ʔ}$ uhga:- "the sound which is made when one is in pain"

The V system may be ι, ∈ or α. ι and ∈ function in y and w prosodic stems and α functions in w prosodic stems. Length prosody is long when V is ι or α and the stem is w prosodic, otherwise it is short.

e.g. $\iota^{y}C$ ihga:- "the sound which is made when one sees or hears an ugly thing"

$\iota^{w}C$ uhga:- "the sound which is made when one is in pain"

$\bar{\iota}^{w}C$ u:hga:- "the sound which is made when one is in pain"

$\in^{y}C$ ehga:- "a sound which is made when one sees or hears an ugly thing"

$\in^{w}C$ ohga:- "a sound which is made when one is surprised"

$\alpha^{w}C$ ahga:- "a sound which is made when one is disappointed"

$\bar{\alpha}^{w}C$ a:hga:- "a sound which is made when one is disappointed"

The V structure:

The structure is limited to two stems. In the first example, V is ι and the stem begins with w prosody and ends with y prosody. In the second example V starts with α grade and ends with ι grade and the stem begins with w prosody

and ends with y prosody. Length prosody is always long.

e.g. $^{w}\bar{\imath}^{y}$ u:ikijə- "the sound which is made when one is in pain"

$^{w}\bar{a}\imath^{y}$ a:ikijə- "a sound which is made when one is in pain"

4.5.2.2 Disyllabic stems

Disyllabic stems have three structures, CVCV, CVCVC and VCCV.

The CVCV structure:

This structure has one pattern, PVSV where the P system is described in relation to h and h̲ prosodies. Thus, the pattern can be given as $^{h}/_{\underline{h}}$PVSV. The P system has two terms, p and k and the S system has the term, ʔ. There is a contrast of systems, P-S in the pattern and the contrast of terms is p-ʔ and k-ʔ.

e.g. $^{\underline{h}}P_{p}VS_{ʔ}V$ bæhæ:kijə- "the bleating of a goat"

$^{h}P_{k}VS_{ʔ}V$ koho:kijə- "the plaintive cuckoo's cry"

The contrast of V systems and syllable prosodies is as follows:

V systems	prosodies
ɑ-ɑ	y- y-
ɛ-ɛ	w- w-

Length prosody of the second syllable is long and that of the first syllable is short.

e.g. $C\alpha^{y}C\bar{\alpha}^{y}$ bæhæ:kijə- "the bleating of a goat"

$C\epsilon^{w}C\bar{\epsilon}^{w}$ koho:kijə- "the plaintive cuckoo's cry"

The CVCVC structure:

This structure is limited to one stem where the pattern is PVLVS. The P system is described in relation to h prosody. Thus, the patterm can be given as ^{h}PVSVL. The P and L systems have k and ṭ terms respectively and the S system has the term t. There is a contrast of systems, P-L-S in the pattern and the contrast of terms is k-ṭ-t.

e.g. $^{h}P_{k}VL_{\dot{t}}VS_{t}$ kiri:sga:- "the parrot's screech"
The V systems are ɪ and the syllables are y prosodic. Length prosody of the first and second syllables is short and long respectively.
e.g. $C\iota^{y}C\bar{\iota}^{y}C$ kiri:sga:- "the parrot's screech"

The VCCV structure:

The structure is limited to one stem where the pattern is VNPV. The P system is described in relation to h prosody. Thus, the pattern can be given as VN^{h}PV. Both systems have the term p. There is a contrast of systems, N-P in the pattern but there is no contrast of terms.
e.g. VN$^{h}P_{p}$V umbæ:kij- "the cow's sound"
The contrast of V systems is ɪ -ɑ and of syllable prosodies is w-y. Length prosody of the first syllable is short and that of the second syllable is long.
e.g. $^{w}CC\bar{a}^{w}$ umbæ:kij- "the cow's sound"

4.5.2.3 Trisyllabic stems

There is only one trisyllabic stem of which the structure is CVCVCV. The pattern is PVPVLV where the P systems are described in relation to h prosody. Thus, the pattern can be given as ^{h}PV^{h}PVLV. The P systems have the term k and the L system has the term $\dot{t}$. There is a contrast of systems, P-L in the pattern and the contrast of terms is k-t.
e.g. $^{h}P_{k}V^{h}P_{k}VL_{\dot{t}}V$ kekərəga:- "the hen's cackle"
The V systems are ɛ and they function in y and ə prosodic syllables respectively. Length prosody is short.
e.g. $C\epsilon^{y}C\epsilon^{ə}C\epsilon$ kekərəga:- "the hen's cackle"

4.5.2.4 Quadri-syllabic stems

Quadrisyllabic stems have three structures CVCVCVCV, CVCVCCVCVC and CVCCVCVCCV.

The CVCVCVCV structure:

The structure is limited to one stem where the pattern is PVSVPVSV. The P systems are described in relation to h prosody. Thus, the pattern can be given as ^{h}PVSV^{h}PVSV. The P systems have the term k and the S systems have the term t. There is a contrast of systems, P-S-P-S in the pattern and the contrast of terms is k-t-k-t.

e.g. $^{h}P_{k}VS_{t}V^{h}P_{k}VS_{t}V$ kasukusuga:- "a whispering sound"

The contrast of V systems is α-ι. The syllables are w prosodic and length prosody is short.

e.g. $C\alpha^{w}C\iota^{w}C\iota^{w}C\iota^{w}$ kasukusuga:- "a whispering sound"

The CVCVCCVCVC structure:

The P initial system of the third syllable is described in relation to h prosody and the other P systems are described in relation to h prosody. Thus, the pattern can be given as ^{h}PV^{h}PVN^{h}PV^{h}PVN. The P initial system of the first syllable has the term č, the P initial systems and the N final systems of the second and fourth syllables have the term k and the P initial system of the third syllable has the term p. There is a contrast of systems, P-N-P-N in the pattern and the contrast of terms is č-k-p-k.

e.g. $^{h}P_{\check{c}}V^{h}P_{k}VN^{h}P_{p}V^{h}P_{k}VN_{k}$ čakumbukunga:- "a monkey's cry"

The contrast of V systems is α-ι. The syllables are w prosodic and length prosody is short.

e.g. $C\alpha^{w}C\iota^{w}CC\iota^{w}C\iota^{w}C$ čakumbukunga:- "a monkey's cry"

The CVCCVCVCCV structure:

The structure is limited to one stem where the pattern is PVPPVPVPPV. The P systems are described in relation to h prosody. Thus, the pattern can be given as ^{h}PV^{h}PPV^{h}PV^{h}PPV. The P systems have the term k. There is no contrast of systems as well as of terms in the pattern.

e.g. $^{h}P_{k}V^{h}PP_{k}V^{h}P_{k}V^{h}PP_{k}V$ kukkuku:kku:ga:- "cock's crow"

The V systems are ι and the syllables are w prosodic. Length prosody of the first and second syllables is short and

that of the other syllables is long.
e.g. $C_{\iota w}CC_{\iota w}C_{\bar{\iota} w}CC_{\bar{\iota} w}$ kukkuku:kku:ga:- "cock's crow"

4.5.2.5 Penta-syllabic stems

Pentasyllabic stems have two structures, CVCCVCCVCVCVC and CVCCVCVCCVCV.

The CVCCVCCVCVCCV structure:

The structure is limited to one stem where the pattern is PVPPVPPVPVLVN. The P initial system of the fourth syllable is described in relation to h prosody and those of the others are described in relation to h prosody. Thus, the pattern can be given as $_{h}$PV$_{h}$PPV$_{h}$PPV^{h}PVLVN. The P initial system of the fourth syllable has the term k and those of the other syllables have the term t and the L initial and N final systems of the fifth syllable have the terms t and k respectively. There is a contrast of systems, P-L-N in the pattern the contrast of terms is t-k-t-k.
e.g. $_{h}P_{t}V_{h}PP_{t}V_{h}PP_{t}V^{h}P_{k}V_{Lt}VN_{k}$ duddududuludu:ŋga: "a particular bird's cry"
The V systems are t and the syllables are w prosodic. Length prosody of the fifth syllable is long and that of the other syllables is short.
e.g. $C_{\iota w}CC_{\iota w}CC_{\iota w}C_{\iota w}C_{\bar{\iota} w}C$ dudduddudulu:ŋga: "a particular bird's cry"

The CVCCVCVCCVCV structure:

The structure is limited to one stem where the pattern is SVPPVSVPPVSV. The P systems are described in relation to h prosody. Thus, the pattern can be given as SV^{h}PPVSV^{h}PPVSV. The P systems have the term k and the S systems have the term ʔ. There is a contrast of systems, S-P-S-P-S and the contrast of terms is ʔ-k-ʔ-k- .
e.g. $S_{ʔ}V^{h}PP_{k}VS_{ʔ}V^{h}PP_{k}VS_{ʔ}V$ hukkihukkihu:kij- "the fox's bark"

The V systems are ɩ and they function in w and y prosodic syllables. Length prosody of the fifth syllable is long and that of the other syllables is short.

e.g. CɩʷCCɩʸCɩʷCCɩʸC$\bar{ɩ}$ʷ hukkihukkihu:kij- "the fox's bark"

4.6 According to the analysis given above the phonology of onomatopoeic stems has special features: C systems which are very rare at the C initial place of simple verbs are very common in onomatopoeic stems. In disyllabic inanimate onomatopoeic stems the second syllable harmonizes with the initial syllable in terms of h and h̲ prosodies as well as y and w prosodies. Polysyllabic animate stems, being imitative of sounds, are partially reduplicated. As was shown above, there is a systematic prosodic relationship between initial and non-initial syllables of polysyllabic onomatopoeic stems. Monosyllabic and disyllabic inanimate onomatopoeic stems are usually used in reduplicated form. Syllabic consonants, which do not occur in stems of other types are possible in animate onomatopoeic stems. All structures of onomatopoeic stems along with the number of patterns they have are given in Table 7.

	Sructures	Inanimate	Animate
Monosyll. stems	CCC	-	2
	CV	2	1
	CVC	3	4
	VC	-	1
Disyll. stems	CVCV	5	1
	CVCVC	5	1
	VCCV	-	1
Trisyll. stems	CVCVCV	-	1
	CVCVCVCV	5	1

Quadrisyll. stems	CVCVCVCVC	9	-
	CVCVCCVCVC	-	1
Pentasyll. stems	CVCCVCVCCVCV	-	1
	CVCCVCCVCVCVC	-	1

Table 7. Onomatopoeic stem structures

In conclusion, the phonological analysis of stems of phrasal verbs was given in this chapter. There, three types of stems, non-free morphemes, loan stems and onomatopoeic stems which occur as the first element of the stems of phrasal verbs were discussed. It was shown there that, on the one hand the phonological analysis of the stems considered above differs from that of simple verb stems and on the other hand the phonological analysis of each type of the three types analysed in the chapter differs from that of the others in several ways.

CHAPTER 5

5.0 AFFIXES

5.1 This chapter presents a phonological analysis of affixes which can be prefixes, suffixes, or infixes. However, as the majority of the affixes are suffixes, they will be taken first.

5.2 Suffixes

5.2.1 Syllable structure of suffixes

Suffixes fall into three groups, monosyllabic, disyllabic and trisyllabic.

5.2.1.1 Monosyllabic Suffixes

C- initial and C- final

CVC	katat	" even if .... eat"

C- initial and V final

CV	purəvapu	" filled"
CCV	kanne	" that is what ..eat"

V- initial and V-final

V	unna	" stayed"
V	kæ:ve	" that is what ...ate"

V- initial and C-final

VC	a:vat	" even if ...come"
VC	kæpuvot	" if cut"

5.2.1.2 Disyllabic Suffixes

All disyllabic suffixes are V-final. However, in the initial position both C- and V- are found.

C-initial and V-final

CVCV	kapənəva	" cut"
CVCCV	kapəpalla	" (you) cut"

V-initial and V-final

V̄CV	kæpuva:ve	"let it ...cut"

5.2.1.3 Trisyllabic stems

There is only one trisyllabic suffix found in verb forms, namely,-ahamə. For example,

VCVCV	kæpuvahamə	"after cutting"
VCVCV	pænnahamə	"after jumping"

5.2.2 Structures and patterns of suffixes

5.2.2.1 Monosyllabic suffixes

Monosyllabic suffixes are of six types, CV, CVC, CVC, CCVC, V, and VC.

The CV structure:

The possible patterns of the CV structure are PV NV and LV.

The PV pattern:

The P system functions in relation to h prosody. Thus, the pattern can be given as ^{h}PV. The P system has one term, p.

e.g.	$^{h}P_{p}V$	kapəpu	"cut(invol. past participle)
	$^{h}P_{p}V$	kapəpi	"did cut"

The V system is ɪ and it functions in y and w prosodic suffixes. Length prosody is always short.

e.g. $C\iota^{y}$ kapəpi "did cut"
$C\iota^{w}$ kapəpu "cut(invol. past participle)"

The NV pattern:

The pattern is limited to one stem where the N system has the term, p.

e.g. NpV kapəmu "let us cut"

The V system is ι and it functions in w prosodic suffixes. Length prosody is always short.

e.g. $C\iota^{w}$ kapəmu "let us cut"

The LV pattern:

The L system has one term, t.

e.g. $L_{t}V$ kapəla "has/have cut"

The V system is α and the suffix is w prosodic. Length prosody is short.

e.g. $C\alpha_{w}$ kapəla "has/have cut"

The CVC structure:

The possible patterns of the CVC structure are PVP, PVN, NVN and SVN.

The PVP pattern:

The P systems are described in relation to h prosody. Thus the pattern can be given as $^{h}PV^{h}P$. The P systems have one term, t.

e.g. $^{h}P_{t}V^{h}P_{t}$ kapətot "if...cut"
$^{h}P_{t}V^{h}P_{t}$ kapətat "even if...cut"

The V system may be ϵ or α and they function in w prosodic suffixes. Length prosody is short.

e.g. $C\epsilon^{w}C$ kapətot "if...cut"
$C\epsilon^{w}C$ kapətat "even if...cut"

The PVN pattern:

The P system is described in relation h and h

prosodies. Thus the pattern can be given as $^{h}/_{\underline{h}}$PVN.
The P system has three terms, p, t and k. The N system has one term, k.

e.g. $^{h}P_{p}VN_{k}$ kapəpaŋ "do cut"
$^{\underline{h}}P_{t}VN_{t}$ kæpuvədeŋ "let(them) cut"
$^{h}P_{k}VN_{k}$ kapənəkaŋ "until ...cut"

The V system may be ∈ or α. ∈ functions in y prosodic suffixes and α functions in w prosodic. Length prosody is always short.

e.g. $C\alpha^{w}C$ kapəpaŋ "do cut"
$C\in^{y}C$ kæpuvədeŋ "let(them)cut"

The NVN pattern:

The pattern is limited one suffix where the N initial system has the term t and the N final system has the term k.

e.g. $N_{t}VN_{k}$ kæ·vanaŋ "if(you)ate"

The V system is α and the suffix is w prosodic. Length prosody is short.

e.g. $C\alpha^{y}C$ kæ:vanaŋ "if(you) ate"

The SVN pattern:

The pattern is limited to one suffix where the S system has the term ʔ and the N system has the term k.

e.g. $S_{ʔ}VN_{k}$ kapəhaŋ "do cut"

The V system is α and the suffix is w prosodic. Length prosody is short.

e.g. $C\alpha^{w}C$ kapəhaŋ "do cut"

The CCV structure:

This structure has three patterns, PPV, NPV and NNV.

The PPV pattern:

The P systems are described in relation to h

and ̲h prosodies. Thus, the pattern can be given as ʰ/̲hPPV. The P systems are always homorganic and have two terms, t and č.

e.g ̲hPPtV kapa̲d̲di "while cutting"
ʰPPčV kæpi̲čči "was cut(emphʰ)"

The V system may be ɩ or ∈ and ɩ functions in y and ∈ functions in ə prosodic suffixes. Length prosody is always short.

e.g. CCɩʸ kapa̲d̲di "while cutting"
CCɩʸ kæpi̲čča "cut(invol. past participle)"
CC∈ᵊ kæpi̲čča "cut (invol. past participle)"

The NPV pattern:

The pattern is limited to one suffix where the P system is described in relation to ̲h prosody. Thus, the pattern can be given as N̲hPV. The P and N systems are homorganic and they have the term ṭ.

e.g. N̲hPṭV kapa̲ṇḍə "do cut"

The V system is ∈ and the suffix is ə prosodic. Length prosody is short.

e.g. CC∈ᵊ kapa̲ṇḍə "do cut"

The NNV pattern:

The pattern is limited to one suffix where the N systems are homorganic and have the term t.

e.g. NNtV kapa̲nne "cut(non-past) emph."

The V system is ∈ and the suffix is y prosodic. Length prosody is short.

e.g. CC∈ʸ kapa̲nne "cut(non-past) emph."

The CCVC structure:

This structure has two patterns, PPVN and NNVN.

The PPVN pattern:

The pattern is limited to one suffix where the P systems are described in relation to h prosody. Thus, the pattern can be given as PPVN. The P systems are homorganic and have the term t and the N system has the term k.

e.g. $_{h}PP_{t}VN_{k}$ kapadden "let(them) cut"

The V system is ɛ and the suffix is y prosodic. Length prosody is short.

e.g. CCɛʸC kapadden "let(them)cut"

The NNVN pattern:

The pattern is limited to one suffix where the N systems of the initial NN cluster have the term t and the N final system has the term k.

e.g. $NN_{t}VN_{k}$ kapannan "let(me)cut"

The V system is ɑ and the suffix is w prosodic. Length prosody is short.

e.g. CCɑʷC kapannan "let(me)cut"

The V structure:

The V systems may be ɪ or ɛ . ɪ functions in y and w prosodic suffixes and ɛ functions in y and ə prosodic suffixes. Length prosody is always short.

e.g.	ɪʸ	kapai	"may cut"
	ɪʷ	kapəpiyau	"do cut pl."
	ɛʸ	kæpuvɛ	"cut(past emphɔ)"
	ɛə	kæpuvə	"cut(past participle)"

The VC structure:

The possible patterns of the VC structure are VP and VN.

The VP pattern:

The P system is described in relation to h prosody. Thus the pattern can be given as $V^{h}P$. The P system

has one term, t.

e.g. V^hP_t kæpuvot "if ...cut"

The V systems may be ɑ or ɛ and they function in w prosodic suffixes. Length prosody is short.

e.g. $C\epsilon^w$ kæpuvot "if...cut"

$C\alpha^w$ kæpuvat "even if...cut"

The VN pattern:

The pattern is limited to one suffix where the N system has the term, k.

e.g. VN_k kæpiyaŋ "be cut(yourself)"

The V system is ɑ and the suffix is w prosodic. Length prosody is short.

e.g. α^wC kæpiyaŋ "be cut(yourself)"

5.2.2.2 Disyllabic suffixes

The disyllabic suffixes have only one structure, CVCV. There are three patterns of this structure, namely, PVPV, PVLV and NVLV where each pattern is limited to one suffix.

The PVPV pattern:

The P systems are described in relation h prosody. Thus the pattern can be given as $^hPV^hPV$. The P initial system has the term k and the P initial system of the second syllable has the term ṭ. Thus, there is no contrast of systems in the pattern but there is a contrast of terms, k-ṭ.

e.g. $^hP_kV^hP_tV$ kapənəkoṭə "while cutting"

The V system is ɛ and it functions in w and ə prosodic syllables. Length prosody is short.

e.g. $C\epsilon^wC\epsilon^ə$ kapənəkoṭə "while cutting"

The PVLV pattern:

The P initial system is described in relation

to h prosody. Thus the pattern can be given as ^{h}PVLV. The P system has the term p. The L initial system of the second syllable has the term č. Thus, there is a contrast of systems, P-L as well as of terms, p-č in the pattern.

e.g. $^{h}P_{p}VLV$ kapəpijə "do cut"

The contrast of the V systems is as follows: ɪ-ɛ. ɪ functions in a y prosodic syllable and ɛ functions in a ə prosodic syllable. Length prosody is short.

e.g. $CɪʸCɛ^{ə}$ kapəpijə "do cut"

The NVLV pattern:

The N initial system has the term t and the L initial system of the second syllable has the term p.

e.g. $N_{t}VL_{p}V$ kapənəvə "cut"

The contrast of V systems is as follows: ɛ-ɑ. ɛ functions in a ə prosodic syllable and ɑ functions in a w prosodic syllable. Length prosody is short.

e.g. $Cɛ^{ə}Cɑ^{w}$ kapənəvə "cut"

5.2.2.3 Trisyllabic suffixes

There is only one trisyllabic suffix, of which the structure is VCVCV. The pattern is VSVNV. The S system has the term ʔ and the N system has the term p. Thus, there is a contrast of systems, S-N as well as of terms, ʔ -p in the pattern.

e.g. $VS_{ʔ}VN_{p}V$ kəpuvəhamə "after cutting"

The contrast of V systems is ɑ-ɛ . ɑ functions in a w prosodic syllable and ɛ functions in a ə prosodic syllable. Length prosody is short.

e.g. $ɑCɑCɛ^{ə}$ kəpuvəhamə "after cutting"

5.3 Infixes

There are three infixes, the causative infix, the past invol. marker and the conjug. marker. The conjug. marker is

different from other infixes and will therefore be discussed in the sixth chapter. The causative marker and the past invol. marker will be dealt with here.

5.3.1 The causative marker

The causative marker may be non-past or past.

5.3.1.1 The non-past causative marker

The structure of the causative infix is CV. The C system is L with the term p in the following contexts:

1) when it occurs after stems belonging to conjug.3,

e.g.	L_pV	kavənəva	"cause to eat"
	L_pV	yavənəva	"send"

2) when it occurs after the monosyllabic stems belonging to conjug.1 where the stem final C is P system or L system with the terms t and ṭ or M system with any term. There is a conjug. marker between the stem and the causative marker.

e.g.	$CVP_{ṭ}$-L_pV	kaḍəvənəva	"cause to break"
	CVP_t-L_pV	gotəvənəva	"knit"
	$CVP_{ṭ}$-L_pV	naṭəvənəva	"cause to dance"
	CVL_p-L_pV	baləvənəva	"cause to look at"
	$CVL_{ṭ}$-L_pV	marəvənəva	"cause to kill"
	$VM_{ṭ}$-L_pV	aḍ̃əvənəva	"cause to cry"

3) when it occurs after monosyllabic stems of conjug. 2 where the stem final C is the P system with the term t or L system with the term ṭ.

e.g.	$CVP_{ṭ}$-L_pV	hiṭəvənəva	"plant"
	$VL_{ṭ}$-L_pV	arvənəva	"cause to open"

4) when it occurs after disyllabic stems belonging to conjug.1 except hinas-,upad-,valak- and varad-.

e.g.	L_pV	pərələvən va	"cause to drop"

L_pV terəpəvənəva "cause to press"

(It may be noted that the conjug. marker is absent in forms given in No.1 above and in all other cases it is present. As stated above it occurs between the stem and the suffix).

Except for the stems given above, in all other cases where stems belong to conjug. 1, 2 and 4, C of the causative infix harmonizes with the stem final C. In these cases, however, the conjug. marker is absent.

e.g.	CV^hP_p- hP_pV	kappənəva	"cause to cut"
	CV^hP_p-^hP_tV	addənəva	"cause to pull"
	CVN_p-N_pV	dammənəva	"cause to put"
	VN_t-N_tV	annənəva	"cause to prick"
	$CVCV^hP_{ṭ}$-$^hP_{ṭ}V$	nəgiṭṭənəva	"cause to stand up"
	$CVCV^hP_k$-^hP_kV	valakkənəva	"cause to avoid"

In all cases given above the V system is ɛ and the syllable is ə prosodic. Length prosody is short.

e.g.	Cɛə	kavənəva	"cause to eat"
	Cɛə	kappənəva	"cause to cut"

Sometimes there can be two causative infixes in the forms given in the second group. In this case, the first infix behaves as described above, i.e. C of the causative marker harmonizes with the stem final C. The second infix behaves in the way described for the stems of the first group, in other words C of the second infix is L with the term p.

e.g.	$^hP_pVL_pV$	kappəvənəva	"cause to cut"
	N_pVL_pV	damməvənəva	"cause to put"

The V system is ɛ and the syllable is always ə prosodic. Length prosody is short.

e.g.	CɛəCɛə	kappəvənəva	"cause to cut"
	CɛəCɛə	damməvənəva	"cause to put"

5.3.1.2 The past causative marker

In the past tense causative forms, the causative infix is CV where C is L with the term p.

e.g. L_pV Kæpevuva "caused to cut"

L_pV mærevuva "caused to kill"

The V system is ɩ and the infix is w prosodic. Length prosody is short.

$Cɩ^w$ kæpevuva "caused to cut"

$Cɩ^w$ mærevuva "caused to kill"

5.3.2 The past invol. marker

The structure of the past invol. marker is C. The C system is N with the term t.

e.g. N_t kæduna "was broken"

N_t mæruna "was killed"

5.4 Prefixes

There are four prefixes in colloquial verb forms. One is monosyllabic, the others are disyllabic. The structure of the monosyllabic prefix is VC and those of others are CVCV and VCV.

The VC structure:

The C system is S with the term t.

e.g. VS_t asvenəva "resign"

VS_t askərənəva "arrange"

The V system is α and the prefix is w prosodic. Length prosody is short.

e.g. $α^wC$ asvenəva "resign"

$α^wC$ askərənəva "arrange"

The CVCV structure:

The CVCV structure has one pattern, PVLV where the P system is described in relation to h prosody. Thus the pattern can be given as ^{h}PVLV. The P system has the term p and the L system has two terms, t and t. There is a contrast of systems, P-L in the pattern. The contrast of terms is as follows: p-t, p-ṭ.

e.g. hP_pVL_pV piligannəva "accept"

$hP_pVL_{ṭ}V$ pirimahanəva "eke out"

The V systems are ɩ and the syllables are y prosodic. Length prosody is short.

e.g. $CɩʸCɩʸ$ piligannəva "accept"

The VCV pattern:

The pattern of the VCV structure is VLV and it is limited to one prefix. The L system has the term t.

e.g. $VL_{ṭ}V$ arəadinəva "plan"

The contrast of V systems is ɑ-ϵ. ɑ functions in w prosodic syllable and ϵ functions in a ə prosodic syllable. Length prosody is short.

e.g. $ɑ^{w}Cϵ^{ə}$ arəadinəva "plan"

All structures along with the number of patterns they have are given in Table 8.

Monosyll. stems	Suffixes	Infixes	Prefixes
CV	3	1	-
CVC	4	-	-
CCV	3	-	-
CCVC	2	-	-
VC	2	-	1
C	-	1	-
V	5	-	-
Disyll. Stems			
CVCV	3	-	1
VCV	-	-	1
Trisyll. stems			
VCVCV	1	-	-

Table 8. Affix structures

In conclusion, the phonological analysis of suffixes, infixes and prefixes was given in this chapter. According to the analysis of verb stems, a CC cluster does not occur in the onset position of the syllable of native stems. In suffixes, however, such clusters occur. Nevertheless, they can only be either homorganic plosives or a homorganic nasal plus plosive cluster. In stems, length prosody can be short or long. But in affixes it is always short. Another important point that should be mentioned here is that the M system does not occur in affixes.

CHAPTER 6

6.1 This chapter is divided into three parts. Part 1 gives an account of the conjug. marker and its relationship to conjug. classes. In Part 2, the relationship between non-past vol. and invol. stems and non-past and past vol. stems is considered. Part 3 deals with the following topics, junction prosodies of stems and suffixes, reduplication, the relationship between α^{w} and ϵ^{γ} the relationship between vowels preceding and following [h] and length relationship of simple verbs.

6.2 PART 1

6.2.1 Conjug. marker

The morphological unit which occurs between stems and suffixes is treated as the conjug. marker. In the literature conjug. marker has been treated in two ways. Except in one thesis, De Silva (1958) it is treated as the stem final vowel. As far as the function of the verb stem is concerned the function of the conjug. marker is different from other vowels of the stem. In order to examine this one may compare the analysis of the conjug. marker with the analysis of V systems given in chapter 3. De Silva (1958) on the other hand treats conjug. markers as junction prosodies. According to the definition of junction prosodies given in Prosodic Phonology it is difficult to treat conjug. markers as junction prosodies. In fact, the conjug. markers are quite different from the junction prosodies described in Part 3 in this chapter.

I have treated the conjug. marker as an infix. Such an analysis makes it possible to establish four conjug. classes in relation to which vol. and invol. forms and their relation to tenses can be described more satisfactorily. The absence and

presence of the conjug. marker is illustrated below: the presence of the conjug. marker is represented by ɑ, ∈ and placed between hyphens and its absence is represented by (non-syllabic marker).

Presence of the conjug. marker:

1) Between C-final stems and C-initial suffixes:

CVC-∈ᵊ-CVCV	bal-ə-nəva	"look"
VC-ɪʸ-CVCV	an-i-nəva	"prick"
CVC-ʊʷ-CVCV	bæl-u-va	"looked"
CVC-∈ʸ-CVCV	kæp-e-nəva	"is cut"

2) Between C-final stems and V-initial suffixes:

CVC-ɑʷ-V	bal-a-i	"may look"
VC-ɑʷ-V	an-a-i	"may mix"

Absence of the conjug. marker:

1) Between V-final stems and C-initial suffixes:

CV-ɸ-CVCV	ka-nəva	"eat"
CV-ɸ-CVCV	na:-nəva	"bathe"

2) Between V-final stems and V-initial suffixes:

CV-ɸ-V	ka-i	"may eat"
CV-ɸ-V	de-i	"may give"

3) Between C-final stems with the N system and C-initial suffixes:

CVC-ɸ-CVCV	dan-nəva	"know"
VC-ɸ-CVCV	in-nəva	"stay"

4) Between C-final stems with g prosody and V-initial suffixes:

CVC-ɸᵍ-V	pæn-n-ə	"jumped"

VC-ɸɛ-V æd-d-ə "pulled"

6.2.2 Conjugation classes of volitive forms

6.2.2.1 Non-past

Four conjug. classes, 1,2,3 and 4, based on the stem final feature and type of conjug. marker are set up for non-past vol. forms.

Conjug. 1

In conjug.1 the conjug. marker is ɛ and the syllable is ə prosodic.

e.g. CVC-ɛə-CVCV kapənəva "cut"
CVC-ɛə-CVCV balənəva "look"

Conjug. 2

In conjug.2 the conjug. marker is ɩ and the syllable is y prosodic.

e.g. CVC-ɩʏ-CVCV paniŋəva "jump"
VC-ɩʏ-CVCV adiŋəva "pull"

Conjug. 3

In conjug.3 the conjug. marker is ɸ and the stem is V final.

e.g. CV-ɸ-CVCV ka-nəva "eat"
CV-ɸ-CVCV na:-nəva "bathe"

Conjug.4

In conjug.4 the conjug. marker is ɸ and the stem is C final and nasal.

e.g. CVC-ɸ-CVCV gan-nəva "take"
VC-ɸ-CVCV in-nəva "stay"

6.2.2.2 Past

Conjug. 1

In conjug. 1 the conjug. marker is ɩ and the syllable is w prosodic.

e.g.	CVC-ɩʷ-CV	kæpuva [1]	"cut"
	CVC-ɩʷ-CV	bæluva	"looked"

Conjug. 2

In conjug. 2 the conjug. marker is ɸ and the stem is C- final.

e.g.	CVC-ɸ-CV	pæn-n-ə [1]	"jumped"
	VC-ɸ-CV	æd-d-ə	"pulled"

Conjug. 3

In conjug. 3 the conjug. marker is ɸ and the stem is V- final.

e.g.	CV-ɸ-CV	kæ:-va [1]	"ate"
	CV-ɸ-CV	næ:-va	"bathed"

Conjug. 4

In conjug. 4 the conjug. marker is ɸ and the stem is C- final.

e.g.	CVC-ɸ-CV	gat-t-ə [1]	"took"
	VC-ɸ-CV	un-n-ə	"stayed"

6.2.2.3 Non-past perfective

Conjug. 1

In conjug. 1 the conjug. marker is ɛ and the syllable is ə prosodic.

e.g.	CVC-ə -CV	kapəla	"has/have cut"
	CVC-ə -CV	balələ	"has/have looked at"

---

[1] [v], [n], [t] and [d] are treated as junction prosodies.

Conjug. 2

In conjug. 2 the conjug. marker is ɛ and the syllable is ə prosodic as in conjug. 1.

e.g. CVC-ə-CV pænəla "has/have jumped"

Conjug. 3

In conjug. 3 the conjug. marker is ɸ and the stem is V- final.

e.g. CV-ɸ-CV ka:-la "has/have eaten"

CV-ɸ-CV na:-la "has/have bathed"

Conjug. 4

In conjug. 4 the conjug. marker is ɛ and the syllable is ə prosodic.

e.g. VC-ə-CV ĩdəla "has/have stayed"

The conjug. markers of non-past, past and non-past perfective vol.forms of the four conjug.s are summarized in Table 9.

	Conjug. 1	Conjug. 2	Conjug. 3	Conjug. 4
Non-past	-ɛə-	-ɹʏ-	-	-
Past	-ɹʷ-	-	-	-
Non-past perfective	-ɛᵊ-	-ɛə-	-	-ɛᵊ-

Table 9. Vol. conjug. markers

6.2.3 **Conjug. marker in invol. forms**

All invol. forms fall into one class and the conjug. marker is always present.

6.2.3.1 Non-past

The conjug. marker is ɛ and the syllable is y prosodic.

e.g. CVC-$ɛ^{y}$-CVCV kæpɛnəva "cut (invol.)"
VC-$ɛ^{y}$-CVCV ædɛnəva "pull (invol.)"

6.2.3.2 Past

The conjug. marker is ɩ and the syllable is w prosodic.

e.g. CVC-$ɩ^{w}$-CV kæpuna "cut (invol.)"
VC-$ɩ^{w}$-CV æduna "pulled (invol.)"

6.2.3.3 Non-past perfective

The conjug. marker is ɩ and the syllable is y prosodic.

e.g. CVC-$ɩ^{y}$-CV kæpila "has/have cut (invol.)"
VC-$ɩ^{y}$-CV ædila "has/have pulled (invol.)"

Thus, the conjug. markers of non-past, past and non-past perfective invol. forms can be given as follows:

Non-past	Past	Non-past perfective
$-ɛ^{ə}-$	$-ɩ^{w}-$	$-ɩ^{y}-$

6.3 **PART 2**

6.3.1 The simple verb stems were analyzed in the third chapter. There, it was said that the difference between vol. and invol. stems depends on prosodies and not on V systems or C systems. Therefore, in the following section the prosodic relationship between non-past vol. and non-past invol. verb stems as well as non-past and past vol. stems will be discussed.

6.3.2 The systematic prosodic relationship between vol. and invol. non-past stems

6.3.2.1 Monosyllabic stems

As far as prosodies are concerned, monosyllabic stems of each conjug. class can be divided into two groups. Stems of the first group are characterized by y prosody in both vol. and invol. stems and those of the second group are characterized by w prosody when vol. and y prosody when invol.

Group 1: y prosodic vol. and invol. stems

	Vol.		Invol.	
Conjug. 1				
e.g. CɛʸC-ɛᵊ-	temənəva	"wet"	CɛʸC-ɛʸ-	temenəva
ɪʸC-ɛᵊ-	irənəva	"tear"	ɪʸC-ɛʸ-	irenəva
Conjug. 2				
e.g. CɪʸC-ɪʸ-	bidinəva	"break"	CɪʸC-ɛʸ-	bidenəva
ɪʸC-ɪʸ	ihinəva	"sprinkle"	ɪʸC-ɛʸ-	ihenəva
Conjug. 3				
e.g. Cɛʸ-ɸ-	denəva	"give"	Cɛʸ-ɛɣ-	devenəva
ɛʸ-ɸ-	enəva	"come"	ɛʸ-ɛɣ-	evevenəva
Conjug. 4				
e.g. ɪʸC-ɸ-	innəva	"stay"	ɪʸC-ɛɣ-	indenəva

According to the examples given above it is clear that the difference between vol. and invol. forms depends on the conjug. marker and not on the stem.

Group 2: w prosodic vol.stems and y prosodic invol. stem

	Vol.		Invol.	
Conjug. 1				
e.g. $C\alpha^{w}C$	kapənəva	"cut"	$C\alpha^{y}C$	kæpenəva
$\epsilon^{w}C$	otənəva	"fold"	$\epsilon^{y}C$	etenəva
$C\iota^{w}C$	pudənəva	"offer"	$C\iota^{y}C$	pidenəva
Conjug. 2				
e.g. $C\alpha^{w}C$	paninəva	"jump"	$C\alpha^{y}C$	pænenəva
$\alpha^{w}C$	adinəva	"pull"	$\alpha^{y}C$	ædenəva
$C\bar{\iota}^{w}C$	pu:dinəva	"blossom"	$C\bar{\iota}^{y}C$	pi:denəva
Conjug. 3				
e.g. $C\alpha^{w}$	kanəva	"eat"	$C\alpha^{y}$	kævenəva
$C\alpha^{w}$	janəva	"go"	$C\alpha^{y}$	jævenəva
Conjug. 4				
e.g. $C\alpha^{w}C$	dannəva	"know"	$C\alpha^{y}C$	dænenəva
$C\alpha^{w}C$	gannəva	"take"	$C\alpha^{y}C$	gænenəva

According to the examples given above the difference between vol. and invol. stems is prosodic; both have the same V systems but vol.stems are w prosodic and invol. stems are y prosodic.

6.3.2.2 Disyllabic stems

Only conjug. 1 and 2 have disyllabic stems.

Conjug. 1

Stems belonging to conjug. 1 can be divided into four groups, A, B, C and D.

Group A:

In group A, both vol. and invol. stems are characterized by y prosody.

e.g.	Vol.		Invol.
	$C\iota^{y}C\iota^{y}C-\epsilon^{\partial}$-CVCV		$C\iota^{y}C\iota^{y}C-\epsilon^{y}$-CVCV
	mirikənəva	"squeeze"	mirikenəva
	$\iota^{y}C\iota^{y}C-\epsilon^{\partial}$-CVCV		$\iota^{y}C\iota^{y}C-\epsilon^{y}$-CVCV

ihirənəva "spill" ihirenəva

Thus the difference between vol. and invol. stems depends on the conjugation marker which is ə prosodic in vol. form and y prosodic in invol. form.

Group B:

In group B, prosodies of both vol. and invol. stems are as follows: y- ə-.

e.g. CɛʸCɛᵊC-ɛᵊ-CVCV CɛʸCɛᵊC-ɛʸ-CVCV

perələnəva "drop" perəlenəva

CɛʸCɛᵊC-ɛᵊ-CVCV CɛʸCɛᵊC-ɛʸ-CVCV

terəpənəva "press" terəpenəva

Thus the difference between vol. and invol. stems similarly depends on the conjug. marker which is ə prosodic in vol. forms and y prosodic in invol. forms.

Group C:

In group C, syllable prosodies of vol. and invol. stems are w-ə and y-ə respectively. So the difference is in the prosody of the first syllable of the stem.

	Vol.	Invol.
e.g.	CɑʷCɛᵊC	CɑʸCɛᵊC
	galəpənəva "match"	gælapenəva
	CɛʷCɛᵊC	CɛʸCɛᵊC
	polə̃bənəva "persuade"	pelə̃benəva

Group D:

In group D, vol. stems are w prosodic and invol. stems are y prosodic. Here the difference between vol. and invol. stems depends on the prosodies of both syllables of the stem.

	Vol.		Invol.
e.g.	ɑʷCɭʷC		ɑʸCɭʸC
	akulənəva	"fold"	ækilenəva
	ɭʷCɭʷC		ɭʸCɭʸC
	uturənəva	"overflow"	itirenəva

Conjug. 2

Disyllabic stems belonging to conjug. 2 can be divided into two types, A and B.

Group A:

In group A, stems of both vol. and invol. stems are y prosodic. Thus, the difference between vol. and invol. stems depends on the conjug. marker which is ɩʸ in vol. stems and ɛʸ in invol. stems.

e.g.	Vol.		Invol.
	CɑʸCɩʸC-ɩʸ-CVCV		CɑʸCɩʸC-Cʁ-ɛʸ-CVCV
	nægiṭinəva	"stand"	nægiṭṭenəva
	ɑʸCɩʸC-ɩʸ-CVCV		ɑʸCɩʸC-Cʁ-ɛʸ-CVCV
	ævidinəva	"walk"	ævidden əva

Group B:

In group B, syllable prosodies of vol. and invol. stems are w-ə and y-ə respectively. The difference thus depends on the first syllable of the stem.

e.g.	Vol.		Invol.
	CɑʷCɛᵊC		CɑʸCɛᵊC
	parədinəva	"defeat"	pærədenəva
	ɩʷCɛᵊC		ɩʸCɛᵊC
	upədinəva	"bear"	ipədenəva

6.3.2.3 According to the above analysis, in invol. stems, monosyllabic stems and the first syllable of disyllabic stems are always y prosodic. The second syllable of disyllabic stems may be y or ə depending on the contexts given in the third chapter. In volitive stems, the monosyllabic stems and the initial syllable of disyllabic stems may be y or w prosodic but

not ə prosodic. The second syllable of disyllabic stems may be y, w or ə prosodic. A summary of the prosodic relationship is given in Table 10 .

Conjug. classes	Monosyllabic stems		Disyllabic stems	
	Vol.	Invol.	Vol.	Invol.
1	y	y	y y	y y
	ẉ	ẏ	ẏ ə	ẏ ə
	-	-	w ə	y ə
	-	-	w w	y y
2	y	y	y y	y y
	w	y	w ə	y ə
3	y	y	- -	- -
	w	y	- -	- -
4	y	y	- -	- -
	w	y	- -	- -

Table 10. Prosodic relationship between non-past vol. Invol. stems.

6.3.3 The systematic prosodic relationship between past and non-past vol. stems

6.3.3.1 Monosyllabic stems

Monosyllabic stems are divided into three groups A, B and C. Stem belonging to conjug. 1 and 2 are studied in group A and B and those of conjug. 3 are analyzed in group C.

Group A:

In group A, stems of both past and non-past are y prosodic.

e.g.

	Non-past		Past	
Conjug. 1				
CɛʸC	temənəva	"wet"	CɛʸC	temuva
ɪʸC	irənəva	"tear"	ɪʸC	iruva
Conjug. 2				
CɪʸC	bidiⁿnəva	"break"	CɪʸC	binda
ɪʸC	ihinəva	"sprinkle"	ɪʸC	issa

According to the examples given above it is clear that there is no prosodic difference between non-past and past stems of the given groups, both being y prosodic.

Group B:

Stems in group B differ; they are w prosodic in the non-past and y prosodic in the past.

e.g.

	Non-past		Past	
Conjug. 1				
CɑʷC	kapənəva	"cut"	CɑʸC	kæpuva
ɛʷC	otənəva	"fold"	ɛʸC	etuva
CɪʷC	duvənəva	"run"	CɪʸC	divva
Conjug. 2				
CɑʷC	paniˆnəva	"jump"	CɑʸC	pænna
ɑʷC	adinəva	"pull"	ɑʸC	ædda

Group C:

As stated above, group C includes stems belonging to Conjug. 3. They may further be divided into four sub-groups, 1, 2, 3 and 4. Non-past stems belonging to conjug. 3 may differ from the corresponding past stems not only in prosodies but also in V systems.

Group 1

The stem is y prosodic in the non-past and w prosodic in

the past. In the non-past stem, V is ɛ, and the stem is y prosodic and in the past V is ɪ and the stem is w prosodic.

e.g.	Non-past		Past	
Cɛʸ	denəva	"give"	Cɪʷ	dunna

Group 2

The stem in both past and non-past is y prosodic. V is ɛ in the non-past and ɪ in the past.

e.g.	Non-past		Past	
Cɛʸ	renəva	"evacuate the bowels"	Cɪʸ	rivva

Group 3

Stems in this group are w prosodic in the non-past and y prosodic in the past, and the V system is ɑ. Length prosody of the non-past stem may be short or long and is always long in the past.

e.g.	Non-past		Past	
Cɑ̄ʷ	na:nəva	"bathe"	Cɑ̃ʸ	næ:va
Cɑ̄ʷ	ha:nəva	"plough"	Cɑ̄ʸ	hæ:va
Cɑʷ	kanəva	"eat"	Cɑ̃ʸ	kæ:va

Group 4

The stem is w prosodic in the non-past and y prosodic in the past. V is ɛ in the non-past stem and ɪ in the past stem.

e.g.	Non-past		Past	
Cɛʷ	bonəva	"drink"	Cɪʸ	bivva

Group 5

The stem is w prosodic in the non-past and y prosodic in the past. V is ɑ in the non-past stem and ɪ in the past stem.

e.g. Non-past Past

Cɑʷ janəva "go" Cɪʸ gija: [2]

It was said in the third chapter that conjug. 4 has only three stems, namely, dan-, gan- and in-. The stem dan-, however, is limited to the non-past. gan- has no difference in V system and syllable prosody in both non-past and past. The stem in- is y prosodic in the non-past and w prosodic in the past.

e.g.

Non-past		Past
Cɪʸ innəva	"stay"	Cɪʷ unna

According to the analysis given above, the non-past and past stems of conjug.s 1 and 2 have a systematic prosodic relationship but there is not such a systematic relationship in some stems of conjug. 3 and 4. These relationships are summarized in table 11 together with those of disyllabic stems.

6.3.3.2 Disyllabic stems

Only conjug. 1 and 2 have disyllabic stems. Stems of conjug. 1 are divided into four groups, A, B, C and D but there is only one group in conjug. 2.

Conjug. 1

Group A:

In group A, stems of both past and non-past are y prosodic.

Non-past		Past
CɪʸCɪʸC		CɪʸCɪʸC
mirikənəva	"squeeze"	mirikuva
ɪʸCɪʸC		ɪʸCɪʸC
ihirənəva	"spill"	ihiruva

[2] This stem is treated as an irregular one.

Group B:

In group B, the first and the second syllables of both non-past and past stems are y and ə prosodic respectively.

e.g.	Non-past		Past
	CєʸCєəC		CєʸCєəC
	perələnəva	"drop"	peralуva
	CєʸCєəC		CєʸCєəC
	terəpənəva	"press"	terəpuva

Group C:

In group C, syllables of the non-past stems are w-ə and those of the past stems are y-ə.

e.g.	Non-past		Past
	CɑʷCєəC		CɑʸCєəC
	galəpənəva	"match"	gæləpuva
	CєʷCєəC		CєʸCєəC
	polə̃bənəva	"persuade"	pelə̃buva

Group D:

In group D, the non-past stems are w prosodic and the past stems are y prosodic.

e.g.	Non-past		Past
	CɑʷCɑʷCC		CɑʸCɑʸCC
	kalattənəva	"stir"	kælættuva
	ɩʷCɑʷCC		ɩʸCɑʸCC
	uganənəva	"teach"	igænnuva

Conjug. 2

Disyllabic stems belonging to conjug. 2 are y prosodic in both non-past and past stems.

Non-past		Past
CɑʸCɩʸC		CɑʸCɩʸC
nægitinəva	"stand"	nægitta
ɑʸCɩʸC		ɑʸCɩʸC
ævi..inəva	"walk"	ævidda

A summary of the above analysis is given in the table 11.

Conjug. class	Monosyllabic stems		Disyllabic stems	
	Vol.	Invol.	Vol.	Invol.
1	y	y	y y	y y
	w	y	y ə	y ə
	-	-	w ə	y ə
	-	-	w w	y y
2	y	y	y y	y y
	w	y	- -	- -
3	y	y	- -	- -
	y	w	- -	- -
	w	y	- -	- -
4	y	w	- -	- -
	w	w	- -	- -

Table 11 Non-past and past vol. stems

6.4 PART 3

6.4.1 Junction prosodic systems

When abstractions are made of the morphological elements comprising a verb form, namely, stems and affixes which can be prefixes, infixes and suffixes, there yet remain certain features of interrelations between stems and suffixes, stems and the conjug. marker, which is an infix, and the conjug. marker and suffixes, to be accounted for; these will be set out in this thesis as junction prosodies of stems and suffixes, of stems and conjug. marker and of conjug. marker and suffixes.

There are three junction prosodic systems, namely,

1. y- prosody
2. w- prosody

and 3. g- prosody.

The phonetic exponent of y- prosody is [j], the palatal approximant.

The phonetic exponent of w- prosody is [ʋ], the labio-dental approximant.

The phonetic exponent of g- prosody is a geminated consonant.

In the phonological formulae they are marked as y, w and g.

6.4.1.1 y junction prosody

y- junction prosody occurs between stem and suffixes in the following context: ɬʸ-ɑʷ,ɛʷ/ə.

e.g.	gijja:	CV-y-V	"went"
	gijot	CV-y-VC	"if...go"
	gijə	CV-y-V	"gone"

y- junction prosody occurs between the conjug. marker and suffixes in the following context: ɬʸ -ɑʷ,ɛə.

mærijjan	CVCV-y-VC	"kill yourself"
mærijjə	CVCV-y-V	"kill yourself"
vætijjə	CVCV-y-V	"fall yourself"
vætijjə	CVCV-y-V	"fall yourself"

All forms belonging to this group are involitive imperative.

6.4.1.2 w- junction prosody

w- junction prosody occurs between stems and suffixes in the following context of in vol. forms: ɑʸ-ɑʷ,ɛʷ/ə.

e.g.	kæ:vja [3]	CV-w-V	"ate"
	kæ:vot	CV-w-VC	"if...eat"
	kæ:vjə	CV-w-V	"eaten"
	næ:vja	CV-w-V	"bathed"
	næ:vot	CV-w-V	"if...eat"
	næ:vjə	CV-w-V	"bathed"

[3] Grammatical functions of these suffixes are given in the appendix.

w- junction prosody occurs between the conjug. marker and suffixes in the following context of vol. forms: ɬʷ-ɑʷ,ɛʷ/ə.

e.g.	kæpuva	CVCV-w-V	"cut"
	kæpuvot	CVCV-w-VC	"if...cut"
	kæpuvə	CVCV-w-V	"cut (past part.)"
	bæluvə	CVCV-w-V	"looked"
	bæluvot	CVCV-w-VC	"if ...look at"
	bæluvə	CVCV-w-V	"looked (past participle)"

All forms bolonging to this group are those of vol. past.

6.4.1.3 g- junction prosody

g- prosody occurs between stems and sufixes in the following context: P,N,S,L-ɑʷ

e.g.	tæppa	CVC-g-V	"sunbathed"
	ædda	VC-g-V	"pulled"
	nægitta	CVCVC-g-V	"stood"
	dækka	CVC-g-V	"saw"
	panna	CVC-g-V	"jumped"
	issa	VC-g-V	"sprinkled"
	gilla	CVC-g-V	"swallowed"

All forms belonging to this group are those of the vol. past of conjug. 2.

g- junction prosody occurs between stems and the conjug. marker in the following context: P,N,S,L-ɛʸ.

e.g.	kæppevuva	CVC-g-ɛCVCV	"caused to cut"
	æddevuva	VC-g-ɛCVCV	"caused to pull"
	vættevuva	CVC-g-ɛCVCV	"caused to fall"
	næggevuva	CVC-g-ɛCVCV	"Caused to wake"
	dæmmevuva	CVC-g-ɛCVCV	"caused to put"
	ænnevuva	VC-g-ɛCVCV	"caused to prick"
	gæssevuva	CVC-g-ɛCVCV	"caused to hit"
	gillevuva	CVC-g-ɛCVCV	"caused to swollow"

All forms belonging to this group are those of past causative.

6.5 Reduplication

It is stated in the appendix that reduplicated verb forms are used to indicate that the action is in progress. In the literature, reduplicated forms were treated as reduplication of verb stems. In this study, however, they are treated as reduplication of base forms.

6.5.1 Monosyllabic stems

Conjug. 1:

In reduplicated forms of conjug. 1 the conjug. marker of the first part is ɛ where the syllable is ə prosodic and the conjug. marker of the second part may be ɛ where the syllable is ə prosodic or a where the syllable is w prosodic. In the first case all syllables are short and in the second case the second syllable of the second part is long.

e.g. $Ca^{w}C\epsilon^{\partial}$-$Ca^{w}C\epsilon^{\partial}$ kapə-kapə "cutting"
$Ca^{w}C\epsilon^{\partial}$-$Ca^{w}C\bar{a}^{w}$ kapə-kapa: "cutting"

Conjug. 2:

In conjug. 2, the base form is reduplicated, i.e. the conjug. marker is always ɛ where the syllable is ə prosodic.

e.g. $Ca^{y}C\epsilon^{\partial}$-$Ca^{y}C\epsilon^{\partial}$ pænə-pænə "jumping"
$a^{y}C\epsilon^{\partial}$-$a^{y}C\epsilon^{\partial}$ ænə-ænə "pricking"

Cnjug. 3:

It is said in the appendix that stems of conjug. 3 themselves are treated as base forms as the conjug. marker is absent there. In reduplicated forms, the first stem has short length prosody and the second one has long length prosody. e.g.

Ca^{w}-$C\bar{a}^{w}$ ka-ka: "eating"
Ca^{w}-$C\bar{a}^{w}$ na-na: "bathing"

However, when the stem ve- is reduplicated it occurs as ve-vi: where V of the first stem is ɛ and that of the second stem is ɪ. Both syllables are y prosodic, but the first stem has short length prosody and the second has long length prosody.
e.g. $C\epsilon^{y}$-$C\bar{\imath}^{y}$ ve-vi: "happening"

Conjug. 4:

As is said in the appendix, among the three stems belonging to conjug. 4 only two have base forms. They are reduplicated as follows:

$Ca^{y}C\epsilon^{ə}$-$Ca^{y}C\epsilon^{ə}$ dænə-dænə "knowing"
$^{y}C\epsilon^{ə}$- $^{y}C\epsilon^{ə}$ $i\tilde{d}ə$-$i\tilde{d}ə$ "living"

6.5.2 Disyllabic stems

As was stated in chapter 3 only conjug. 1 and 2 have disyllabic stems. However, it is not necessary to discuss reduplicated disyllabic stems here in detail as they are similar to two base forms.

Conjug. 1
e.g. $C\imath^{y}C\imath^{y}C\epsilon^{ə}$-$C\imath^{y}C\imath^{y}C\epsilon^{ə}$ mirikə-mirikə "squeezing"
$a^{w}C\imath^{w}C\epsilon^{ə}$-$a^{w}C\imath^{w}C\epsilon^{ə}$ akulə-akulə "folding"

Conjug. 2
$Ca^{y}C\imath^{y}C\epsilon^{ə}$-$Ca^{y}C\imath^{y}C\epsilon^{ə}$ nægiṭə-nægiṭə "standing"
$a^{y}C\imath^{y}C\epsilon^{ə}$-$Ca^{y}C\imath^{y}C\epsilon^{ə}$ ævidə-ævidə "walking"

6.6 Length relationship

According to the analysis of simple verb stems and affixes two adjacent syllables cannot have long length prosody. There is no such restriction for short length prosodic syllables, i.e. all syllables of a polysyllabic verb can be short length prosodic. However, in disyllabic forms where V of the suffix is ɑ and the suffix is w prosodic either the stem or the

suffix is long, i.e. both cannot have short length prosody.

e.g.	gija:	CVCV	"went"
	kæ:va	CVCV	"ate"
	ka:la	CVCV	"has/have eaten"
	kəla:	CVCV	"did (something)"

Nevertheless, both syllables cannot be long. According to the analysis of loan stems of phrasal verbs, however, two adjacent syllables can be long.

e.g.	a:ru:dəvenəva	CVCVCV	"impute"

6.7 ə prosodic syllables with ∈

The ə prosodic syllables with ∈ do not occur in closed syllables and in the syllables preceding or following [h]. In such contexts α^{w} occurs.

e.g.	kapənəva	CVC∈CVCV	"cut"
but	kapanda	CVCαCCV	"to cut"
	peralənəva	CVC∈C∈CVCV	"drop"
but	garahanəva	CVCαCαCVCV	"blame"

In conclusion, it has been shown in this chapter that verb stems could be divided into conjug. classes depending on the nature of the conjug. marker. The usefulness of such a classification can be seen in the third chapter where the verb stems are analysed. It has also shown in this chapter that there is a systematic prosodic relationship between non-past vol. and invol. forms and non-past and past vol.forms. Junction prosodies which are predictable according to context, reduplication, length relationship of syllables and ə prosodic syllables with ∈, were also considered in this chapter.

CHAPTER 7

7.0 RAPID VERB FORMS

7.1 A phonological analysis of verb stems was given in the third and fourth chapters and that of affixes was given in the fifth chapter. This chapter deals with verb forms which have one phonological shape in SS and another in RS. The difference between SS and RS is observable from certain stems and affixes, the causative infix or the conjug. marker. It is not necessary to analyze verb forms which are similar in both SS and RS as an analysis has already been given for slow verb forms.

In this chapter, the focus will be on the relevant phonological unit (which can be a few syllables, one syllable, a V or a C unit or prosodies) on which the difference between slow and rapid forms depends. Here also stems, affixes and the conjug. marker will be considered separately; stems will be taken first. However, as SS stem and suffix structures have already been described in detail only the formulae will be given here for comparison with RS structures.

7.2 STEMS

7.2.1 Simple verb stems

In the third chapter, where a phonological analysis of verb stems was given, verb stems were first grouped on the basis of the grammatical categories of verb forms, and secondly, they were divided into sub-groups by the nature of the conjug. marker. Finally, the sub-groups were again divided on the basis of the C and V structures of the stems.

In the analysis of RS stems it is not necessary to discuss all the stems of those groups and sub-groups as there are only about twenty two stems which have one shape in SS and another shape in RS. All other stems have the same shape in both SS

and RS. Among those twenty-two stems one belongs to conjug.3, two belong to conjug.2 and all others belong to conjug.1.

7.2.1.1 Conjug. 1

The stems belonging to conjug.1 are as follows:

pen-	tij-	kər-	nam-	lov-	ahul-
pal-	dam-	kij-	nim	vaṭ-	al-
bal-	dov-	gen-		ve:l-	
	dan-			vij-	

Among the given stems some need to be analyzed individually and others, when they share common features, will be discussed in groups.

pen- and gen-

The parallel RS stems of pen-, CVC and gen-,CVC when they occur in non-past forms are pe:,CV and ge:,CV. The C system of the RS stems is P and the terms are p and k respectively.

e.g. $^{h}P_{p}V$ pe:na: "see"

$^{h}P_{k}V$ ge:na: "bring"

The phonological structure given for the SS stems is as follows:

$^{h}P_{p}VN_{t}$ penenəva "see"

$^{h}P_{k}VN_{t}$ genenəva "bring"

Thus, there is a contrast of systems, P-N as well as of terms, p-t and k-t in the SS stems but there are no such contrasts in the RS stems.

There is no difference between the SS and RS stems in the V systems and syllable prosodies apart from that of length. The difference in length is discussed in the analysis of the conjug. marker.

lov- and dov-

The parallel RS stems of lov-, CVC and dov-, CVC are lo:-, CV and do:- ,CV when they occur in non-past forms where the suffix begins with C or V but not a CC cluster.

The C systems of the RS stems are L and P with the term t.

e.g. L_tV lo:na: "lick"

$ᵬP_tV$ do:na: "milk"

The phonological structure given for the SS stem is as follows:

L_tVL_p lovənəva "lick"

$ᵬP_tVL_p$ dovənəva "milk"

As far as the SS stem is concerned, there is a contrast of systems,P-L as well as of terms, t-p. But there is no such contrast in the RS stems. There is no difference between the SS and the RS stems in the V system and syllable prosody apart from the difference in length prosody which is discussed in the analysis of the conjug. marker.

nam- and nim-

The parallel RS stems of nam- and nim- are nav- and niv- where the stem structure is CVC. The C initial system is N with the term t and the C final is L with the term p.

e.g. N_tVL_p navəna: "bend"

N_tVL_p nivəna: "extinguish"

The phonological structure given for the SS stems is as follows:

N_tVN_p namənəva "bend"

N_tVN_p nimənəva "extinguish"

Thus, there is a contrast of systems, N-L as well as of terms, t-p in the RS stems but there is no contrast of systems in the SS stem even though there is a contrast of terms. The V system and the syllable prosodies of both SS and RS stems are the same.

pal-, tal-, ve:l- and al-

The invol. non-past perfective SS forms of the above verbs are pælila, tælila, ve:lila and ælila and the parallel RS forms are as follows: pæila, tæila, ve:ila and æila. The stems are pal-, tal-, ve:l- and al- and stem structures are (C)CV. The C system may be the P system with the terms p and t, or the L

system with the term p.

e.g.	$^{h}P_{p}V$	pæila	"has/have split"
	$^{h}P_{t}V$	tæila	"has/have flogged"
	$L_{p}V$	ve:ila	"has/have dried"
	V	æila	"has/have stuck"

The phonological structure given for the SS stems is as follows:

$^{h}P_{p}VL_{t}$	pælila	"has/have split"
$^{h}P_{p}VL_{t}$	tælila	"has/have flogged"
$L_{p}VL_{t}$	velila	"has/have dried"
VL_{t}	ælila	"has/have stuck"

Thus, there is a contrast of the systems, P-L as well as of terms, p-t in the SS stems but there is no such contrast in the RS stems. Both SS and RS stems have the same V systems and syllable prosodies.

vaṭ-

The SS invol. past general, non-past perfect, conditional and concessive forms of vaṭ- are væṭuna, væṭila, væṭunot and væṭunat where the stem structure is CVC. The parallel RS forms are væhna, væhla, væhnot and væhnat. In the RS stem structure, the C initial system is L with the term p and the C final system is S with the term ʔ.

e.g.	$L_{p}VS_{ʔ}$	væhna	"fell"
	$L_{p}VS_{ʔ}$	væhla	"has/have fallen"

The phonological structure given for the SS stem is as follows:

$L_{p}V^{h}P_{ṭ}$	væṭuna	"fell"
$L_{p}V^{h}P_{ṭ}$	væṭila	"has/have fallen"

Thus, the difference between the SS and RS stem is that the contrast of the systems of the SS stem is L-P and that of the RS stem is L-S. The contrast of the terms of the SS stem is p-t and that of the RS stem is p-ʔ .

ahul-

The parallel RS stem of ahul- is avul-. The stem structure

of the above stem is VCVC. In the RS stem structure the C initial system is L with the term p and the C final system is L with the term t.

e.g. VL_pVL_t avulənа: "pick up"

The phonological structure given for the SS stem is as follows:

e.g. VS_2VL_t ahulənəva "pick up"

Thus, there is a contrast of systems as well as of terms in the SS stem but there is no contrast of systems in the RS stem even though there is a contrast of terms. The V systems and syllable prosodies of both stems are the same.

tij-

It is shown in the third chapter that this SS stem is treated as an irregular one. In that the C final system is L with the term č when it occurs in non-past forms. However, it is P with the term p when it occurs in past forms.

e.g. $^hP_tV^hP_p$ tibuna "was"

In RS, the C final system is L with the term p.

e.g. $^hP_tVL_p$ tivuna "was"

Thus, there is no contrast of the systems in the SS stem but there is a contrast in the RS stem. The contrasts of terms are the same in both SS and RS stems.

kər-

It is shown in the third chapter that this stem is also treated as an irregular stem. In that the C final system is L with the term t when it occurs in non-past forms. However, when it occurs in past forms it is L system with the term t.

e.g. $^hP_kVL_t$ kəla: "did"

In RS it is the L system with the term t.

e.g. $^hP_kVL_t$ kara: "did"

vij-

vij- is yet another irregular stem which has two shapes; one in the non-past and another in the past. In the past, the stem

final C is the L system with the term p.

e.g. $L^{p}VL_{p}$ vivva "wove"

In RS, however, the stem is V final.

e.g. $L_{p}V$ vi:ja "wove

There is a difference between the SS and RS stem in length and that will be discussed in the analysis of the conjug. marker.

dam-

The parallel RS stem of dam- is da:- when it occurs in non-past volitive forms. The structure of the RS stem is CV where the C system is P with the term t.

e.g. $\underline{b}P_{t}V$ da:na: "put"

The phonological structure given for the SS stem is as follows:

$\underline{b}P_{t}VN_{p}$ damənava "put"

Thus, there is a contrast of systems,P-N as well as of terms, t-p in the SS stem but there is no such contrast in the RS stem. There is no difference between the SS and RS stem in the V system and syllable prosody. The difference in length is discussed in the analysis of the conjug. marker.

bal-

The parallel RS stem of bal- is ba:- when it occurs in the infinitive form where the stem structure is CV. The C initial system is P with the term p.

e.g. $\underline{b}P_{p}V$ ba:ɳḍə "to look at"

The phonological structure given for the SS stem is as follows:

$\underline{b}P_{p}VL_{t}$ balaɳḍə "to look at"

Thus, there is a contrast of systems, P-L as well as of terms, p-t in the SS stem but there is no such contrast in the RS stem. There is no difference between the SS and RS stems in the V systems and syllable prosody. The difference in length is discussed in the analysis of the conjug. marker.

tij- and kij-

The parallel RS stems of tij- and kij- are ti:- and ki:- when

they occur in non-past perfective forms. The structure of the RS stem is CV where the C system is P with the terms t and k.

e.g. $^{h}P_{t}V$ ti:la "has/have kept"

$^{h}P_{k}V$ ki:la "has/have said"

The phonological structure given for the SS stem is as follows:

$^{h}P_{t}VL\check{s}$ tiiəla "has/have kept"

$^{h}P_{k}VL\check{s}$ kiiəla "has/have said"

Thus, there is a contrast of systems, P-L as well as of terms, k-$\check{c}_{\wedge}^{t-\check{c}}$ in the SS stem but there is no such contrast in the RS stem. There is no difference between the SS and RS stems in the V systems and syllable prosody and the difference in length is discussed in the analysis of the conjug. marker.

7.2.1.2 Conjug. 2

The stems belonging to conjug.2 can be given as follows: pan-, ban-, gan- and an-.

pan-,ban-,gan- and an-

The parallel RS stems of pan-,ban-,gan- and an are pa-,ba-,ga-, and a-. The stem structure of the RS stems is (C)V where the initial C is P which has two terms,p and k. The P system is described in relation to h and h prosodies.

e.g. $^{h}P_{p}V$ paina: "jump"

$^{h}P_{p}V$ baina: "blame"

$^{h}P_{k}V$ gaina: "count"

V aina: "prick"

The phonological structure given for the SS stems is as follows:

$^{h}P_{p}VN_{t}$ paninəva "jump"

$^{h}P_{p}VN_{t}$ baninəva "blame"

$^{h}P_{k}VN_{t}$ ganinəva "count"

VN_{t} aninəva "prick"

Thus, there is a contrast of systems, P-N as well as of terms, p-t and k-t in the SS stems but there is no such contrast in the RS stems. There is no difference between the SS and RS

stems in the V system and syllable prosody.

7.2.1.3 Conjug. 3

There is only one stem of conjug.3 that needs to be included in the analysis of RS stems, namely the stem ja-.

ja-

It was said in the third chapter that ja- is an irregular stem which occurs as gi- in past forms and gih- in non-past perfective forms. In RS, the stem that occurs in the non-past perfective is gi:- where the structure is CV. The C system is P with the term k and it is described in relation to h prosody.

e.g. ʰPᴋV gi:lla "has/have gone"

The phonological structure given for the SS stem is as follows:

ʰPᴋVSʔ gihilla "has/have gone"

Thus, there is a contrast of systems, P-S as well as of terms, k-ʔ in the SS stem but there is no such contrast in the RS stem. There is no difference between the SS and RS stem in the V system and syllable prosody and the difference in length is discussed in the analysis of the conjug. marker.

According to the analysis given above, compared with the SS analysis, it is possible to say that certain C systems which occur finally in SS stems, are absent in RS. They are as follows: the N system with the terms p and t, the L system with the terms p, t, and č and the S system with the term ʔ .

The N system with the term t is absent in the following context: ɑʷ- ɪʸ, ɛʸ-ɛʸ. The N system with term p is absent in the following context: ɑʷ-ɛə. The L system with the term p is absent in the following context: ɛʷ-ɛə. The L system with the term t is absent in the following context: ɑʷ-ɛə, ɑʸ-ɪʸ. The L system with the term č is absent in the following context: ɪʸ-ɛə.

The S system with the term ʔ is absent in the following context: ɪʸ-ɪʸ.

7.2.2 Phrasal verb stems

It was said in the fourth chapter that phrasal verbs are a composite of two elements in which the first element could be a non-free morpheme, a loan stem, an onomatopoeic stem, a noun stem, an adjective stem or a simple verb form and the second element is a simple verb of the type discussed in the third chapter. The difference between RS and SS phrasal verbs mainly depends on the second part of the phrasal verb. Therefore, the discussion of the simple RS verbs given above applies here as well. For instance, the parallel RS phrasal verb of the SS phrasal verb visikərənəva is visikə͡rna:. Thus, the first element visi remains unchanged in both RS and SS and the difference is in the second part. There are, however, a few points to be considered here.

It was stated in the fourth chapter that kər-, ve- and gan- are the most common stems of simple verbs used in phrasal verbs. The stem kər- is the same in RS phrasal verbs as in SS phrasal verbs. The shape of the other two stems when occurring in RS, however, depends on the preceding element of the phrasal verb.

ve-

The structure of the given stem is CV. The C system is L and the term is p. The V system is ∈ and the stem is y prosodic.

e.g. $L_{t}\in^{y}$ venəva "happen"

In RS when the first stem of a phrasal verb ends in a C system, the initial C system of ve- harmonizes with the preceding C system.

e.g. $CVCVP_{t}+P_{t}V+CV$ mahattena: "becomes big"
$VS_{t}+S_{t}V+CV$ ussena: "becomes high"

The phonological structure given for the SS stem is as follows:

e.g. $CVCVP_{t}+L_{p}V+CVCV$ mahatvenəva "becomes big"
$VS_{t}+L_{p}V+CVCV$ usvenəva "becomes high"

However, when the first element ends in a V system which is w

the form of the stem ve- is e-, ɛʸ, with no initial C system.

e.g. CVCVCV+ɛʸ+CV vakuṭuena: "curl"

VCVCV+ɛʸ+CV ekəṭəena: "come together"

There is no difference between the RS and SS stems in the V systems and syllable prosody in the examples given above. Nevertheless, when the final V system of the first element of the phrasal verb is ɛ and the syllable is ə prosodic it harmonizes prosodically with ɛʸ and a syllable with long length prosody results, ekəṭe:na:, VCVCɛʸCV. The SS stem is ekəṭəven va, VCVCɛ L_PɛʸCVCV, Thus, in this case, the RS stem has fewer syllables and fewer contrasts of prosodies than the SS verb stem.

gan-

This simple verb stem is very common in reflexive phrasal verbs. In SS the stem structure is CVC. The parallel RS stem of gan- is n- with the structure C. The C system is N with the term t.

e.g. N_t kapa:nna: "cut for oneself"

The phonological analysis given for the SS stem is as follows:

e.g. $_bP_kVN_t$ kapa:gannəva "cut for oneself"

Thus, there is a contrast of systems, P-N as well as of terms, k-t in the SS stem but there is no such contrast in the RS stem. There is no V system in the RS stem and therefore, as far as the whole stem (the first and the second elements) is concerned, the RS stem has fewer syllables than the SS stem.

7.3 Affixes

It was said in the fifth chapter that affixes could be suffixes, prefixes or infixes. As far as the RS affixes are concerned, only certain suffixes and the causative infix are involved. These are considered below.

7.3.1 Suffixes

There are about thirty three suffixes that occur in verb forms. Of these seven have been observed to have one shape in SS and another in RS. They are as follows: -nəva, -ahamə,-aiŋ, -koṭə, -kaŋ, -nne and -nnaŋ. -nə͡va is the non-past general suffix and -nne is the non-past emphatic suffix; both belong to the Indicative Mood. -nnaŋ is the permissive suffix of the Imperative Mood. The others, namely, the Prior Temporal 1 suffix -ahamə , the Prior Temporal 2 suffix -aiŋ, the Contemporaneous suffix -koṭə, and the Limitative suffix -kaŋ, which are traditionally called non-finite verbs occur in complex sentences.

7.3.1.1 Non-past general suffix

The non-past general suffix is -nəva and the suffix structure is CVCV. The parallel RS suffix is -na: the structure is CV. The C system of the CV structure is N with the term t.

e.g. N_tV kapəna: "cut"

The phonological structure given for the SS suffix is as follows:

N_tVL_pV kapənəva "cut"

Thus, there is a contrast of systems,N-L as well as of terms, t-p in the SS suffix but there is no such contrast in the RS suffix.

The V system of the RS suffix is α and the syllable is w prosodic. Length prosody is long.

e.g. $C\ddot{a}^w$ kapəna: "cut"

The phonological structure given for the SS suffix is as follows:

$C\epsilon^əC\alpha^w$ kapənəva "cut"

There is also a contrast of systems ϵ - α, as well as of prosodies, ə - w in the SS suffix but there is no such contrast in the RS suffix. Length prosody of the SS suffix is short and that of the RS suffix is long. Furthermore, the SS suffix is

disyllabic and the RS suffix is monosyllabic.

7.3.1.2 Non-past emph. suffix

The non-past emph. suffix is -nne and the structure is CCV. The parallel RS suffix is -nn and the structure is CC. The C systems of both suffixes are NN with the terms t. As far as the V system is concerned, the phonological structure given for the SS suffix is as follows:

e.g. CCɛᵛ kapanne "cut emph."

Thus, the difference between the SS and RS stems is that the SS suffix has a V system but the RS suffix does not.

7.3.1.3 Permissive imperative A suffix

The permissive imperative suffix is -nnaŋ and the suffix structure is CCVC. The parallel RS suffix is -nna and the structure is CCV. The C systems of the RS suffix are N with the term t.

e.g. NNₜV kapanna "let me cut"

The phonological structure given for the SS suffix is:

NNₜVNk kapannaŋ "let me cut"

Thus, there is a contrast of terms,t-k in the SS suffix but no such contrast in the RS suffix. However, there is no difference between the SS and RS suffixes in the V systems and prosodies which are α^{w}.

7.3.1.4 Prior Temporal Suffix 1

The prior temporal suffix is -ahamə and the suffix structure is VCVCV. The parallel RS suffix is -ha:mə and the structure is CVCV. The C systems and terms of both SS and RS suffixes are $S_{\tilde{1}}N_{p}$ and do therefore need not to be discussed further. The contrast of the V systems is α-ɛ in both SS and RS. α functions in w prosodic syllable and ɛ functions in ə prosodic syllable. In RS, length prosody of the initial syllable is long and that of the second syllable is short; in SS all three syllables have short length prosody.

e.g. $C\bar{\alpha}_{w}C\phi^{\partial}$ kæpuha:ma "after cutting"

The phonological structure given for the SS suffix is as follows: $\alpha^{w}C\alpha^{w}C\phi^{\partial}$ kæpuvahama "after cutting"

Thus, there are three V systems in the SS suffix but only two in the RS suffix and there is no contrast of length prosody in the SS suffix but the initial and final syllables of the RS suffix have a contrast of long and short length prosodies respectively.

7.3.1.5 Prior Temporal Suffix 2

As is stated in the appendix, the prior temporal suffix occurs after the past completive general suffix -a as -aiŋ where the suffix structure is VVC. The parallel RS suffix is æ:ŋ and the suffix structure is VC. There is no difference between the SS and RS suffix structures in the C system and it will therefore not be discussed here. The V system of the RS structure is α and the syllable is y prosodic. Length prosody is long.

e.g. $\tilde{\alpha}^{y}C$ kæpuvæŋ (passe) "after cutting"

The phonological structure given for the SS suffix is as follows:

e.g. $\alpha^{w}\iota^{y}C$ kæpuvaiŋ (passe) "after cutting"

Thus, length prosody of the RS structure is long and that of SS structure is short. The SS suffix structure has a contrast of prosodies, w-y but there is no such contrast in the RS suffix which is y prosodic. The SS suffix structure is disyllabic and the RS suffix structure is monosyllabic.

7.3.1.6 Contemporaneous Suffix 2

The contemporaneous suffix 2 occurs obligatorily after the non-past participle as -nəkoṭə and these are treated as a single suffix here. The suffix structure is CVCVCV. The parallel RS suffix is -no:ṭə with the structure CVCV. The C systems of the initial and the final syllables of the CVCV structure are N with the term t and P with the term ṭ

respectively. The P system is described in relation to h prosody.

e.g. $N_tV^hP_{\dot{t}}V$ kapəno:ṭə "while cutting"

$N_tV^hP_{\dot{t}}V$ marəno:ṭə "while killing"

The phonological structure given for the SS suffix is as follows:

$N_tV^hP_kV^hP_{\dot{t}}V$ kapənəkoṭə "while cutting"

$N_tV^hP_kV^hP_{\dot{t}}V$ marənəkoṭə "while killing"

Thus, there is no difference between the SS and RS suffixes in the contrast of C systems, namely, N-P but there is a difference in the contrast of terms: the SS suffix structure has a contrast of three terms, t-k-ṭ but the RS suffix structure has only a contrast of two terms, t-ṭ.

The V system of the RS suffix structure is ϵ and it functions in w and ə prosodic syllables. Length prosody of the first syllable is long and that of the final syllable is short.

e.g. $C\bar{\epsilon}^wC\epsilon^ə$ kapəno:ṭə "while cutting"

$C\bar{\epsilon}^wC\epsilon^ə$ marəno:ṭə "while killing"

The V systems and syllable prosodies of the SS suffix structure are:

$C\epsilon^əC\epsilon^wC\epsilon^ə$ kapənəko͡ṭə "while cutting"

$C\epsilon^əC\epsilon^wC\epsilon^ə$ marənəkoṭə "while killing"

Thus, in the SS suffix w prosody contrasts with the preceding and following ə prosodies but in the RS suffix w prosody contrasts only with the following ə prosody. Length prosody of the SS suffix is short but that of the RS suffix has a contrast of long or short. Furthermore, the SS suffix is trisyllabic and the RS suffix is disyllabic.

7.3.1.7 Limitative Suffix

The limitative suffix, -kaŋ occurs obligatorily after the non-past participle suffix -nə as -nə͡kaŋ and these are treated as single suffix. The structure is CVCVC. The parallel RS suffix is -na:ŋ with the structure CVC. The C initial and final systems of the RS suffix are N with the terms

t and k respectively.

e.g. N_tVN_k kapənaːŋ "until...cut"

N_tVN_k marənaːŋ "until...kill"

The phonological structure given for the SS structure is:

$N_tV^hP_kVN_k$ kapənəkaŋ "until...cut"

$N_tV^hP_kVN_k$ marənəkaŋ "until...kill"

Thus, there is a contrast of systems,P-N as well as of terms, t-k in the SS suffix structure but there is no contrast of systems in the RS structure even though there is a contrast of terms,t-k.

The V system of the RS suffix structure is α and the structure is w prosodic. Length prosody is long.

e.g. $C\bar{\alpha}^wC$ kapənaːŋ "until...cut"

$C\bar{\alpha}^wC$ marənaːŋ "until...kill"

The V systems and prosodies of the SS suffix are:

$C\epsilon^əC\alpha^wC$ kapənəkaŋ "until...cut"

$C\epsilon^əC\alpha^wC$ marənəkaŋ "until...kill"

Thus, there is a contrast of V systems, ϵ-α as well as of prosodies, ə-w in the SS suffix structure but there are no such contrasts in the RS suffix structure.

7.3.2 The Causative Infix

It was stated in the fifth chapter that the structure of the causative infix, -ve- is CV, and the nature of the C system depends on the stem final C system. The parallel RS infix is -o: with the structure is V, when it occurs in non-past general and non-past perfect forms. The V system is ϵ and the syllable is w prosodic. Length prosody is long.

e.g. $\bar{\epsilon}^w$ kapoːnaː "cause to cut"

$\bar{\epsilon}^w$ maroːnaː "cause to kill"

The phonological structure given for the SS infix is as follows:

$C\epsilon^ə$ kapəvənəva "cause to cut"

$C\epsilon^ə$ marəvənəva "cause to kill"

Thus, the V system of the both infixes is the same. However,

the SS infix is ə prosodic but the RS infix is w prosodic and there is a difference of length prosody. Also the SS infix has a C system whereas the RS infix does not, in other words, the structure of the SS infix differs from that of the RS infix.

According to the discussion given above, compared with the SS stems, the following C and V systems are absent in RS. The P system with the k term is absent in the following context: $\epsilon^{ə}$-α^{w}/ϵ^{w}. When this happens the preceding V is also absent and length prosody of the following syllable, if short in SS, is long. The L system with the term p is absent in two contexts, $\epsilon^{ə}$- $\epsilon^{ə}$and $\epsilon^{ə}$- α^{w}. In the case of the first context the preceding V is also absent and length of the following syllable is long. In the second case also the preceding V system is absent. Apart from that, prosody of the syllable is w which is ə in SS. The N system with the term k is absent in the following context: α^{w}-#. $\alpha^{w}\iota^{y}$ occurs in SS and $\bar{\alpha}^{y}$ occurs in RS the following context: L_{p}-N_{k}. α^{w} is absent in the following contexts: NN_{k}-# , #-S_{p}.

7.4 The presence and absence of the conjugation marker

It was said in the sixth chapter that the conjugation marker is always present in the forms of conjug.1. However, the following forms of conjug.1 do not have the conjug. marker in RS.

1.) The non-past perfective forms where the final C of the stem is the M system with ṭ, the N system with t or the L system with t or ṭ.

e.g.	SS		RS	
VMṭ-$\epsilon^{ə}$- CV	aḍ̃ə̲la	VM-CV	aḍ̃la	"has/have cried"
VN$_{t}$-$\epsilon^{ə}$-CV	anə̲la	VN-CV	anla	"has/have mixed"
VLL$_{t}$-$\epsilon^{ə}$-CV	allə̲la	VLL-CV	allla	"has/have caught"
VL$_{t}$-$\epsilon^{ə}$-CV	kəra̲la	VN-CV	kər-la	"has/have done"

2.) The forms of vaṭ- :

e.g.	SS		RS	
CVC-ɪʷ-CV	væṭuna	CVC-CV	væhna	"fell"
CVC-ɪʷ-CV	væṭune	CVC-CV	væhne	"fell emph."
CVC-ɪᵛ-CV	væṭila	CVC-CV	væhla	"has/have fallen"

3.) The imperative form of kap- :

e.g.	SS		RS	
CVC-ɛᵊ-CVC	kapəpaŋ	CVC-CVC	kappaŋ	"has/have cut"

4.) The non-past perfective form of kij- :

	SS		RS	
e.g.	CV-ɛᵊ-CV	kijəla	CV-CV	ki:la "has said"

5.) The non-past volitive forms of dam- :

e.g.	SS		RS	
CVC-ɛᵊ-CVCV	damənəva	CV-CV	da:na:	"put"
CVC-ɛᵊ-CV	damәla	CV-CV	da:la	"has/have put"
CVC-ɑʷ-CCV	damaṇḍə	CV-CCV	da:ṇḍə	"to put"
CVC-ɑw-CCV	damaddi	CV-CCV	da:ddi	"while putting"

6.) The volitive imperative form of bal- :

e.g.	SS		RS	
CVC-ɑʷ-CCV	balaṇḍə	CV-CCV	ba:ṇḍə	"to look at"

7.5 Length Relationship

It was said in the sixth chapter that two adjacent syllables in simple verbs may not have long length. In RS forms, however, two adjacent syllables can have long length prosody.

e.g.		
	CVC$\bar{V}$C$\bar{V}$	maro:na: "cause to kill"
	CVCC$\bar{V}$C$\bar{V}$	kappo:na: "cause to cut"

7.6 Prosodic harmony

It was stated in the discussion of the systematic prosodic relationship between past and non-past volitive verb stems, in the sixth chapter, that all syllables of stems belonging to group D were w prosodic when they occurred in non-past forms and y prosodic when they were in past forms. In RS, however, the initial syllable of the stem is y prosodic and the second syllables is w prosodic when it occur in past forms. In this case, it seems the second syllable harmonizes prosodically with the following syllable in which V (the conjug. marker) is ɩ and the syllable is w prosodic.

e.g.	SS	
αʸCɩʸC	ækiluva	"folded"
ʸCɩʸCC	igilluva	"pulled out"
CαʸCɩʸC	mætiruva	"charm"
αʸCɩʸC	ætiruva	"spread"
	RS	
αʸC ɩ ʷC	ækuluva	"folded"
ʸC ɩ ʷCC	igulluva	"pulled out"
CαʸCɩʷC	mæturuva	"charmed"
αʸC ɩ ʷC	æturuva	"spread"

As a result of this harmony the second syllable of the RS stem has w prosody where there is y prosody in the SS stem. However, the V system of the syllable is the same.

7.7 The main differences between SS and RS forms

Rapid forms differ from slow forms in several ways: 1) in length: the structures of RS forms may be shorter than those of SS forms, 2) they may differ from SS forms in syllable type, 3) they differ from SS forms in syllable prominence, 4) there are fewer syntagmatic contrasts in RS forms, 5) they differ from SS forms in the possibility of having syllabic C system and 6)

absence of the cojug. marker.

1) Length differences

RS verb forms can be shorter than SS verb forms in four ways:(i) by one C, (ii) by one V, (iii) by one CV syllable or (iv) by more than one syllable.

(i) RS shorter by one C:

e.g.	SS	
CVCCVC	jannaŋ	"let me go"
CVCCVC	kannaŋ	"let me eat"
	RS	
CVCCV	janna	"let me go"
CVCCV	kanna	"let me eat"

(ii) RS shorter by one V:

e.g.	SS	
CVCVCV	kərəla	"has/have done"
CVCVCV	vəṭila	"has/have fallen"
	RS	
CVCCV	kərla	"has/have done"
CVCCV	vəhla	"has/have fallen"

(iii) RS shorter by one syllable:

e.g.	SS	
CVCCVCV	gannəva	"take"
CVCCVCV	dannəva	"know"
	RS	
CVCC$\bar{V}$	ganna:	"take"
CVCC$\bar{V}$	danna:	"know"

(iv) RS shorter by more than one syllable:

e.g.	SS	
CVCVCVCVCV	kərəvənəva	"cause to do"
CVCVCVCVCV	marəvənəva	"cause to kill"

RS

CVCV̄CV̄	kəro:na:	"cause to do"
CVCV̄CV̄	maro:na:	"cause to kill"

2) Syllable type

RS forms may differ from SS forms in syllable type. For example, in the following SS verb forms all syllables are CV type but RS verb forms have CVC type syllables as well.

e.g.

SS

CV-CV-CV	kərəla	"has/have done"
CV-CV-CV	bələla	"has/have looked at"

RS

CVC-CV	kərla	"has/have done"
CVC-CV	balla	"has/have looked at"

3) Syllable prominence

RS verb forms may differ from SS verb forms in syllable prominence. For example, the first syllable of the following verb is stressed in SS:

ˈCVCVCVCVCV marəvənəva "cause to kill"

But in RS the second syllable is stressed.

e.g. CVˈCVCV maro:na: "cause to kill"

Syllable prominence, as was discussed in the second chapter, depends on several factors, two of them being syllable length and type. When the syllable length and structure of RS verb forms differ from those of SS, the place of the stressed syllable may also differ.

e.g.

SS

ˈCVCVCV	janəva	"go"
CVˈCVCCV	tibiččə	"be (past participle)"
ˈCVCVCVCVCV	bələvənəva	"cause to look at"

RS

CVˈCV	jana:	"go"
ˈCV̄CCV	ti:ččə	"be (past participle)"
CVˈCV̄CV̄	balo:na:	"cause to look at"

4) Difference in number of syntagmatic contrasts

As has been pointed out throughout the foregoing account of RS forms they have fewer contrasts of C systems, V systems, terms and prosodies than SS forms. As an example, one may take the non-past general suffix, -nəva. As was discussed on page 2-34, in SS this has a contrast of two systems, N-P as well as of two terms, t-p. The RS suffix has only one system, N and one term, t. As far as the V systems are concerned, the SS suffix structure has a contrast of two V systems, ∈ and α and the RS suffix has only one V system, α. The SS suffix has a contrast of two prosodies, ə-w but there is no contrast of prosodies in the RS suffix as it is w prosodic.

5) Syllabic consonants

As stated in the second chapter, only V units are syllabic in SS verb forms. In RS, however, some consonants, phonetically speaking, alveolar nasal [n] and alveolar lateral [l] can be syllabic.

e.g

	[n]	
gann	[gann̩]	"take (emph.)"
jann	[jann̩]	"go (emph.)"
	[l]	
allla	[alll̩a]	"has/have caught"
atullla	[atull̩a]	"has/have rubbed"

6. The presence and absence of the conjug. marker

RS forms may differ from the SS forms in the presence or absence of the conjugation marker. Examples were given in 7.4.

To summarize, in this chapter RS verb forms which differ from their parallel SS forms were described. First, stems were analyzed, secondly, suffixes were discussed, thirdly, a point

was made about phrasal verbs, fourthly, the presence and absence of the conjugation marker and prosodic harmony were considered and finally the main differences between SS and RS forms in structure, length, syllable prominence, etc., were discussed. The chapter shows that the phonology of RS forms differs from that of SS forms and that it is simpler than the phonology of SS forms. It was stated earlier that the difference between RS and SS depends on tempo. More linguistic material is produced within the same stretch of time in RS than in SS. For fast planning and production, RS needs to be less complex than SS phonetically and phonologically. The analysis given in this chapter provides evidence for this in relation to some Sinhalese verb forms.

SUMMARY AND CONCLUSIONS

Summary

The purpose of the thesis is to study the phonology of Sinhalese verb forms and their relation to slow and rapid styles. The theory used in the analysis is that of prosodic Phonology.

Chapter 1

This chapter deals with a general discussion of slow and rapid speech: nature, contexts and differences between them, the theory used in the analysis and the justification, nature of the data, procedure, informants, related linguistic research on Sinhalese, and how this research differs from that of others. An attempt was made to study styles in relation to speech situations and there I referred to related work done by others. Especially I discussed their definitions, views and the outcome of their work. In my discussion of the styles of Sinhalese, it is shown that the difference between slow and rapid styles depends on tempo. This is the first time, to the writer's knowledge that the rapid style of Sinhalese has been the subject of research.

Chapter 2

Chapter 2 consists of two parts, 1 and 2. Part 1 is an outline description of vowel and consonant sounds. There, physical characteristics of these sounds and their distribution are given. In the description of vowel sounds, simple vowels as well as diphthongs are discussed. Diphthongs had not previously been noted in Sinhalese verb forms. In the discussion of consonants, prenasalized plosives, double consonants, nasal plosive complexes and consonant clusters are

considered. Part 2 involves the discussion of the syllable: syllable structure, syllable quantity, syllable division and syllable prominence.

Chapter 3

Included in chapter 3 are an analysis of syllable structure of stems and an analysis of syntagmatic and paradigmatic contrasts of C and V systems and prosodies. The prosodic relationship between first and second syllables of disyllabic stems is also studied there. In the analysis, all possible stem structures and all possible patterns of each structure are given. It is shown that the monosyllabic stems, except the stem kəɾ- and the initial syllables of the disyllabic stems can be either y or w prosodic. The final syllable of the disyllabic stems can be y, w or ə prosodic. The ə prosodic syllables in disyllabic stems are predictable on the basis of the C initial and final systems of the second syllable. When the second syllable is not ə prosodic, it harmonizes with the initial syllable in terms of prosody. Thus, syllables are y-y or w—w prosodic or y-ə and w-ə under certain constraints.

Chapter 4

A phonological analysis of stems of phrasal verbs are given in the fourth chapter. There I have given three types of stem: non-free morphemes, onomatopoeic stems and loan stems. The same method which was followed in the analysis of simple stems is followed here as well. It is shown that the contrasts of C and V systems and prosodies of stems of one type differ from those of others. In CV type syllables of stems of non-free morphemes, length prosody is always long. There is no systematic prosodic relationship between the initial and non-initial syllables of polysyllabic stems of non-free morphemes.

Compared with simple stems analyzed in chapter 3, the M system which occurs in simple stems does not occur in non-free morphemes. In onomatopoeic stems, it is shown that there is a relationship between initial and non-initial syllables not only in y, w and ə prosodies but also in h and h̲ prosodies. As far as C systems are concerned, the systems which are rare at the C initial places of simple stems are very common at the C initial place of onomatopoeic stems. The M system does not occur in onomatopoeic stems either. It was said in the fourth chapter that loan stems which occur only in phrasal verbs are few in number. However, phonological structures of loan stems are very different from those of native stems. Tamil loan stems have retroflex sounds in double consonants which are not found in simple native stems and English and Sanskrit stems have consonant clusters which do not occur in native stems at all.

Chapter 5

In chapter 5, the phonological analysis of affixes which can be prefixes, infixes and suffixes is given. In the analysis of the causative infix, it is shown that the nature of the C system of the infix in non-past forms depends on the preceding consonant. It is also shown that the shape of the causative infix in non-past forms is different from that in past forms. The way in which the phonological systems of affixes differ from those of stems is also discussed there.

Chapter 6

Chapter 6 is divided to three parts, part 1, part 2 and part 3. Part 1 deals with conjug. marker and conjug. classes. In the past, what is treated as conjug. marker here, was considered to be part of the verb stem. Part 2 observes the relationship between non-past vol. and invol. stems and non-past and past vol. stems. It is shown in the analysis that

there is a systematic relationship between them. Included in part 3 are junction prosody systems, reduplication, the relationship between ϵ^{∂} and a^{w} and the length relationship.

Chapter 7

The phonological analysis of rapid verb forms is given in chapter 7. First, a list of verb stems which have one shape in SS and another in RS is given, then their phonological analysis follows. In the analysis, phonological structures of RS stems are compared with those of SS structures. The same method is followed in the analysis of RS affixes as well. The chapter also includes a discussion of the conjugation marker, the length relationship of RS forms, and the nature of some RS past stems. Under the title of "Differences between RS and SS verb forms" the main differences between RS and SS forms are discussed. The chapter indicates that the phonology of rapid forms is quite different from that of SS forms.

Appendix

A grammatical analysis of verb forms is given in the appendix. There, the verb is analyzed taking tense, aspect and mood into consideration. The so called non-finite verb forms are also discussed. The appendix includes discussion of over-lapping forms, the grammatical function of affixes, number and sequence of affixes, and shapes of stems in relation to grammatical categories of verb forms. A list of suffixes as well as a list of simple verbs is also given there. In the list of simple verbs, non-past vol., invol. and causative forms are given. I have followed the method used by Abhayasinghe (1973) in the analysis of tense, aspect and mood, but the rest is my own analysis.

Conclusions

Finally, in my view the major contribution of the thesis is that it has provided data and analyses of rapid style verb forms and verb forms with onomatopoeic stems and non-free morphemes, three aspects of Sinhalese which have not been studied before. The thesis also provides a much more detailed phonological analysis of Sinhalese verb forms than has hitherto been available and demonstrates various phonological relationships that had not been noted previously: the relationship between slow and rapid verb forms, between vol.and invol. stems and non-past and past vol. stems, the relationship between non-past and past conjug. markers and the relationship between first and second syllables of simple verb stems. The relationship between vol. and invol. stems had been examined in studies previous to this one, for instance, Wickramasinghe (1972) and Abhayasinghe (1973) but as the conjug. marker was taken as a part of the stem in such studies, the relationship shown was not very systematic. It is also shown in the analysis of disyllabic simple verb stems that they could be considered as combinations of monosyllabic stems. Otherwise, there is no difference between them in complexity of structures. Furthermore, because of the divided study into structures and patterns, it is possible to show that according to the analysis of simple verb stems, on the one hand, simple structures have many patterns and complex structures have few patterns, and on the other hand, simple patterns with relatively few contrasts have many stems and complex patterns with relatively more contrasts have few stems. Thus it is possible to say that stems with fewer contrasts would seem to require less planning in production and less complexity in storage and are therefore more economical as far as speech processing goes than stems with many contrasts. This suggests that if all stems had many contrasts, the vocabulary would have to be smaller than it is. This is shown in the analysis of English

child phonology (Waterson 1987) as well.

APPENDIX

The purpose of the appendix is to discuss the Sinhalese verb, taking aspect, tense and mood into consideration in order to give a picture of verb conjugation morphology as background to the analyses I have presented of verb stems, affixes, junction prosodies of stems and affixes, as well as certain predictable relationships of syllables and verb forms.

The Sinhalese verb can be divided into two major groups, volitive and involitive; both can be transitive and intransitive.

1. a) Vol. transitive

mamə gahak kæpuva
I a tree felled
"I felled a tree"

b) Vol. intransitive

malli aḍ̃ənəva
younger cry
brother
"Younger brother cries"

2. a) Invol. transitive

pihijəṭə kakulə kæpuna
to the knife the leg cut
"The leg was cut by the knife"

b) Invol. intransitive

maṭə æḍ̃enava
to me cry
"I cry accidentally"

Volitive verbs (both transitive and intransitive) are of two types: causative and non-causative. The examples given in 1. a) and b) are non-causative. Causative verbs which are

formed by adding -və - to the base forms are called single causatives. When they are formed by adding double causative suffixes (və+və) they are called double causatives.

Single causative

amma mallitə bat kavənəva
mother to younger rice cause
brother to eat
"Mother causes younger brother to eat"

Double causative

amma akka lavva mallitə bat kavəvənəva
mother elder with to younger rice cause to
sister help of brother eat
"Mother causes elder sister to cause
younger brother to eat rice"

Even though causative forms are mostly volitive there are some single involitive causatives as well. They are, however, few in number. The following verbs can be considered as involitive causatives.

æddenəva "to be caused to pull"
mirikəvenəva "to be caused to seize"
mærəvuna: "was caused to kill"
kæppenəva "to be caused to cut"

Tense

Verbs in Sinhalese have two tenses, past and non-past. The non-past can be sub-divided in accordance with reference to events at a) present, b) future, c) habitual and d) (eternal) timeless events. Past tense forms refer to events which took place in the past. Non-past tense forms are made by adding -nəva to non-past verb bases or stems and past tense verbs are formed by adding -a to past verb bases.

Non-past

a) Referring to events at present:

e.g. balla burənəva
the dog is barking
"The dog is barking"

b) Referring to events in the future:

e.g. mamə heṭə gedərə janəva
I tomorrow home going
"I am going home tomorrow"

c) Referring to habitual events:

e.g. sadudaṭə kaḍə vahanəva
to Monday shops close
"Shops are closed on (every) Monday"

d) Referring to (eternal) timeless events:

havəsəṭə irə bahinəva
in the evening sun sets
" The sun sets in the evening"

Past

As stated above, past tense forms refer to events which took place in the past.

e.g. amma polaṭə gija:
mother to the fair went
"Mother went to the fair"

Aspect

Two aspects are used in the non-past and there are three aspects in the past tense.

Non-past tense

Two aspects namely, 1) general and 2) progressive are found in the non-past tense:

1) General:

e.g. balla ku:ḍuvəṭə janəva
the dog to the cage go
"The dog goes to the cage"

2) Progressive:

e.g. balla ku:duvəṭə jamin innəva
the dog to the cage going be
"The dog is going to the cage"

Past tense

Past tense has three aspects namely, 1) completive, 2) progressive and 3) perfective.

1) Completive

The completive form can be sub-divided into two, namely, a) completive general and b) completive emphatic.

a) Completive general:

e.g. api kæ:va
we ate
"We ate"

b) Completive emphatic:

e.g. bat okkomə ballo ka:pi
rice all dogs did eat up
"The dog did eat up all the rice"

2) Progressive

Progressive forms are formed by reduplicating the non-past base followed by [hiṭija] or [unna] obligatorily.[1]

e.g. minissu bat kaka: unna
people rice eating were

[1] Reduplication is discussed in chapter 6.

"People were eating rice"

3) Perfective

Perfective verbs are formed by adding -la to the verb stem which is then followed by the verb [tijənəva].

e.g. mamə ãbə ka:la tijənəva
I mangoes eaten be
"I have eaten mangoes"

Before going on to discuss moods it is necessary to make a special statement about vol., invol. and causative verbs and tenses.

Vol., invol. and causative forms

As was stated earlier in this chapter, verbs generally have vol. invol. and causative forms. It, however, does not follow that all verbs have those three forms, for example, some verbs have vol. forms only. On the basis of the presence or absence of vol. invol. and causative forms, verbs can be grouped into four classes, 1, 2, 3 an· 4.

Group 1

Verbs in group 1 have vol. invol and causative forms.

e.g.	Vol.	Invol.	Causative
	kapənəva	kæpenəva	kappənəva
	"cut"	"is cut"	"cause to cut"
	naṭənəv	næṭenəva	naṭəvənəva
	"dance"	"dance accid."	"cause to dance"

Group 2

Verbs in group 2 have vol. and causative forms only.

e.g.	Vol.	Causative
	dannəva	dannənəva
	"know"	"inform"

innəva	indənəva
"stay"	"cause to stay"

Group 3

Verbs in group 3 have invol. and causative forms only.

Invol.	Causative
ridenəva	ridəvənəva
"hurt"	"cause to hurt"
hinæhenəva	hinassnəva
"laugh"	"cause to laugh"

Group 4

Group 4 has two sub-groups, a) and b);

a) All verbs in this sub-group are vol.

e.g.

vaṭinəva	"value"
obinəva	"suit"
galənəva	"match"

b) All verbs in this sub-group are invol.

dænenəva	"feel"
tævenəva	"sorry"
ælenəva	"stick"

Tenseless forms

There are some verbs which do not have past tense forms. As they have only non-past tense forms, I call them tenseless forms. Some of them are given below:

dannəva	"know"
vaṭinəva	"value"
obinəva	"suit"
bummənəva	"stay in a bad mood"
dojjənəva	"sleep"

Overlapping forms

Verbs with overlapping forms may be divided into two groups,

1 and 2.

Group 1

Verbs in group 1 have two shapes, vol. shape and invol. shape but both have invol. meaning. They are non-past forms and are used in free-variation.

e.g. varədinəva /værədenəva "mistake"
pu:dinəva/pi:denəva "blossom"

Their past tense forms, however, have only invol. shape.

Group 2

Verbs in group 2 have vol.and invol. shapes where both have the same meaning not only in the non-past tense but also in the past tense.

	Non-past tense	
e.g.	pupurənəva/pipirenəva	"explode"
	uturənəva/itirenəva	"overflow"
	Past tense	
	pipiruva/pipiruna	"exploded"
	itiruva/itiruna	"overflowed"

Mood

Seven moods are given for Sinhalese verb forms, namely,

1. Indicative
2. Imperative
3. Benedictive
4. Inferential
5. Possibility
6. Ability
7. Certainty

1. Indicative mood

Most of the forms of this mood, namely, past tense completive, progressive and perfective, and non-past

tense general and progressive, have already been considered under tense and aspect. However, emphatic forms which have not been discussed there are given below. They are of two types, namely, non-past emphatic and past general emphatic; non-past emphatic forms are formed by adding -nne to the non-past base and those of past tense are formed by adding -e to the past tense base. The word order of emphatic sentences is S+V+O while in all other non-emphatic sentences it is either S+O+V or S+V+O.

Non-past emphatic forms:

e.g. mamə kanne bat
I eat (emph.) rice
"It is rice that I eat"

Past general emphatic forms:

e.g. mamə kæ:ve bat
I ate rice
"It is rice that I ate"

2. Imperative mood

Imperative sentences are used to urge, command, request or instruct the hearer to act in the required manner. Imperative sentences are grouped into two: simple and permissive. Three grades namely, honorific, ordinary and non-honorific are required to be stated for the simple imperative sentences. All three have singular and plural forms; plurality is indicated by ø and -la.

Simple

1) Honorific:

Honorific imperatives are used in situations where the speaker asks the hearer or hearers politely to do something. These are formed by adding -ɳḍə to the verb bases.

e.g.

Sg.		Pl.
kapaṇḍə		kapaṇḍəla
oja:	gas	kapaṇḍə
you	trees	fell

"You fell trees"

2) Ordinary:

Ordinary imperatives are used in situations where the speaker asks the hearer or hearers to do something in a neutral manner. They are formed by adding -nəva to verb stems.

e.g.

Sg.		Pl.
kapənəva		kapənəvala
tamuse	gas	kapənəva
you	trees	fell

"You fell trees"

3) Non-honorific:

Non-honorific imperatives are used in situations where the speaker, who is superior in status to the hearer, asks the hearer or hearers to do something. They are formed by adding -paŋ or -haŋ to verb bases.

e.g.

Sg.		Pl.
kapəpaŋ		kapəpaŋla
kapəhaŋ		kapəhaŋla
ũbə	gas	kapəpaŋ
you	trees	fell

"you fell trees"

Permissive:

Permissive imperatives can be divided into three groups: A, B and C. Those in group A are used in situations where the speaker requests or proposes that the hearer permits or allows him (the speaker) to act. They are formed by adding -nnaŋ to verb bases. Those in group B are used in situations where the speaker proposes that the hearer should act with him. They are formed by adding -mu to verb bases. Those in group C.

are used in situations where the speaker commands, requests or proposes that the hearer permit or allow a third person to act. They are formed by adding either -deŋ or -a:ve to past participles or past completive forms.

Group A:

e.g. mamə gas kapannaŋ
I trees let fell
"Let me fell trees"

Group B:

e.g. api gas kapəmu
we trees let cut
"Let us fell trees"

Group C:

e.g. eja: gas kæpuvə͡deŋ/kapəpudeŋ
he trees let fell
"Let him fell trees"
eja: gas kæpuva:ve/kapəpuva:ve
he trees let fell
"Let him fell trees"

The suffix -ko is added to the given imperative forms to emphasize the action. For instance, kapənəvako, kapaṇḍəko, kəpə pallako.

3.The Benedictive mood

Verbs in benedictive mood express the idea of "may it be" and they are formed by adding -paŋ to verb bases, except the stem, ve-, to which the suffix -aŋ is added. However, verbs having this mood are few in number.

e.g. mage amma nivaŋ dækəpaŋ
my mother Nirvana may attain
"May my mother attain Nirvana"

mage amma budu vejaŋ
my mother Buddhahood may attain
"May my mother attain Buddhahood"

4.The Inferential mood

Verbs in inferential mood express the idea of "may do". They are formed either by adding puluvaŋ or iḍə tijənəva to infinitive forms, or -i to verb bases.

e.g. ta:tta gas kapaṇḍə puluvaŋ
father trees to fell may
"Father may fell trees"
ta:tta gas kapaṇḍə iḍətijənəva
father trees to fell may
"Father may fell trees"
ta:tta gas kapai
"Father may fell trees"

5. The Possibility mood

The idea of possibility, like the Inferential mood, is expressed by adding puluvaŋ to infinitive forms.

e.g. eja: heṭə gas kapaṇḍə puluvaŋ
he tomorrow trees cut possible
" It is possible for him to cut
trees tomorrow"

6. The Ability mood

The idea of ability, again, is expressed by adding puluvaŋ to infinitive forms. The difference between the Possibility and the Ability moods depends on the context.

e.g. eja:ṭə gas kapaṇḍə puluvaŋ
to him trees to fell can
"He can fell trees"

7. Modality of certainty

The idea of "must" is expressed when

o:næ occurs with infinitives, as infinitive+o:næ.

e.g. oja: gas kapaṇḍə o:næ
you trees to fell must
"You must fell trees"

Other Verb Forms

The following verb forms are also considered here as they form a part of the grammar on which my analysis is based.

1. Conditional forms

Conditional forms which express the idea of "of" are formed by adding either -tot to non-past verb bases or -ot to past verb bases.

Non-past

e.g. oja: gas kapətot mamə kuṭṭi kərənəva
you trees if..fell I pieces do
"If you fell trees I will cut them into pieces"

Past

e.g. oja: gas kæpuvot mamə kuṭṭi kərənəva
you trees if..fell I pieces do
"If you fell trees I will cut them into pieces"

2. Concessive Forms

Concessive forms which express the idea of "even if" are formed by adding either -tat to non-past verb bases or -at to past verb bases.

Non-past

e.g. oja: gas kæpətat mamə iranne næ:
you trees even if fell I saw not

"I will not saw trees even if you fell them"

Past

oja: gas kæpuvaṭə mamə iranne næ:
you trees even if cut I saw not
"I will not saw trees even if you fell them"

3. Prior Temporal Forms

Prior temporal forms which express the idea of "after" are of two types, A and B.

Type A:

Type A are formed by adding -ahamə either to past verb bases or to past completive participles.

e.g. mamə gas kapəpuvahamə/kapəpuvahamə
I trees after felling
oja: lorijəṭə paṭəvaṇḍə
you to the lorry load
"After I have felled trees you load them in the lorry"

Type B:

Type B are formed by adding -iŋ to past general forms followed by passe.

e.g. oja: gas kæpuvaiŋ passe mam ennaŋ
you trees felling after I shall come
"I shall come after you have felled trees"

4. ṭə Forms

When suffix -ṭə is added to non-past and past general forms, the meaning may be "before", "after" or "for" depending on the following words of the sentence.

Non-past

kæpuvaṭə passe gas aiŋkəraṇḍə
to cut after trees remove
"After trees have been felled remove them"

Past

oja: gas kapənəvaṭə mamə kæməti:
you trees to cut I like
"I like your felling of trees"

5. Contemporaneous Forms

Contemporaneous forms which express the idea of "when" are of two types, A and B.

Type A:

These are formed by adding -ddi or -ddiŋ to non-past verb bases.

e.g. minissu gas kapaddi væssa
people trees when rained
felling
"It rained when people were felling trees"

Type B:

These are formed by adding -koṭə to non-past participles.

e.g. eja: gas kapənəkoṭə mamə ekətukeruva
he trees when felling I collected
"When he was felling trees I collected them"

6. Limitative Forms

Limitative forms which express the idea of "until" are

formed by adding -kaŋ to non-past participles.

e.g. oja: gas kapənəkaŋ mamə innaŋ
you trees until fell I shall stay
"I shall wait until you fell trees"

7. Participles

These are of two types, namely, non-past and past. Past participles can further be sub-divided into A) past completive general and B) past completive emphatic.

Non-past

In non-past participles -nə is added to non-past verb bases.

e.g. gas kapənə minissu a:va
trees felling people came
"The people who fell trees came"

Past

A) Past completive general:

In past completive general -ə is added to past verb bases when they are vol. and -nə and -nu to bases when they are invol.

Volitive:

e.g. gas kæpuvə minissu a:va
trees felled people came
"The people who felled trees came"

Involitive:

e.g. kæpunu/kæpunə gas lorijəṭə paṭəvaṇḍə
felled trees in the lorry load
"Load the trees which were felled into the lorry"

b) Past completive emphatic:

In past completive emphatic participles -pu is added to non-past verb bases when they are volitive and -ččə or -čči to invol. verb bases when they are involitive.

Volitive:

e.g. gas kapəpu minissu a:va
trees felled people came
"The people who did fell trees came"

Involitive:

kæpiččə/kæpičči gas lorijəṭə paṭəvaṇḍə
felled (emph.) trees in the load
lorry
"Load the trees which were felled into the lorry"

8. Base forms

The base forms can be past or non-past.

Non-past base forms:

It was stated in the analysis of the conjug. marker of non-past perfective forms that in conjug. marker of stems of conjug.s 1 and 2 is ϵ and the syllable is ə prosodic. Stems having this conjug. marker are treated as non-past base forms. Stems belonging to conjug. 3 and 4 are themselves treated as non-past base forms. As was noted above many suffixes are added to non-past base forms.

Past base forms:

It was said in chapter 6 that the conjug. marker of past stems of conjug. 1 and 2 is ι and the syllable is w prosodic. Stems having this conjug. marker is treated as past base forms. Stems belonging to conjug. 3 and 4 are themselves reated as past base forms. As was noted above, some suffixes,

fof instance, -ahamə is added to past base forms.

suffixes

There are about 33 suffixes which occur in Sinhalese verb forms. They are given below:

-nəva	-ddiŋ	-tot	-ddi	-ot	-la	-i
-koṭə	-nnaŋ	-tat	-čči	-at	-mu	-e
-pijə		-deŋ	-ččə	-iŋ	-pu	-u
		-paŋ	-nne	-aŋ	-pi	-a
		-haŋ	-ndə		-ṭə	-ə
		-kaŋ			-ko	
					-nə	

-ahamə

Of these the following three suffixes are found only in invol. forms: -čči,-ččə and -aŋ.

Number and sequence of suffixes occurring in verb forms

A verb can contain one, two or three suffixes.

e.g. kapəla "has/ have cut"
kæpuva-iŋ "after cutting"
kapa-ndə-la-ko "do cut"

Infixes

There are three infixes, causative marker, conjugation marker and past invol. marker. The conjug. marker occurs 1) between stem and suffix, 2) between stems and causative marker, and in the past invol. 3) between stem and past invol. marker.

1) Between stem and suffixes:

e.g. kapənəva "cut"
ihinəva "sprinkle"

2) Between stem and the causative marker:

e.g. kapə̲vənəva "cause to cut"
marə̲vənəva "cause to kill"

3) Between stem and past invol. marker:
kæpu̲na "was cut"
mæru̲na "was killed"
The causative marker occurs between the conjug. marker and suffixes when the conjug. marker is present.
e.g. kapəv̲ənəva "cause to cut"
marəv̲ənəva "cause to kill"
When the conjug. marker is absent, the causative marker occurs between stem and suffixes:
e.g. kav̲ə̲nəva "cause to eat"
na:v̲ə̲nəva "cause to bathe"
The past invol. marker occurs between the conjug. marker and suffixes:
e.g. kæpu̲na "was cut"
mæru̲na "was killed"

The verb kap- is used to illustrate all vol. and invol. inflexional forms.

	Vol.	Invol.
Non-past general:		
	kapənəva "cut"	kæpenəva
Past general:		
	kæpuva "cut"	kæpuna
Non-past perfective:		
	kapəla "has/have cut"	kæpila
Past completive emph.		
	kapəpi "did cut"	kæpičči
Past general emph.		
	kæpuve	kæpune
	"that is what cut"	

Infinitive;

kapaṇdə	"to cut"	kæpeṇdə

Imperative (permissive A):

kapannaŋ	"let me cut"	kæpennaŋ

Imperative (permissive B):

kapəmu	"let us cut"	kæpemu

Imperative (permissive C):

kæpuvədeŋ	"let him cut"	kæpunədeŋ
kæpuva:ve	"let him cut"	kæpuna:ve

Imperative (non-honorific sg.):

kapəpaŋ	"do cut"	-
kapəhaŋ	"do cut"	-

Imperative (non-honorific pl.):

kapəpijau	"do cut"	
kapəpalla	"do cut"	-
kapəhalla	"do cut"	-

Conditional (non-past):

kapətot	"if cut"	kæpetot

Conditional (past):

kæpuvot	"if cut"	kæpunot

Concessive (non-past):

kapətat	"even if cut"	kæpetat

Concessive (past):

kæpuvat	"even if cut"	kæpunat

Prior temporal 1:

kæpuvahamə	"after cutting"	kæpunahamə

Prior temporal 2:

kæpuvaiŋ	"after cutting"	kæpunaiŋ

Contemporaneous 1:

kapaddi	"while cutting"	kæpeddi
kapaddiŋ	"while cutting"	kæpeddiŋ

Contemporaneous 2:

kapənəkoṭə	"while cutting	kæpenəkoṭə

Limitative:

kapənəkaŋ	"until cut"	kæpenəkaŋ

Non-past participle:

kapənə	"cutting"	kæpenə

Past general part:

kæpuvə	"cut"	kæpunə/kæpunu

Past emph. participle:

kapəpu	"did cut"	kæpiĉĉə/kæpiĉĉi

-ṭə form:

kæpuvaṭə (passe) "after cutting" kæpunaṭə

According to the forms given above the stem has two shapes, 1 and 2. Shape 1 is kap- and shape 2 is kæp-. Shape 1 occurs in the following forms: vol. non-past general forms, non-past emph. forms, vol. infinitive forms, vol. imperative forms, vol. non-past conditional forms, vol. non-past concessive forms, vol. conpemporaneous, non-past perfective forms, vol.non-past part. and past emph. participle.

Shape 2 occurs in the following forms: invol. non-past general forms, invo. infinitive forms, invol. imperative forms, vol. past general forms, invol. past general forms, vol. past conditional forms, invol. past conditional forms, vol. past concessive forms, invol. past concessive forms, prior temporal forms, invol. cotemporaneous forms, invol. non-past emph. forms, vol. past emph.forms, invol. past emph. forms, vol. past general participle, invol. past general participle and invol. past emph. participle.

A list of simple verbs used in the analysis in this thesis is given below. In the list, vol., invol. and causative forms of non-past general are given. However, as was said above, some verbs have forms of the three categories, some have only two forms some have just one form. Causative forms are vol. except for a very few which have invol. forms as well.

Conug. 1

Vol.	Invol.	Causative
apullənəva	æpillenəva	apulləvənəva
atullənəva	ætillenəva	atulləvənəva
-	addənəva (causative)	æddenəva
aṭəvənəva	æṭəvenəva	aṭəvəvənəva
akulənəva	ækilenəva	akuləvənəva
agullənəva	ægillenəva	agulləvənəva
anənəva	ænenəva	anəvənəva
amunənəva	æminenəva	amunəvənəva
ahurənəva	æhirenəva	ahurəvənəva
ahanəva	æhenəva	assənəva
avussənəva	ævissenəva	avussəvənəva
avulənəva	ævilenəva	avuləvənəva
allənəva	ællenəva	alləvənəva
ãbənəva	æ̃benəva	ãbəvənəva
ãbərənəva	æbəre͡nəva	ãbərəvənəva
ãdurənəva	-	-
ãdunnənəva	-	-
ãḍənəva	æ̃ḍenəva	ãḍəvənəva
ãg̃əvənəva	æg̃əvenəva	-
a:rənəva	-	-
a:d̃ənəva	æ:d̃enəva	-
ærələnəva	-	ærələvənəva
-	æg̃enəva	ag̃əvənəva
-	ælenəva	aləvənəva
bummənəva	-	-
burənəva	birenəva	burəvənəva
burələnəva	-	-
badənəva	-	-
balənəva	bælenəva	baləvənəva
dinənəva	-	dinəvənəva
dirənəva	-	-
dirəvənəva	-	-

dedərənəva	-	dedərəvənəva
dænenəva	-	-
duvənəva	divenəva	duvəvənəva
doḍəvənəva	deḍəvenəva	-
dovənəva	devenəva	-
dojjənəva	-	-
dapənəva	dæpenəva	dapəvənəva
dakkənəva	-	-
damənəva	dæmenəva	dammənəva
dannənəva	dænnenəva	dannəvənəva
dallənəva	dællenəva	dalləvənəva
darənəva	dærenəva	-
daG̃ələnəva	dæG̃ələnəva	daG̃ələvənəva
elənəva	-	eləvənəva
-	-	eləvənəva
-	erenəva	erəvənəva
-	e:denəva	e:dəvənəva
-	genenəva	gennənəva
gevənəvə	gevenəva	-
-	gevenəva	-
-	gævəsenəva	-
gotənəva	getenəva	gotəvənəva
gorəvənəva	gerəvenəva	-
gassənəva	gæssenəva	-
gahanəva	gæhenəva	gassənəva
galəpənəva	gæləpe‿nəva	galəpəvənəva
galənəva	-	-
galəvənəva	gæləvenəva	-
garənəva	gærenəva	garəvənəva
garaha‿nəva	-	-
ga:ṭənəva	gæ:ṭenəva	ga:ṭəvənəva
ga:vənəva	gæ:venəva	gavəvənəva

hitənəva	hitenəva	-
hiṭəvənəva	hiṭəvenəva	-
-	hikmenəva	hikməvənəva
-	hinæhenəva	hinassənəva
hevillənəva	hevillenəva	hevillәvənəva
helənəva	-	-
-	hæsirenəva	hasurəvənəva
-	hærenəva	harəvənəva
hojənəva	hevenəva	hojəvənəva
hollənəvə	hellenəva	holləvənəva
ho:dənəva	he:denəva	ho:dəvənəva
hu:llənəva	hi:llenəva	-
hapənəva	hæpenəva	-
happonəva	hæppenəva	-
hadənəva	hædenəva	hadəvənəva
hagissənəva	-	hagissəvənəva
hamənəva	-	-
halənəva	hælenəva	haləvənəva
ha:rənəva	hæ:renəva	ha:rəvənəva
-	idimenəva	idiməvənəva
-	idenəva	idəvənəva
-	igillenəva	iglləvənəva
indənəva	-	-
-	ihirenəva	ihirəvənəva
ihələnəva	ihəlenəva	ihələvənəva
-	ilippenəva	-
illənəva	illenəva	illəvənəva
irənəva	irenəva	irəvənəva
-	kipenəva	-
-	kimidenəva	kimidəvənəva
kirənəva	kirenəva	kirəvənəva
kijənəva	-	-

kijəvənəva	kijəvenəva	-
keləsənəva	keləsenəva	-
kæ̃dəvənəva	-	-
ku:ddənəva	ki:ddenəva	ku:ddəvənəva
kõdurənəva	kẽdirenəva	kõdurəvənəva
konittənəva	kenittenəva	konittəvənəva
kapənəva	kæpenəva	kappənəva
kaḍənəva	kæḍenəva	kaḍəvənəva
kaka:rənəva	kækæ:ren va	kaka:rəvənəva
kahanəva	kæhenəva	kassənəva
kalattənəva	kælættenəva	kalattəvənəva
-	kærəkenəva	karəkəvənəva
kãburənəva	kæ̃birenəva	kãburəvənəva
kərənəva	kerenəva	kərəvənəva
ka:rənəva	kæ:renəva	ka:rəvənəva
lijənəva	lijəvenəva	lijəvənəva
lijələnəva	-	-
lessənəva	-	-
lovənəva	-	-
-	midenəva	mudəvənəva
mirikənəva	mirikenəva	mirikəvənəva
mudənəva	-	-
moləvənəva	meləvenəva	-
mo:rənəva	me:renəva	-
maturənəva	mætirenəva	-
maḍəvənəva	mæḍəvenəva	-
makənəva	mækenəva	makəvənəva
mahanəva	mæhenəva	massənəva
mavənəva	mævenəva	-
maləvənəva	mæləvenəva	-
marənəva	mærenəva	marəvənəva
ma:nənəva	mæ:nenəva	-

nidənəva	-	-
-	nimenəva	nimɐvənəva
nijəvənəva	nijəvenəva	-
nelənəva	nelenəva	neləvənəva
nerəpənəva	nerəpenəva	nerəpəvənəva
nerənəva	-	-
nɐmənəva	næmenəva	nammənəva
nalɐvənəva	nælɐvenəva	-
obənəva	ebenəva	obɐvənəva
otənəva	etenəva	otɐvənəva
orɐvənəva	-	-
pihiṭənəva	-	pihiṭɐvənəva
pihinəva	pihenəva	pissənəva
-	pirenəva	purɐvənəva
pi:nənəva	pi:nenəva	pi:nɐvənəva
pelenəva	-	-
perənəva	perenəva	perɐvənəva
perələnəva	perəlenəva	perələvənəva
-	pæhenəva	passənəva
pudənəva	pidenəva	-
puččənəva	piččenəva	puččɐvənəva
pumbənəva	pimbenəva	pumbɐvənəva
puruddənəva	piriddenəva	puruddɐvənəva
purənəva	pirenəva	-
-	pirɐvenəva	(causative) purɐvənəva
-	pevenəva	(causative) povənəva
polənəva	pelenəva	polɐvənəva
polə̃bənəva	pelə̃benəva	polə̃bɐvənəva
poɡ̃ənəva	peɡ̃enəva	poɡ̃ɐvənəva
-	perɐvenəva	(causat.) porɐvənəva
paturənəva	pætirenəva	paturɐvənəva
patənəva	pætenəva	-
paṭɐvənəva	pæṭɐvenəva	-

paṭələnəva	pæṭələnəva	paṭələvənəva
paddənəva	pæddenəva	-
pahadənəva	pæhædenəva	pahadəvənəva
pavərənəva	pævərenəva	pavərəvənəva
palənəva	pælenəva	palevənəva
palədə̃nəva	pælədə̃nəva	palədə̃vənəva
pa:dənəva	pæ:denəva	pa:dəvənəva
pa:gənəva	pæ:genəva	pa:gəvənəva
pa:rənəva	pæ:renəva	pa:rəvənəva
pa:jənəva	-	pa:jəvənəva
pa:jənəva	-	-
-	ridenəva	riddənəva
ringənəva	ringenəva	ringəvənəva
ru:ṭənəva	ri:ṭenəva	ru:ṭəvənəva
ravənəva	rævenəva	-
radə̃nəva	rædə̃nəva	-
-	sætəpenəva	-
-	sænəsenəva	sanassənəva
-	sæləsenəva	salassənəva
-	særəsenəva	sarəsənəva
-	sæ:henəva	-
su:rənəva	si:renəva	su:rəvənəva
sapəjənəva	sæpəjenəva	sapəjəvənəva
samərənəva	sæmərenəva	-
tijənəva	-	tibbəvənəva
temənəva	temenəva	teməvənəva
to:rənəva	te:renəva	to:rəvənəva
taṭəmənəva	tæṭəmenəva	taṭəməvənəva
tambənəva	tæmbenəva	tambəvənəva
tavərənəva	tævərenəva	tavərəvənəva
uputənəva	-	uputəvənəva

uturənəva	itirenəva	uturəvənəva
udurənəva	idirenəva	udurəvənəva
ugullənəva	igillenəva	ugulləvənəva
ugannənəva	igænnenəva	ugannəvənəva
unənəva	-	-
ussənəva	issenəva	ussəvənəva
uhulənəva	-	-
uluppənəva	ilippenəva	uluppəvənəva
ulənəva	ilenəva	uləvənəva
urənəva	irenəva	urəvənəva
ujənəva	idenəva	ujəvənəva

viməsənəva	-	-
-	vihidenəva	vihidəvənəva
virittənəva	virittenəva	virittəvənəva
vijənəva	vijenəva	vijəvənəva
vevulənəva	-	-
ve:lənəva	ve:lenəva	ve:ləvənəva
-	væṭenəva	vaṭṭənəva
vapurənəva	væpirenəva	vapurəvənəva
vada:rənəva	-	-
vadənəva	-	-
vaddənəva	væddenəva	-
vaṭələnəva	væṭəlenəva	-
vaḍammənəva	væḍæmmenəva	-
vaḍənəva	væḍenəva	vaḍəvənəva
vagurənəva	vægirenəva	vagurəvənəva
vanənəva	vænenəva	vanəvənəva
vama:rənəva	væmæ:renəva	vama:rəvənəva
vahanəva	væhenəva	vassənəva
valə̃dənəva	vælə̃denəva	valə̃dəvənəva
va:vənəva	væ:venəva	-

jodənəva	jedenəva	jodəvənəva

jatullənəva	jætillenəva	jatulləvənəva

Conjug. 2

adinəva	ædenəva	addənəva
ãdinəva	ædenəva	andənəva
amədinəva	-	-
aninəva	ænenəva	annənəva
arinəva	ærenəva	arəvənəva
ævidinəva	-	æviddənəva
æhidinəva	-	æhindənəva
bidinəva	bidenəva	bindənəva
badinəva	bædenəva	baddənəva
baninəva	bænenəva	bannənəva
bahinəva	bæhenəva	bassənəva
badinəva	bædenəva	bandənəva
dakiṇva	-	-
giliṇva	gilenəva	gillənəva
hitinəva	-	hiṭəvənəva
hidinəva	hidenəva	hindənəva
ihinəva	ihenəva	issənəva
ibinəva	ibenəva	imbənəva
kibihinəva	-	kibissənəva
kelinəva	keləvenəva	keləvənəva
kaninəva	kænenəva	kanəvənəva
kahinəva	-	-
laginəva	-	-

madinəva	mædenəva	maddənəva
maninəva	mænenəva	mannənəva
nægiṭinəva	nægiṭṭenəva	nægiṭṭəvənəva
naginəva	-	naggənəva
nahinəva	næhenəva	-
navətinəva	nævətenəva	navattənəva
obinava	-	-
pihinəva	pihenəva	pissənəva
pi͠binəva	pi͠benəva	pumbənəva
pu:dinəva	pi:denəva	-
padinəva	-	-
paninəva	pænenəva	pannənəva
pavətinəva	pævətenəva	-
pavattənəva	pævættenəva	-
parədinəva	pærədenəva	paraddənəva
pa:hinəva	pæ:henəva	pa:ssənəva
rakinəva	ræke͡nəva	rakkənəva
rahinəva	ræhenəva	rassənəva
upədinəva	ipədenəva	upaddənəva
vidinəva	videnəva	viddənəva
vi͠dinəva	vi͠denəva	vindənəva
vadinəva	vædenəva	vaddənəva
va͠dinəva	væ͠denəva	vandənəva
vaṭinəva	-	-
vadinəva	-	-
valəkinəva	væləkenəva	valakkənəva
varədinəva	værədenəva	varaddənəva

jadinəva	jædenəva	jaddənəva

Conjug. 3

bonəva	-	-
ba:nəva	-	-
denəva	devenəva	-
danəva	-	-
ga:nəva	gæ:venəva	ga:vənəva
ha:nəva	hæ:venəva	ha:vənəva
kanəva	kævenəva	kavənəva
lanəva	-	-
na:nəva	næ:venəva	na:vənəva
pa:nəva	-	-
renəva	revenəva	-
venəva	-	-
janəva	jævenəva	-

Conjug. 4

dannəva	-	-
gannəva	gænenəva	gannənəva

innəva - indənəva

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CLC	Chicago Linguistic Society
IL	Indian Linguistics
JASA	Journal of the Acoustical Society of America
JVLVB	Journal of Verbal Learning and Verbal Behaviour
UCR	University of Ceylon Review
JRASCB	Journal of the Royal Asiatic Society